

## THE BACON CURING INDUSTRY.

In the records that have been handed down to us there is abundant evidence that the pig has always formed an important element in Ireland's domestic economy, whether roaming in herds in the forest of the Chieftain or acting as a savings bank for the cottager. But it was only in more modern times that the Irish pig succeeded in making himself so universally known in the form of the now celebrated Irish mild cured breakfast bacon. Much labour and money had to be expended on him before this was accomplished. The old Irish hog was so ill shaped that we doubt if all the skill and accumulated experience of our present-day curers could succeed in turning him into marketable bacon. There is nothing to show when the first efforts were made to improve him, yet we think we are safe in saying that little was done in this direction until early in the last century. After that the owners of large estates seem to have occasionally imported some specimens of the improved breeds from England for the use of their tenants. However, any good that was accomplished practically disappeared again owing to the strained relations that arose over the land question. The boar-keepers then having no means of securing new blood continued to breed from their own stock, and deterioration in shape and quality followed as a result of in-and-in breeding. This neglect, although not universal, was pretty general, particularly in the West of Ireland. In Leinster and Ulster there was a fairly continuous importation of improved English breeds by private individuals. The effect of this must have been felt outside these provinces, as Irish swine, except in remote districts, began to lose their resemblance to the greyhound for which they had formerly been so remarkable.

A very interesting statistical review of the Irish Bacon and Provision trade was made in the year 1860 by the then Solicitor-General for Ireland, in a paper which he read before the Social Science Congress that met in Dublin in that year. As many parts of this paper have an historical interest and will further help to throw light on the present position of the bacon-curing industry, discussed in this article, several excerpts from it are here inserted.

“ During the Peninsular War Ireland possessed a great trade in curing beef and pork. Cork, Waterford, Limerick, and Dublin, all afforded their quota of beef to the English navy. Upon the proclamation of peace this trade fell off greatly, and the introduction of steam navigation, in 1825, tended still further to diminish the trade, for thus a ready market was opened in England for the live animal. Again, the repeal of the laws prohibiting the import of foreign cattle and provisions still further affected this trade, or so much of it as was left, and thus the supplying of beef has passed into foreign hands. Live animals and bacon now form the staple article of the Irish provision trade. The existence of this trade appeared to be perilled by the potato failure. Previously to it many cottier tenants,

and even those who had no land at all, kept their pig, and in fact the pig was often depended on for paying the rent.

The entire number of pigs in Ireland, in 1841, was	1,412,813
Of these there were owned by persons holding under	
one acre . . . . .	355,977
By those holding from one to five acres . . . . .	254,437
By those holding from five to fifteen acres . . . . .	342,436

Making a total of 952,850 pigs owned by those holding under fifteen acres each, and only 459,963 by those holding over fifteen acres.

The effect of the failure of the potato was to prevent the production of pigs and to force a sale of those on hand. The export of live pigs to England in the year 1846 was 480,827, and the number of pigs in Ireland was reduced in 1848 to 565,629, the decrease being 847,184 animals. Of these 323,337 were from the cottier class, each of whom held less than an acre of land; 223,882 were from those holding from one to five acres, and 260,882 from those who held from five to fifteen acres of land each; thus showing that the potato failure had swept away the principal live stock of the poorer classes.

There was at this time an increase in the number owned by those holding over fifteen acres of land. Persons prophesied that the race of pigs would disappear with the cottier class, but we shall find that it has not; and on the contrary, its production and fattening is now looked upon as a profitable branch of trade by the farmer having larger holdings. During the four years from 1847 to 1851, the number of pigs in Ireland increased steadily: in 1848 they were 565,629; in 1849, 795,463; and in 1850, 923,502. The export of live pigs during this period was very short of the export of 1846. Thus, in 1847 it was 106,407; in 1848, 110,787; in 1849, 68,053; and in 1850, 109,170; the total exports for the four years being 394,417 pigs, while in 1846 alone the export of live pigs was 480,872.

“Confining our attention at present to the export of live pigs and the annual produce of the country, we have returns which show a steady increase in the export of live pigs, without reducing materially the stock, as will appear by the following returns:—

Date.	No. of Pigs in Ireland.	Exports to England.
1851 .. ..	1,084,857	136,162
1852 .. ..	1,072,658	151,895
1853 .. ..	1,444,925	101,396
1854 .. ..	1,342,549	170,188
1855 .. ..	1,177,605	254,054
1856 .. ..	918,525	299,638
1857 .. ..	1,255,186	269,125
1858 .. ..	1,409,883	369,041
1859 .. ..	1,265,751	368,275
1860 .. ..	1,268,590	—

“The natural inference from the foregoing figures would be, that as the stock has not increased in proportion to the growth of the export trade, there has been a falling off in the quantity of bacon prepared; but in the absence of absolute data we should be slow to adopt this conclusion, especially when we find that the quantity of Irish bacon arriving in London (which is the principal market) has been steadily increasing since 1851. We should therefore rather attribute the increased exports to the earlier maturity of pigs in consequence of the improvement of the breed, and to the greater care bestowed upon them while young.

“The subject under consideration naturally divides itself into three branches:—1st, as to the annual production of pigs; 2nd, as to their geographical distribution; 3rd, as to the changes and improvements that have taken place in the manufacture of provisions.

“In the first class there are a large number so young that they will not be fit to kill within the year, the average age at which pigs are killed being about fifteen months, consequently the available product of each year will be less than the return by about one-fifth. In the return for 1859, the number under twelve months old is stated at 942,769, and if one-fifth be deducted for those under three months old it would leave 754,215 of this class as the available produce of the year: in the other class, that over twelve months old, the numbers are stated to be 322,982. Of these, about one-third—say 100,000—are breeding sows, but 222,982 would probably be left for conversion into bacon, thus making the total annual produce of pigs fit for sale at fifteen months old, 977,197. If the breeding stock be 100,000 and the annual average produce ten for each sow, we shall nearly arrive at the same result—viz., about one million pigs per annum. The export of live pigs in 1859 was 368,275, thus leaving for the home provision trade about 650,000 animals per annum.

“We must not overlook the fact that pigs are the only description of stock which is fattened and finished for the markets of Great Britain in Ireland. There is a large export from Ireland of cattle and sheep, but the bulk of these shipments are stores—that is, animals not fit for the butcher and which go to England to be finished. There are but a few fat oxen and sheep shipped, while all the pigs which are exported are fit to kill; thus the provision trade confers vast benefit on the agricultural classes in offering a ready market for this finished produce. On an average, pigs at twelve months old are worth about 40s. each; they are then put in and fed on corn food for two months or ten weeks, and then sold at an average of £3 10s.; so that the farming classes receive about £3,500,000 per annum from this branch of trade.

“Secondly, as to the geographical distribution of pigs. The influence of the large curing establishments of Waterford, Cork, Limerick, and Belfast, on the production of pigs is very great. The number of pigs in Ireland, in 1860, was 1,268,590; the area of the country is 20,315,111 acres, and on an average there was one pig to each sixteen acres of land. In Waterford county there was one pig to each eight acres, being double the average of the whole of Ireland; in the neighbouring counties of Kilkenny and Wexford the average was one pig to ten acres. Going further, we find that in Cork, Tipperary, and Limerick, there was one pig for twelve acres; in Clare, one pig for twenty acres; and in Kerry, one pig for twenty-two acres. These eight counties, containing 7,154,312 acres, had a pig population of 507,211, being at the rate of one pig to each fourteen acres; while the rest of Ireland, having an area of 13,660,801, had only 721,379 pigs, being at the rate of one pig to each nineteen acres.

“Waterford produces nearly two-thirds of the Irish bacon imported into London, and the pigs supplied by the adjacent counties, Waterford, Kilkenny, and Wexford, not being sufficient for the wants of the trade, Waterford buyers attend the fairs in Carlow, Tipperary, Cork, and Limerick, extending their journeys at times into the midland counties, into Connaught. If pig-feeding be, as no doubt it is, profitable to farmers, it follows that facility of access to the principal market is of great importance to them. The risk from delay, the loss of interest on the money employed, and the expenses of conveyance, have all to be calculated by

the purchaser, so that a farmer at a distance practically pays the cost of the carriage of the pig to Waterford.

“The pigs which come to Waterford market all arrive alive and are killed and cured at the provision stores, but those which reach Belfast market are brought in dead and are only cured by the exporters. Belfast is the only place in Ulster where a large provision trade is carried on, and its exports, partly of hams, are considerable, while in Munster there are large establishments at Waterford, Cork, and Limerick.

