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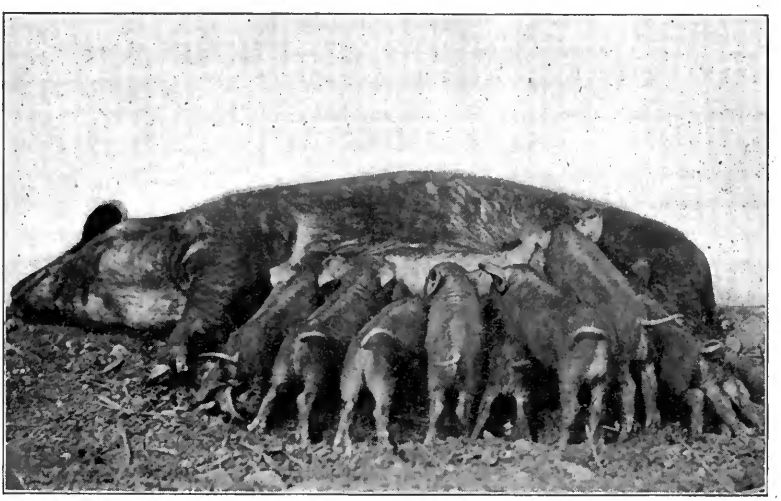
VARIATIONS IN FARROW: WITH SPECIAL REFERENCE TO THE BIRTH WEIGHT OF PIGS

BY W. J. CARMICHAEL AND JOHN B. RICE



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VARIATIONS IN FARROW: WITH SPECIAL REFERENCE TO THE BIRTH WEIGHT OF PIGS

By W. J. CARMICHAEL, Associate in Animal Husbandry[1], and JOHN B. RICE, Associate in Animal Husbandry

OBJECT AND PLAN OF WORK

The object of this research has been to study the variations in farrow among the several breeds of swine, together with some of the factors other than breed that may cause noticeable differences among the litters at the time of birth.

The breeding and farrowing records which have been kept in connection with the herd of swine under the management of the Animal Husbandry Department of the University of Illinois, during the years 1903 to 1916 inclusive, have furnished the data for this study. These records include 720 litters containing 5,840 pigs of seven distinct breeds and a number of different crosses, as well as a few litters the exact breeding of which is not definitely known. Complete information was not obtained in connection with every litter, but an attempt was made to secure: (a) the breeding of sire and dam; (b) age of dam; (c) length of gestation period; (d) number of pigs in the litter; (e) sex of the pigs; (f) order of farrowing; (g) individual weight of pigs; and (h) the number of pigs farrowed dead or immature.

For the most part the records were kept by the herdsman actively in charge at the barns. The information contained on his records was copied into the permanent records of the office, from which the data for this study were taken. Where there was any doubt as to the accuracy of the data, it was assumed that there was no information on that particular phase in connection with the litter in question. However, there has been no attempt to eliminate any litters produced by sows on any specific ration or under any particular conditions, nor has there been any elimination other than that necessitated by lack of data or obvious error in the information collected. All litters farrowed in the herd within the given years have therefore been considered in this study so far as the data would permit.

Individual pig weights were taken before the pigs were allowed to suckle, tested spring balance scales being used for this purpose, and the weights were recorded by pounds and tenths. In case it

[1]Now Secretary of the National Swine Growers' Association.

was not possible to get the birth weights in the order of farrowing, the pigs were weighed individually as soon thereafter as possible, and the fact that the order of farrowing was not obtained was noted on the record. In some cases individual weights were not obtained because a few hours' time had elapsed before there was an opportunity to make such weighings. In those cases the litter weights, even tho taken, were not used for this study.

The rations on which the sows were fed and the method of feeding and handling doubtless caused some of the variations hereinafter noted. However, the rations have not been considered since the feed records are not complete for the entire number of sows nor for a sufficient number of them to make such a study of much value. The herd sows have in general been handled similar to those in many herds of pure-bred swine.

A very systematic study of the field is difficult since so many factors may influence the birth weight of pigs and cause other variations in connection with farrowing. Influences may so completely overlap one another that in some cases it is almost impossible to account for the variations which occur. However, the possible influences considered in this study, and which will be taken up in the order named, are as follows: (1) length of gestation period; (2) size of litter; (3) age of dam; (4) breed; (5) time of year; (6) order of farrowing; (7) succeeding litters from the same sow.

LENGTH OF GESTATION PERIOD

The gestation period for sows is generally considered to be from 112 to 114 days, with a popular belief that the older sows will carry their litters from one to three days longer than will the gilts. Table 1 shows the relation of the age of the dam to the length of gestation period for 549 litters.

Judging from these data, the general belief that older sows have a gestation period one to three days longer than younger sows seems to have no very good basis; in fact, the one-year-old sows carried their pigs slightly longer than the average for the 549 litters from sows of all ages, which was 114.58 days from the time of service. However, it is perhaps worth noting that the average age of all sows farrowing with gestation periods of 114 days or less was 2.24 years, while that of the sows which carried their litters 115 days or longer was 2.31 years; which indicates that there may be a slight variation due to age. Also, many of the sows four years old or above had noticeably longer gestation periods than the average, but there were so few litters under observation among the very old sows that these differences are of doubtful significance.