“A large proportion of the bacon and hams cured in Belfast is exported to the colonies, and the remainder finds consumption in this country, as well as in Lancashire and the north of England. A similar trade to that of Belfast has been carried on in Limerick for many years. In the north the pigs are killed by the farmers at their own homesteads and then brought to market; while in Limerick they are slaughtered in the curing establishments. In both cases the bristles are removed by scalding, previous to curing, while those animals intended for bacon for London must have the bristles taken off by singeing. Slight as this difference may appear, bacon prepared in the former way will not sell in the London market. Belfast bacon and hams are shipped in a finished condition, dried and smoked, while that from the south of Ireland, with the exception of a portion of that manufactured in Limerick, is shipped in an undried state, and is dried and smoked at the other side. The bacon cured in the south is sent chiefly to London; it differs from that cured in the north in another particular, namely, that the ham is not separated from the flitch; it is shipped in bales, each bale consisting of the flesh of two pigs.

“There has been an increased demand for and consumption of bacon in London, which has enhanced the price; but even this inducement has failed to increase materially the supply from Ireland, and the deficiency is met by much larger foreign arrivals. The London price for bacon on the 1st October, 1858, was 50s. to 61s. per cwt.; at the same date in 1859, it was 56s. to 67s. per cwt.; and in 1860, 70s. to 75s. per cwt.: the quotation for July, 1861, was 75s. to 79s. per cwt. This advance in price has produced an increase in the imports of foreign bacon into London. In the year 1855 they were 20,306 bales; in 1856, 19,891; in 1857, 26,425; in 1858, 18,664; in 1859, 23,411; in 1860, 43,770. Of the Irish supply to the London market considerably more than one-half is cured in Waterford.

“Third, as to the recent improvements in the mode of curing bacon.

“Previous to the application of steam to the propulsion of vessels, the only mode of intercourse between Ireland and the sister isle was by sailing ships: and as their passage was more or less doubtful and protracted, it was necessary that bacon should be salted sufficiently to bear the longest voyage. Subsequently, a regular line of fast-sailing ships was put on the berth between Waterford and London, sailing once a week, whether fully loaded or not. This was a vast improvement in the mode of transit, and enabled the curers to moderate the amount of salt used; but since the introduction of steamers, by which alone provisions are now conveyed, the greatest care is taken to prevent over salting, and an article is now produced by the Irish curers which brings the highest price in the best markets in the world. The usage of the trade some years ago was to suspend working about the 1st of May, and to resume about the beginning of October. Most of the men employed in curing were only engaged for the season; a few of the best hands were retained during the summer, at reduced wages. Several modes of curing bacon in summer were suggested and tried; many of them failed, and at length a Waterford curing

establishment discovered a method of applying ice in the process, which has been wonderfully successful. This invention has conferred material benefit on the Irish farmer, as he can now find a market for his pigs through the entire year.

“The pig requires a good deal of warmth while fattening in winter; this warmth has to be produced by food; it follows that a much greater quantity is necessary to bring up a pig to a given weight in winter than in summer; consequently the summer feeding is the most profitable, and the introduction of a mode of curing which enables the process to take place in summer has proved a source of vast profit to the farmer, as well as a great boon to the working men who now have constant employment in place of the intermitting engagements of former times. The bacon which is cured by ice is treated in this manner:—The flitches are carefully piled in large tanks; pickle, which has been brought to a given temperature by the use of ice and salt, is then poured in, and as the temperature is raised by the warmth of the atmosphere or of the article operated on, further cooling is effected from time to time. The process in very warm weather is more tedious and difficult than during the cooler part of the summer. The ice-cured bacon is sound and firm, and, consequently, much prized. The farmers in the south of Ireland have not been slow to avail themselves of the opportunities offered by a summer market, and we find that the proportion of pigs over twelve months old is much greater in the southern counties than in the west or north of Ireland.

“The returns are taken in the month of June, and the pigs which are enumerated as being over twelve months old are, with the exception of breeding sows, animals that will be killed in the summer and autumn months. In June, 1859, when the return was taken, there were in Ireland pigs over twelve months old, 322,982.

Of these there were in Munster . . . . .	150,097
„ in County Kilkenny . . . . .	10,515
„ „ Wexford . . . . .	12,970
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Total in eight southern counties . . . . .	173,582
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Leaving for the rest of Ireland . . . . .	149,400

“The very high price of pigs which prevailed in the spring of 1860, and the scarcity of food, reduced the stock of animals of the age under consideration, and we find that in June, 1860, there were in Ireland pigs over twelve months old, 274,116.

Of these there were in Munster . . . . .	124,782
„ in County Kilkenny . . . . .	8,800
„ „ Wexford . . . . .	10,096
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Total in eight southern counties . . . . .	143,678
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Leaving for the rest of Ireland . . . . .	130,438

“The above figures show very decisively the beneficial effect which the system of summer curing by ice has had on the farming operations of the south of Ireland. It enables the pig-farmer to economise food by fattening these animals during the summer; it offers to them the advantage of an immediate sale as soon as the pig is ready for market, whereas, formerly, they had to be fed until the usual winter season opened in October, though the increase in weight was far from proportionate to the cost. The

consumer also reaps advantages in having delicious mild food at all seasons, instead of highly salted and overheld bacon."

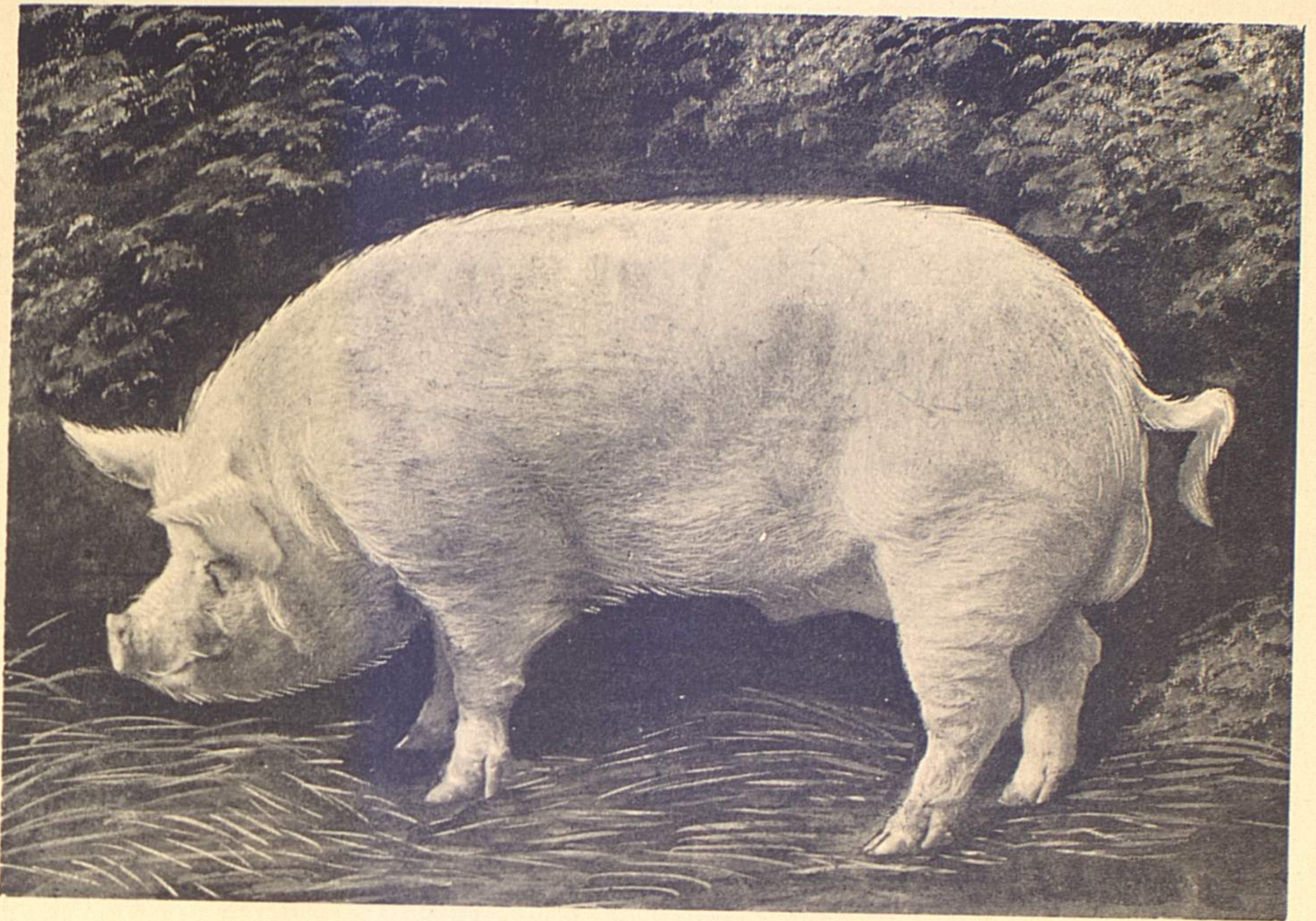
An important step in the direction of swine improvement was taken at the Albert Institute, Glasnevin, County Dublin, in the sixties.

The present herd of pigs at the Albert Farm has been in existence for a long time. About forty years ago the late Prince Albert sent from his herd at Windsor several animals of the type then known as the Improved Yorkshire. The foundation of the Glasnevin herd was laid by crossing these Windsor pigs with the best animals from Irish herds. The Large Yorkshire pigs were unknown in Ireland until the early fifties, when Wainman, of Yorkshire, and Duckering, of Lincoln, had produced a variety of Yorkshires of enormous proportions. Other breeders followed, notably the Earl of Ellesmere, Mr. Sanders Spencer, of Huntingdonshire, and Mr. John Barron, Barrowash, Derby, from whose herds the best animals were selected about twenty years ago. By the selection of sires, discarding at once any animal that showed the least trace of the Smaller York breed, and by carefully selecting the true type of Large York, a herd has been secured which possesses all the characteristics of the best strains of the Large White Yorkshire pigs. The object kept prominently in view has been to produce animals that will grow quickly, and attain to a great size and weight with a minimum amount of offal. All the stock pigs now on hands are remarkable for their even-fleshed bodies, good hams, straight legs, thin skins, and large quantity of silky hair. The herd is kept in a normal breeding condition, and none of them are made up for show.

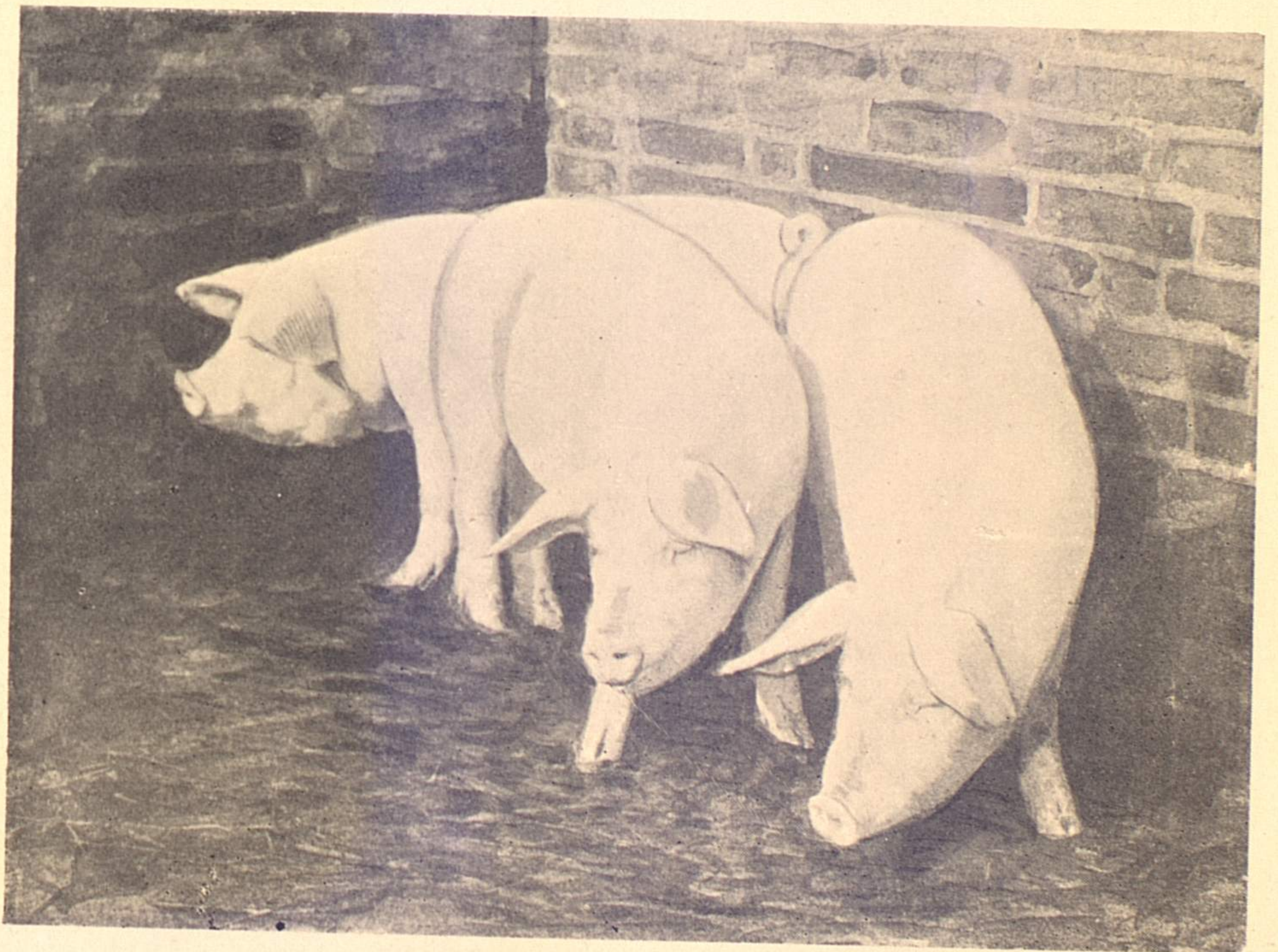
A few photographs of swine from the Glasnevin herd accompany this article.

About 1877 some of the bacon curers in Munster made efforts to improve the pigs in the districts from which they drew their supplies, but it was not until about ten years later that any organised effort was made by the members of the provision curing trade to get the farmers to breed the class of pigs most profitable to themselves and most suitable for the production of high class bacon. Munster had taken the lead in the bacon curing business, owing, probably, to its being the best dairying district in the country, but a great part of its supplies of pigs was drawn from Connaught. There the pigs had remained poor in quality, bad in shape, and black in colour. Boars of the Large White Yorkshire breed were imported and sent to remedy this, but for a very long time much difficulty was experienced in getting the farmers to take advantage of the opportunities for improving the pigs. They still clung to the long-legged, flat-hammed animal, whose unthriftiness was in sad contrast to his appetite, with the result that for years the prices quoted by the bacon merchants for Connaught pigs were always a couple of shillings per cwt. under the prices quoted for those in Munster. Perseverance eventually conquered, and to-day as fine pigs can be found in Connaught as in any other province.

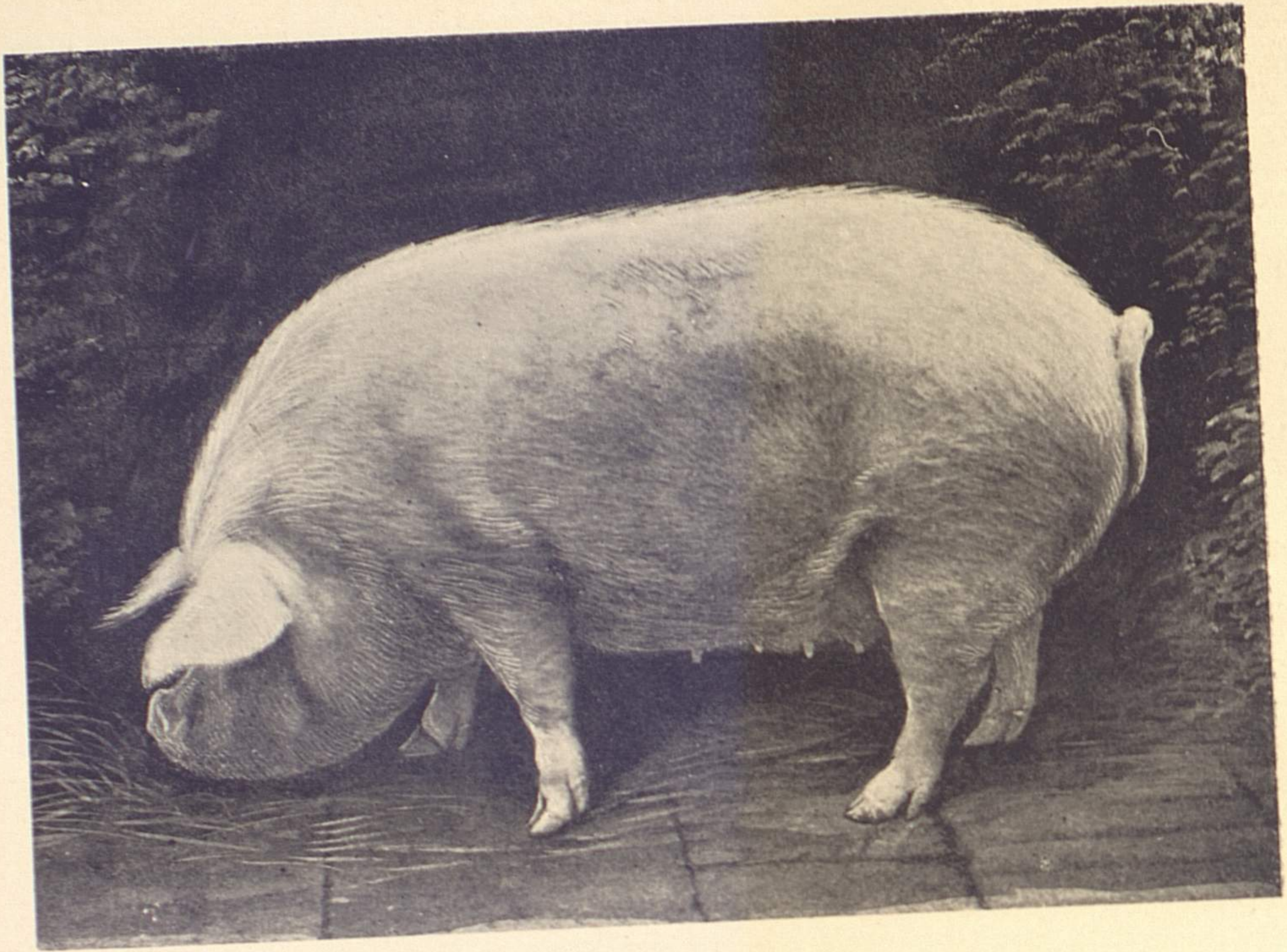
The South of Ireland Bacon Curers' Pig Improvement Association has three breeding establishments, one at Limerick, one at Cork, and another in Waterford. To each of these is attached a skilled inspector whose duty it is to keep in constant touch with the boar-keepers in his district, to supply them with boars bred at these establishments or purchased from the herds of reliable breeders, such boars being calculated to rectify the faults that may be noticed generally in the pigs of districts where they are stationed, and to prevent in-and-in breeding. We are informed that this Association



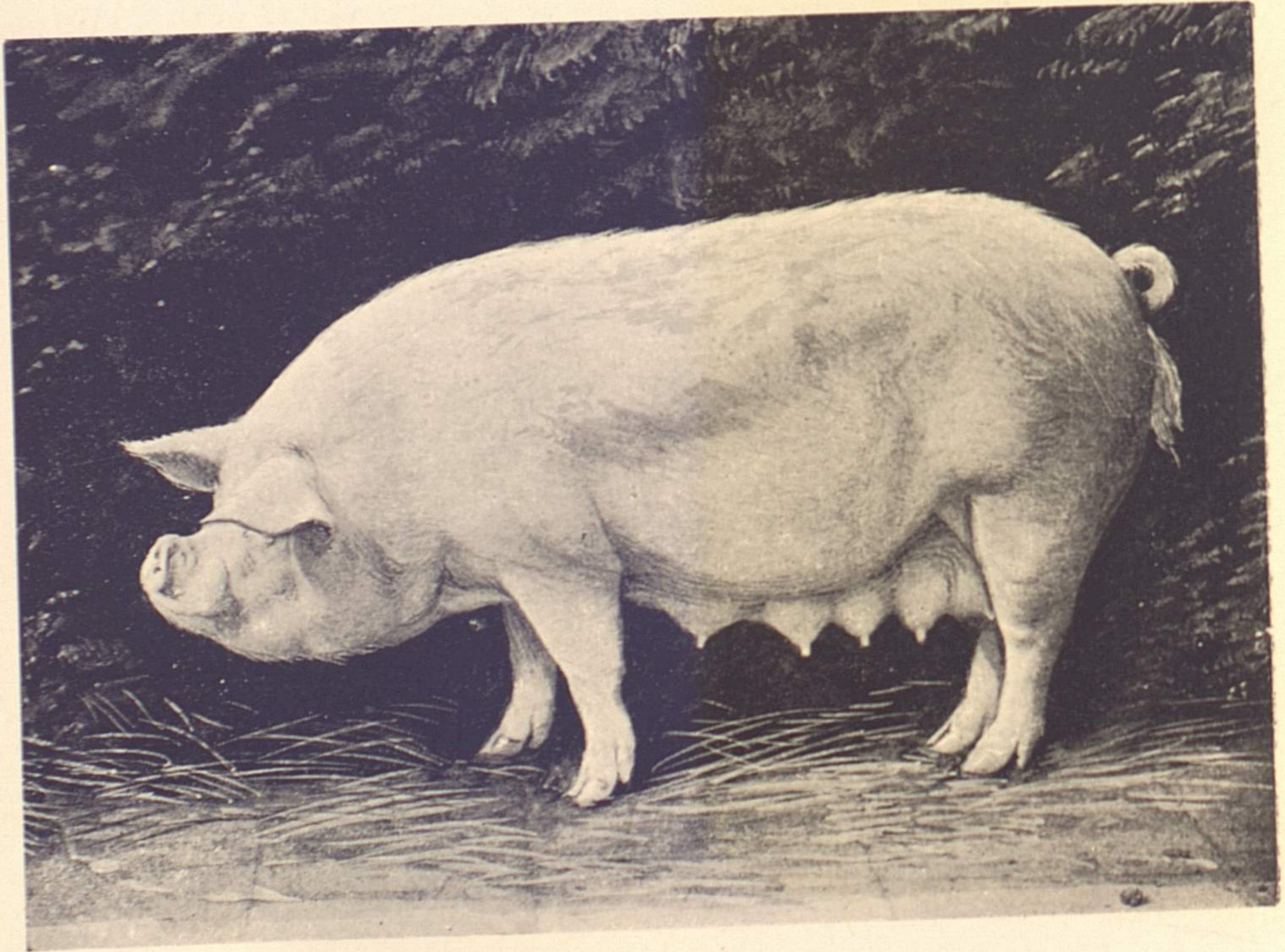
"ALBERT GEM"—BOAR, FOUR YEARS OLD.



THREE YOUNG SOWS, FIVE MONTHS OLD.



"ALBERT WONDER III."—SOW, FOUR YEARS OLD.



"ALBERT WONDER V."—SOW, THREE YEARS OLD.



has up to the present spent £13,000 in their improvement schemes, and that for the past four years they have sent out over 1,420 boars, which were placed as follows:—Tipperary 231, Galway 115, Clare 188, Roscommon 28, Limerick 133, Kerry 67, Sligo 24, King's County 51, Cork 91, Mayo 74, Queen's County 77, Kildare 27, Wexford 115, Waterford 71, Kilkenny 108, Carlow 18.

Of late years the Congested Districts Board have included the distribution of boars in the good work in which they have been engaged, having placed 230 boars; Donegal having received 37, Cork 15, Kerry 18, Mayo 83, Galway 40, Sligo 7, Leitrim 15, Roscommon 15.

The Department of Agriculture issued its first scheme for the improvement of the breeding of swine in May, 1901. The Department believe the number of well-bred boars in Ireland is not sufficient to warrant them in hoping that a very large number of premiums for these sires can be taken up for the next few years; but it is believed that the offering of the premiums will have the effect of inducing more farmers to go in for the breeding of pure-bred animals. Should it be possible to relax further the restrictions on the importation of swine from Great Britain, this class of live stock may also be improved by the importation in greater numbers of pure-bred boars.

The text of the Department's scheme for 1902 is given hereunder:—

#### DEPARTMENT OF AGRICULTURE AND TECHNICAL INSTRUCTION FOR IRELAND.

##### *Scheme for Encouraging Improvement in the Breeds of Swine.*

1902.

SWINE.

“1. The joint fund available under this scheme for encouraging improvement in the breeds of swine shall be applied chiefly in providing premiums for selected pure-bred boars; and the remainder may be offered in prizes for swine, in accordance with the regulations of the Department's scheme of prizes at county and local shows (see Clause 13, section iv. of that scheme).

“2. Under exceptional circumstances the Department may provide for a county, as far as funds will permit, and under certain conditions to be prescribed by them, by granting a loan for a short period to enable a representative, appointed by the County Committee, and an Inspector of the Department, to import suitable boars into the county on behalf of approved applicants.

“3. Subject to the approval of the Department, premiums may be restricted to any one or more pure breeds of swine.

“4. Only boars eligible for entry in the Register of Pigs of the Royal Dublin Society shall be selected for premiums. The owner of a boar selected for a premium must have the animal entered in said Register.

“5. Boars belonging to any Society or to any Association of Farmers shall be eligible, if pure-bred, to compete for premiums.

“6. The value of a county premium shall be £5, tenable for one year.

“7. A boar which was awarded a county premium in 1901 shall not be eligible for a premium under this scheme.

“A boar which may be awarded this year a premium out of funds

administered by any other body shall not be eligible for a premium under this scheme.

"8. The County Committee shall appoint a judge (who must be non-resident in the county) to select boars for premiums along with the Department's Inspector, and the selection of the judge and the Department's Inspector shall be final.

"In the event of the judge appointed by the County Committee being absent for any reason, the Department's Inspector shall judge alone, and his selection shall be final.

"9. Boars shall be selected at the principal shows and at local exhibitions.

"10. On consecutive dates and at places to be at first approved of by the Department (in writing), one or more special local exhibition of boars may be held.

"(1) Local exhibition of boars must be advertised by posters or in the local newspapers, at least five weeks before the dates fixed for the exhibition. (2) Entries for these exhibitions must be made on forms to be supplied by the Secretary of the County Committee. Such a form must be signed by the owner of each boar, and, if required, he must sign a statutory declaration to the effect that the particulars given in the entry form are correct. (3) Boars from all parts shall be eligible to compete provided they are to serve in the county. (4) Whenever practicable, and in order to avoid unnecessary expense, two exhibitions should be held on one day at two centres, *i.e.*, one in the morning and one in the afternoon. (5) Supplemental exhibitions will not be sanctioned. (6) The selection made for premiums at these exhibitions shall be provisional. (7) The County Committee shall meet immediately after the last exhibition and allocate the available premiums, having regard to the condition of each part of the county. (8) Not later than six days after the holding of the last exhibition the Secretary shall prepare and submit to the Department a complete list of the boars recommended by the County Committee for the season.

"11. The entry fee for premiums shall not exceed 2s. 6d. per boar.

"12. No person shall possess two premium boars of the same breed unless located at least three miles from each other.

"13. The selections under Clauses 9 and 10 will not be final until the approval of the Department has been given in writing.

"14. The Secretary of the County Committee shall, as soon as the Department have approved of the boars selected, supply the owner of each premium boar under this scheme with posters which such owner must undertake to distribute in the district in which the boar is to serve.

"15. Each premium boar shall serve not less than thirty sows. The service fee, inclusive of all charges, for this number of sows shall not exceed 1s. for each sow. After the minimum number of sows have been served, the owner of the boar may fix such fee as he desires.

"16. The County Committee may make such provision as they think necessary with regard to the maximum number of sows which may be served during the season.

"17. Each sow shall be the property of a farmer, the aggregate tenement valuation of whose holding or holdings wherever situated, and for which he is rated, does not exceed the limit fixed by the County Committee.

"Herds, *bona fide* agricultural labourers, and artisans may obtain service for their sows on the same terms as a farmer.

"18. The term 'farmer' is to be understood to mean a person who derives his means of living mainly from farming.

"19. The owner or owners of a premium boar shall not, before the

stipulated number of sows have been served, reserve the use of the boar for the sows of any individual or of the members of any Society. Subject to the provisions of Clause 23, sows must be served by a premium boar in the order in which they are presented.

“ 20. The Department reserve the right to brand or mark premium boars, and to inspect them from time to time.

“ 21. (1.) Not earlier than 1st September, 1902, and not later than 1st December, 1902, the owner of each premium boar shall forward to the Secretary of the County Committee a form containing a return of the names, addresses, and valuations of the persons whose sows have been served by the premium boar, at the fee named in Clause 15, together with a statutory declaration, signed before a magistrate, other than the owner of the boar, certifying that the said sows have been served, and that all the regulations of this scheme have been complied with. (2.) The Secretary of the County Committee shall examine and check all these documents, and when correct shall forward same to the Department. (3.) As soon thereafter as the Department are satisfied as to the fulfilment of the conditions of this scheme, their share of the grant payable thereunder will be transmitted to the Treasurer of the County Committee of Agriculture and Technical Instruction, and the Secretary shall be notified that payment may be made to owners of boars by that Committee of the premiums, or part of the premiums, payable under this scheme. (4.) Any premium not applied for on or before the 1st December, 1902, shall be considered as having lapsed.

“ Forms for the declaration required by this clause may be had on application to the Secretary of the County Committee.

“ 22. In the event of a boar being unable, from any cause, to complete the prescribed number of services, the Department reserve the right to withhold the premium, or any part of it, or in any other way to deal specially with the case, according as the circumstances may require.

“ 23. The owner of a premium boar has the right to refuse the use of his boar in any case where he is satisfied that the service would be prejudicial to the animal. The reason for such refusal must, however, be communicated to the Department and to the County Committee, immediately on the refusal of the application.

“ 24. The service season for premium boars shall close finally on 30th November.

“ 25. Pigs to be eligible for a prize or commendation shall be of such conformation as the judge or judges and the Department's Inspector consider suitable for the improvement of swine in Ireland.

“ 26. In all cases of dispute in matters connected with this scheme the decision of the Department shall be final.

In the North of Ireland no organised effort to improve the breeds of swine was made; but the farmers there took the matter in their own hands and have succeeded in maintaining a fair standard of quality in their pigs. With regard to the present condition of the Irish bacon trade generally, it has been found that the Large White Yorkshire is the breed best fitted for the purpose of improving the pigs of the country; or rather, we should say, the improved Large Yorkshire, the original pig of this type being a coarse animal with heavy jowl and ears, which did not mature until a great weight had been reached, much greater than is needed by modern requirements. The nearest approach to perfection is something between the Large and the Middle York breeds, and this has not alone been produced by some breeders, but has been successfully maintained. The Berkshire, although

an excellent type and very popular with the English curers, has failed to "nick"—as the breeders' expression is—with the common Irish pig. The Tamworth has also been tried and found wanting, while the Suffolk has been rejected on account of its black colour and large proportion of fat to lean meat; and therefore the York at present holds the field. The cross between boars of this breed and native sows has been found most successful both from the farmer's and the curer's point of view. It possesses a vigorous constitution, is a capital feeder with a good digestion, a quick thriver, and very prolific. It suits the curer because in it the more valuable cuts predominate, and the offal is light. It suits the feeder because it finishes quickly and gives proportionately good weight for the amount of food it consumes. Beyond what was done by the Bacon Curers' Association little or no effort was made otherwise to encourage the breeding of the proper class of pigs, compared with what has been done for horses, cattle, and sheep. The labourer or cottager whose pig not alone represented his largest investment in live stock, but also the foundation of the country's bacon curing industry, was seldom if ever reached by the few prizes that were offered at the annual shows of the Royal Dublin Society or at the limited number of shows held irregularly in the provinces. For many years prizes were awarded to pigs, not because they possessed the points looked for in a good bacon pig, but because they were fatter than their competitors. There was no Irish herd book; and a pig with a pedigree was not thought of except by the few well-to-do breeders who registered their pigs across the Channel. In fact the quality of the products of the animal appears to have been overlooked for its appearance and fatness.

The herd book recently started by the Royal Dublin Society, and the scheme of Service premiums now established by the Department of Agriculture, and explained in the scheme quoted above, are distinctly moves in the right direction. Much care will, however, require to be taken that the County Councils are not led by those who admire pigs of a particular breed, and whose ambitions are to produce animals showing in the greatest perfection the points associated with this particular breed, regardless of the great ultimate end of all pigs—pork and bacon.

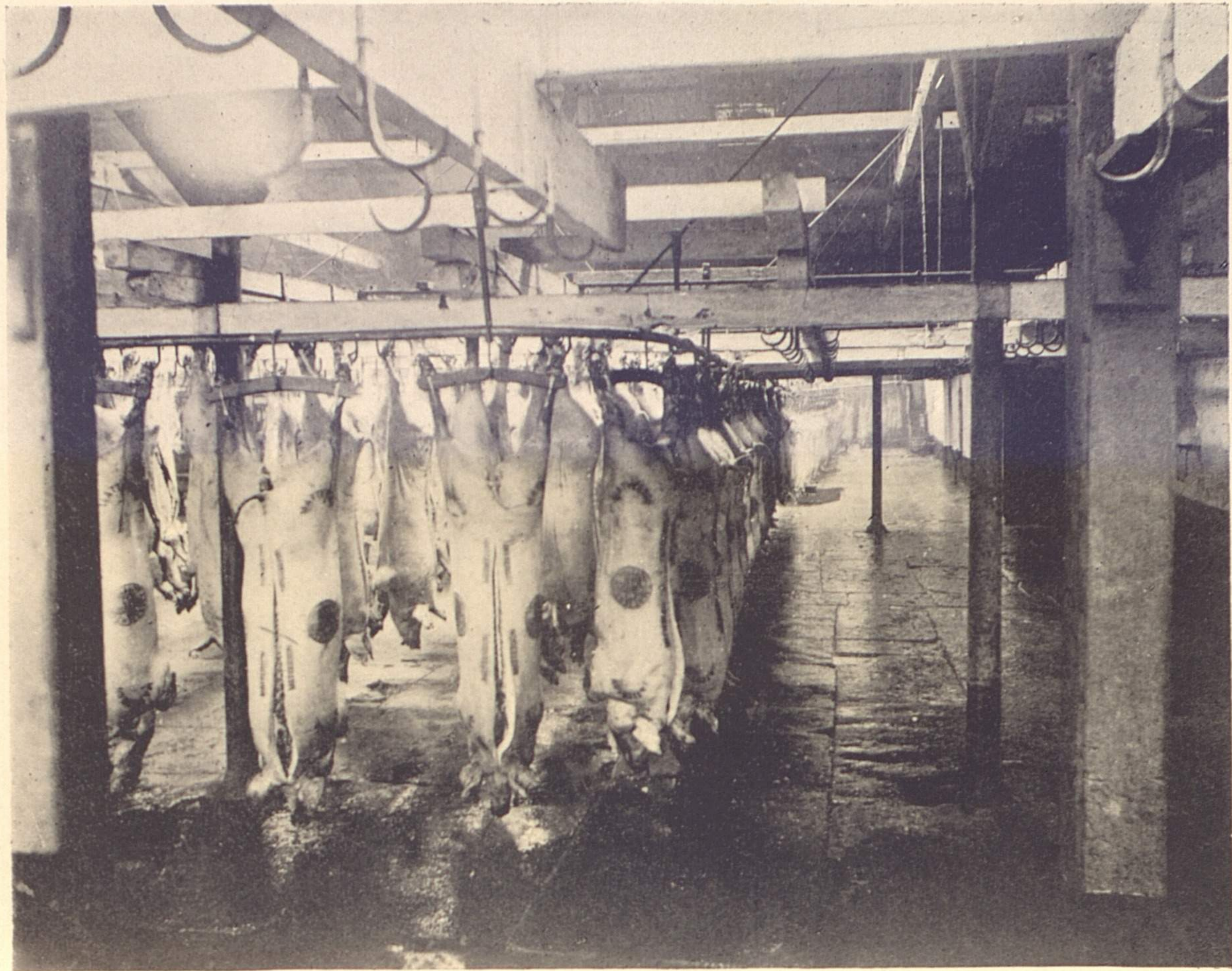
Each breed has its own advocates, but it is not too much to ask that the judges in such an important matter should be those whose business is to make the most money in the shortest time out of the animal alive, viz.—the feeders, and those who are compelled to stand the brunt of a vigorous competition in selling him when manufactured into bacon, viz.—the curers.

Denmark, which has been Ireland's greatest competitor for the English trade in bacon since 1887, has not been idle in the matter of improving its swine. Up to the middle of the last century the same description might be applied to the Danish as applied to the old Irish pig. It was hardy, but ill-shaped, and very unthrifty. In 1887, when Germany prohibited the importation of swine, and the raw products from swine, Denmark turned its attention to the English bacon market. It imported, with State assistance, specimens of the best English breeds of swine, and has succeeded in changing the character of its swine as regards appearance and quality. It has now about 100 breeding centres devoted to the breeding of the best class of pig suitable for producing pork to be manufactured into the highest class bacon, and raises more than double the number of swine it did twenty years ago, the production increasing from 1,200,000 to 2,043,000 in five years. It has now 25 co-operative slaughter-houses, which annually deal with from



TIN-MAKING DEPARTMENT.

MATTERSON & SONS, LIMERICK.



KILLING BAR AND HANGING HOUSE.

700,000 to 725,000 pigs, and employ from 500 to 550 hands exclusive of the clerical staffs. In Ireland, not including a number of small curers, who kill merely to supply a limited local trade, there are 20 factories, being all either Limited Liability Companies or private concerns except one started a short time ago in Tralee in the English Co-operative Wholesale Society. These factories deal annually with about 850,000 pigs, and employ over 1,600 hands, not including the clerical staffs.

The greater number of hands employed in Ireland is accounted for by the number of minor industries carried on in connection with the bacon factories in this country, which either do not exist or exist only to a very small extent in Denmark. The average number of pigs produced in Ireland for the twenty years ending 1900 was 1,322,480, while in 1901 the number fell to 1,219,135, being a reduction of 103,345. During this period the shipping of pigs alive to Great Britain has increased rapidly, the average number shipped during the first five years being 440,432, the second five years 504,778, the third 518,659, and the fourth 659,687. In 1900 there were shipped 715,202, but last year the number fell to 596,129. Looking back a couple of years it would at the first glance appear that this trade depends to a great extent on the supply of pigs in Great Britain, as we find that the decrease there under the average for the 20 years was 313,921 for the past two years, while for the same period the increase in the shipping trade over the average was 320,673. Ireland during those two years was 157,496 short of its normal supply, which with the increased shipping meant that there were over 478,000 less to be turned into Irish bacon. But going back further, say five years, we find that the total number shipped over the average is more than twice as great as the total shortage under the average supply in Great Britain during the same time. It is, therefore, apparent that serious inroads are being made into the Irish curers' supplies of raw material. The killings in Ireland increased steadily from 1880 to 1890, the province of Munster alone accounting for 787,223 pigs in 1890, as against 486,400 last year.

Much of the increase in the shipping of pigs from Ireland may have been due to the very severe restrictions imposed in England on the movements of swine from one district to another in the effort to stamp out swine fever there. In Ireland this was done much more successfully; and a well deserved tribute is due to the Veterinary Department (now under the Department of Agriculture), for the able manner in which they have combated the disease. The increase may also be accounted for (*a*) by the increase in the consumption of pork in England; (*b*) by the increase in the number of bacon curing establishments in England.

The supply of pigs in Ireland has in the past been looked on, to a great extent, as depending on a good or a bad potato crop; but as we have already pointed out, Denmark, whose climatic conditions are not at all as favourable to pig raising as Ireland's, and which is not a potato-growing country, and in extent but very little larger than the province of Munster, succeeds in producing annually 50 per cent. more pigs than the whole of Ireland. Denmark, it must be remembered, however, grows feeding barley, and this, with the large supply of skim milk available enables the Danes to compete with Irish bacon curers and farmers who use potatoes, etc., instead of barley.

Tradition has it that the birthplace of the bacon curing industry was Balinglass in the County Wicklow, and that that county was at one time the

scene of operations of a large number of small curers, who cured long sides for the Dublin market. This particular "cut" of bacon is still being turned out although with waning prosperity.

The greatest impetus given to bacon curing was undoubtedly the rapid advance made by the dairying industry in Ireland generally, the province of Munster being particularly forward in this direction. One of the best ways to utilise the waste products of the dairy was, no doubt, in pig-feeding, and consequently the pig became a necessary adjunct to every dairy farm. The largest curing centre in Ireland is Limerick, the annual turnover there being about equal to that of Cork and Waterford together. These cities come next to it and each deals with about the same number of pigs. Next come Belfast, Londonderry, Dublin, Tralee, Enniscorthy, Dundalk, Ballymena, and New Ross. The system of marketing in the North of Ireland differs very considerably from that in the centre and South. In the North the farmers kill and clean the pigs themselves, and bring them to the markets. The "offal" of the pig in Ulster is utilised as food at the farm house where the pig is fed, which is a distinct advantage to the small feeder in providing a wholesome and economical addition to his diet. All through the rest of the country the pigs are sold "on their feet," that is to say, they are driven or conveyed to the markets alive to be sold to the buyers who purchase either for the home curers or for exportation to the bacon curers or fresh pork butchers in England.

The farmer who keeps a breeding sow generally markets the bonhams or "slips," as they are sometimes called, at ten weeks old, after which they are kept by the purchasers who feed them until they are sixteen weeks old, when they are sometimes brought to the market a second time and sold as "stores." The purchaser of the stores feeds them until they are properly finished which should be, if the best results are to be attained, when they are between five and a-half and six months old, and then disposes of them at the markets or fairs to the regular pig buyers, who buy either as commissioners for the home or English curers. The purchaser of the fat pigs sometimes buys on his own account to sell the pigs again by dead weight at some of the Irish bacon factories. The original breeder, or more probably the man who purchased the bonhams at ten weeks old, frequently feeds the pigs until they are fully finished and ready for the bacon curer. This has been found the most general as well as the most profitable way of dealing with the fattening of pigs. In districts of small farms where each farmer fattens one or two pigs, it is universally the system pursued.

Of late years a system has come into vogue around Limerick and Waterford of sending the pigs when fattened direct to the curers either in the owners' cars or by rail from long distances. Most of the large merchants have agents in the surrounding towns, who quote the current prices each week. The farmer hands his pigs to the agent, who attaches a numbered tin label to an ear of each animal, loads and consigns them at the railway station to the bacon curer, giving the owner a receipt which notifies (a) the numbers on the labels which have been attached to the pigs' ears; (b) the conditions on which they are received, and the current price for each quality of pig. The agent sends the same particulars to the firm for which he acts. The animals are killed and weighed on the day following their purchase, and cheques for the amounts they realise are at once posted to the owners together with a ticket showing the weight of each pig, and the quality in which he was classified.



These selections of quality are:—"sizeable," "stout," "overweights," "heavy overweights," "unfinished," "sixes," and "Berwick." "Sizeable," are those pigs that generally, because of suitability to public requirements, command the highest price all the year round. Though well-finished, they must not be over fat, and must turn the scale dead weight at about 12 stone, which indicates that they should weight from 15½ to 16 stone alive. "Stout," (1 cwt. 2 qrs. 15 lbs. to 1 cwt. 3 qrs.) and "overweights" 1 cwt. 3 qrs. 1 lb. to 1 cwt. 3 qrs. 14 lbs), are, as a rule, 2s. to 3s. under the top price, as the bacon manufactured from them is inferior and has to be sold at considerably less than best quality in the English markets. "Heavy overweights" (over 1 cwt. 3 qrs. 14 lbs) are of little or no value for high-class bacon, and are taken at 4s. to 6s. per cwt. under the top quotation. "Sixes" (under 1 cwt. 1 qr.) sometimes command top price, but in some seasons, notably the Spring, they are quoted 2s. to 5s. per cwt. less, and, of course, it then pays the farmer to keep them for a few weeks longer even if he has to purchase food for them.

These five selections are for the English long-side "singed" trade, while "Berwicks" are for the Irish "middle" and "ham" trade. The "Berwick" are small plump pigs, averaging about 1 cwt. dead weight, that is to say, ranging between 7 and 8½ stone. As a rule they fetch the same price as "sizeable" bacon pigs, but occasionally are quoted 2s. per cwt. more or less according to the supply. "Unfinished" pigs are thin, coarse-legged, thick-skinned, pigs of soft fat, that through being badly bred or badly fed, or both, do not "finish" properly. These are almost valueless to the bacon curer. One of the leading bacon curers has described the points of a perfect pig as follows:—Neat in the head, light in the neck and shoulders, deep in the region of the heart and well sprung in the ribs, thick in the loin, stout in the thighs, short in the leg, and long and silky in the hair.

The method of sending pigs through agents direct to the curer is said to have had a wonderful educational effect on the farmers of the districts in which it is practised, from a commercial as well as an agricultural point of view, teaching them to be excellent judges of the probable weight of their pigs when killed, and impressing on them the absolute necessity of proper breeding and proper feeding if they wish to have their pigs ready for market in the shortest time and obtain the highest current prices for them when ready.

In olden times bacon was cured "hard salted," as owing to the slow and uncertain means of transit it was required to keep much longer. The process of curing was very primitive. The pig having been stunned by one or more blows of a mallet, as the case might be, its throat was cut and the blood allowed to flow. The carcass was then surrounded by a quantity of straw or reed, which was set on fire in order to burn the hair off the skin, which was then scraped after hot water had been thrown upon it and it had been hung up by the hind legs. Having been disembowled and left suspended in the hanging house for twenty-four hours, it was weighed and paid for as dead weight. The shoulder blade bones and loin bones were then removed, the sides were laid on a flagged floor in what was practically an open shed, and salt and saltpetre scattered over them. There being no artificial way of producing cold, the curing could be carried on only for six months of the year. The Berwick pigs were treated in much the same way, except that instead of the hair being burned off, the slaughtered pig was thrown into a wooden vessel of boiling water and left there until the hair

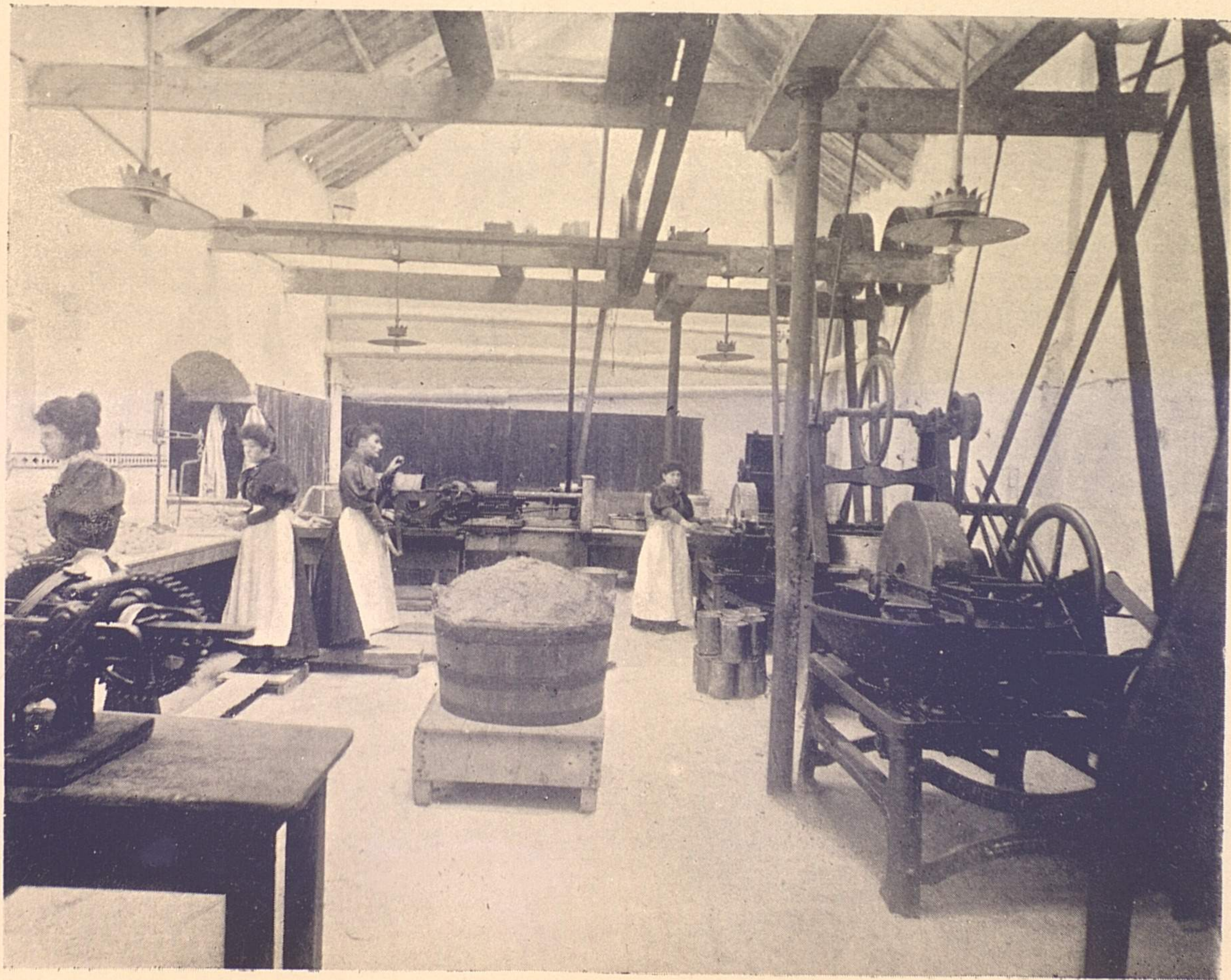
would come freely off when it was scraped, and the sides cut into three pieces before being put into salt.

The introduction of ice-curing came, as will have been seen from the quotation at the beginning of this article, about 1860, and this system, too, was carried on in a very crude way at first, the ice being simply left in open crates in the centre of the building where the curing was in progress, in order to keep the air cool. The next step was the Harris patent Ice House. This consisted of large chambers on iron floors supported by heavy beams or uprights; the necessity for strong supports will be understood when we mention that one of these floors had to bear as much as 1,000 tons of ice at a time in the bacon curing season. The bacon was piled in cellars underneath these chambers, the cold air from the ice overhead descending through the iron floor and keeping the temperature low during the summer months. In winter the use of ice was of course not necessary.

It was thought the limit of improvement in this direction had been reached; but about 1887 a complete revolution was caused in the arrangements existing in the factories by the introduction of elaborate machinery for the production of cold by the ammonia or carbonic acid process. The initial cost of these systems was heavy, coming to over £100,000 in the bacon curing establishments of the South of Ireland; but it has proved to be money well spent, the work now being done much better and at half the cost of the old methods. The regulation of the temperature being under such complete control makes the modern refrigerating plant admirably adapted for use in connection with the production of the mild cured bacon which the public now so generally insist on having. The hard cured bacon of former days would now be looked on as akin to Lot's wife, and it was by mere chance that the change in taste was brought about.

About twenty years ago, a struggling Limerick curer, who has long since joined the majority, being on an occasion unusually short of money, in order to turn his bacon into cash was obliged to turn it out in what was then considered a half-cured condition. Strange to say those who got this bacon liked it, and more was asked for. The other curers having heard of the matter, followed their neighbour's unintentional lead, with the result that the consumption of bacon of this character has been quadrupled. The manufacture of mild cure has now been brought to such perfection that it can be sent into tropical climates for consumption within a reasonable time.

The modern method of the bacon manufacture is very different from the crude system we have already described. A bracelet arrangement is fastened to one of the pig's hind legs. This is attached to a steam hoist, which quickly suspends the animal on a sliding bar head downwards. By a slight thrust of a knife in the throat, the jugular is pierced, the blood flows, and the animal dies quickly. If intended for the "singed" or "long side" trade, the carcass is passed into a patent furnace and comes out in a quarter of a minute thoroughly singed or "swealed." It next goes under a self-acting shower bath, after which the singed hair is scraped off by one man, who passes the carcass along the overhead rail to another who disembowels it. It is then weighed, and the weight stamped on it. An endless ratchet chain takes it further along the bar to the branding stage. Here a great saving of time and labour has been effected by the introduction of gas brands; the branding formerly had to be done by solid iron brands which were constantly reheated during operations. The carcass, after singeing, etc., is suspended in the hanging house for a period of twelve to twenty hours,



SAUSAGE ROOM,

MATTERSON & SONS, LIMERICK.



GENERAL PACKING DEPARTMENT.

to reduce it to the temperature of the air. It is then cloven in two. The head having been taken off, the sides are sent into the chill room, in which they are hung at a temperature approximating to freezing point for another twenty hours. From this the sides are sent to the curing cellars, where they are first "pumped," as it is called. This consists of injecting into the thicker portions of the meat, through a strong hollow needle, a strong pickle consisting of salt and saltpetre. The sides are then piled six layers high, salt being spread between them particularly on the flank and thinner portions which have not been injected with brine. The temperature of the chill room or curing cellars is maintained at about 42° F., and the sides are left in them for some fourteen days, when they are taken out of the salt, wiped and packed in bales containing four sides each, and shipped to London or other markets. When "smoked bacon" is required, it is usually smoked by the wholesale buyers to whom it is sold. Bacon of this class, if "smoked" on this side of the Channel, would lose considerably in appearance through rough usage in transit. The Berwick pigs, killed for the Irish trade, are treated pretty much in the same way as we have described up to a certain point; the difference being that the pig is put into a cauldron of scalding water, after which the hair is scraped off. The singeing in a furnace is not done. The sides are cut into hams, middles, shoulders or fore-ends, and are finished and smoked in the factories in which they are cured. They are not pumped or injected with pickle, the hams in particular never being treated in this way, being entirely what is termed dry salt cured. The curing of hams takes a much longer time to finish than the other portions of the pig.

The bye-products form a very important portion of the trade, nearly every portion of the carcase being turned to some useful purpose. Sausage and pudding making in the curing house form a little industry in themselves, employing a large number of women; while tinned meats, such as brawn, ham and chicken, etc., are also made, principally for export. The livers are shipped to Germany, there to be made into liver sausages, esteemed a great delicacy in that country, but not generally appreciated by the people of the United Kingdom. They are also used in the manufacture of sauces. The sweetbreads or pancreas are utilised by manufacturing chemists in the making of pepsine.

Judging from the steady decrease in the killing of pigs for the past twelve years, it would seem that Ireland is losing its hold on this, one of its most important industries; thus reducing an area which gives employment to a host of operatives, male and female, along with pigbuyers, pig drovers, etc. Were it not for the money spent by the Irish curers in improving the quality of the breed of swine in Ireland, there is no doubt that Irish bacon would have ere this lost its prestige. It is, however, to be hoped that the trade will share in the better times looked forward to under the auspices of our new Department of Agriculture, and again attain to, if not exceed, the proportions it did in 1890.

Before long the County Councils, bacon curers, and others interested in the improvement of swine, will be face to face with the necessity of providing new and totally fresh blood for the country, as it must be borne in mind that the breeding of nearly all the Large White Yorkshire pigs in the kingdom is in the hands of but a few persons, thus rendering it not improbable that "in-and-in breeding" may, within a brief period, cause serious deterioration to the breeds of pigs that are now rapidly approaching a state

of perfection in respect of their suitability for the present requirements of the bacon trade of the United Kingdom.

The following Tables may serve to illustrate some aspects of the extent and distribution of the pig industry in Ireland:—

TABLE A.—Showing the Number of PIGS in Ireland in the Year 1841; the Average for the Three Years 1847-49-50; and the Average for each Quinquennial and Decennial Period in the Fifty Years 1851-1900; together with the Number per Head of Population during the same period.

Period.	* No. of Pigs.	No. per Head of Population.
1841 (only)	1,413	.17
†1847—50	781	.10
1851—55	1,165	.19
1856—60	1,224	.20
1861—65	1,137	.20
1866—70	1,229	.22
1871—75	1,281	.24
1876—80	1,217	.23
1881—85	1,290	.26
1886—90	1,404	.29
1891—95	1,272	.28
1896—1900	1,324	.29
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1851—60	1,194	.20
1861—70	1,183	.21
1871—80	1,249	.24
1881—90	1,347	.27
1891—1900	1,298	.28

\* 000 omitted.

† Exclusive of the year 1848.

TABLE B.—Showing the Number of PIGS in Ireland, and the Number Exported during each of the Years 1880-1901 inclusive.

Year.	Number of Pigs.	Number Exported.
1880	850,269	372,890
1881	1,095,830	382,995
1882	1,430,128	502,906
1883	1,348,364	461,017
1884	1,306,550	456,678
1885	1,269,092	398,564
1886	1,263,142	421,285
1887	1,408,456	480,920
1888	1,397,825	544,972
1889	1,380,670	473,551
1890	1,570,366	603,162
1891	1,367,712	503,584
1892	1,113,472	500,951
1893	1,152,417	456,571
1894	1,389,324	584,967
1895	1,338,464	547,220
1896	1,404,586	610,589
1897	1,327,450	695,307
1898	1,253,912	588,785
1899	1,363,310	688,553
1900	1,268,521	715,202
1901	1,219,135	596,129

TABLE C.—Showing the Number of Pigs in each County per 1,000 Acres of Total Area, and also the Counties Classified in the order of the Density of their Pig Populations.

COUNTIES.	No. of Pigs per 1,000 acres.	COUNTIES.	Density of Pig Population.
Antrim .. ..	83.1	Wexford .. ..	One to 8 acres.
Armagh .. ..	85.8	Cavan .. ..	" 8 "
Carlow .. ..	101.3	Monaghan .. ..	" 9 "
Cavan .. ..	120.3	Carlow .. ..	" 10 "
Clare .. ..	55.3	Longford .. ..	" 11 "
Cork .. ..	72.1	Armagh .. ..	" 12 "
Donegal .. ..	23.1	Antrim .. ..	" 12 "
Down .. ..	68.9	Louth .. ..	" 13 "
Dublin .. ..	39.6	Waterford .. ..	" 13 "
Fermanagh .. ..	48.2	Cork .. ..	" 14 "
Galway .. ..	47.7	Queen's .. ..	" 14 "
Kerry .. ..	50.2	Roscommon .. ..	" 14 "
Kildare .. ..	28.4	Tipperary .. ..	" 14 "
Kilkenny .. ..	70.0	Kilkenny .. ..	" 14 "
King's .. ..	54.2	Down .. ..	" 14 "
Leitrim .. ..	68.7	Leitrim .. ..	" 15 "
Limerick .. ..	67.4	Limerick .. ..	" 15 "
Londonderry .. ..	67.0	Londonderry .. ..	" 15 "
Longford .. ..	88.4	Sligo .. ..	" 15 "
Louth .. ..	79.0	Mayo .. ..	" 15 "
Mayo .. ..	56.3	Clare .. ..	" 18 "
Meath .. ..	22.0	King's .. ..	" 18 "
Monaghan .. ..	106.7	Tyrone .. ..	" 19 "
Queen's .. ..	70.8	Kerry .. ..	" 19 "
Roscommon .. ..	70.5	Fermanagh .. ..	" 20 "
Sligo .. ..	65.7	Galway .. ..	" 21 "
Tipperary .. ..	70.3	Dublin .. ..	" 21 "
Tyrone .. ..	52.9	Westmeath .. ..	" 25 "
Waterford .. ..	75.6	Wicklow .. ..	" 25 "
Westmeath .. ..	39.4	Kildare .. ..	" 26 "
Wexford .. ..	128.5	Donegal .. ..	" 35 "
Wicklow .. ..	38.0	Meath .. ..	" 43 "
			" 46 "
IRELAND .. ..	62.4	IRELAND .. ..	" 16 "