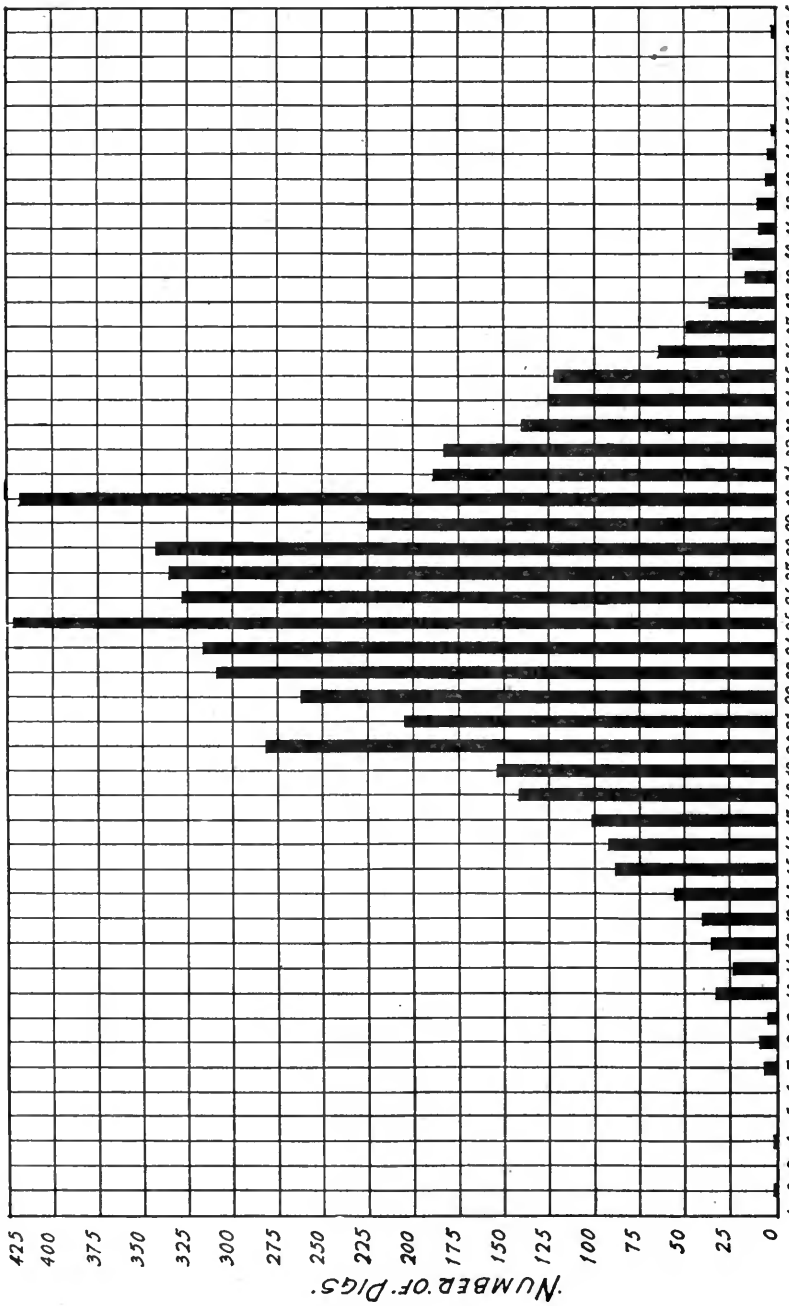
A variation of twenty-six days in the length of gestation is somewhat longer than is expected. However, the fact that 93.6 percent

of the litters were farrowed between the 111th and 119th days after being bred indicates that the extreme cases shown in the table are not duplicated with very great frequency. A further study of the same distribution indicates that the date of farrow can be predicted with but reasonable accuracy since 73.8 percent of the litters were carried by the sows for periods varying from 113 to 117 days. Less than 20 percent of the litters were farrowed on the 114th day, which was the day of greatest frequency of farrow.

Table 2 shows the relation of the size of litter to the length of gestation for the same 549 litters which are shown in Table 1. From this it seems that there is a tendency for some of the litters which are carried longer than the average to be smaller than would be found in a chance distribution. This is perhaps more clearly brought out in Table 3, which shows that the average number of pigs (7.6) farrowed in gestation periods longer than the average was less than the grand average number of pigs (8.00) per litter in 466 litters.

Table 4 shows a very even distribution of pigs of the various birth weights according to the length of the gestation period. The heaviest pig in the whole population of 4,115 pigs studied (4.9 pounds) was farrowed in a litter of the shortest gestation period (98 days), but this pig seemed to stand out alone, there being none other nearly so heavy. The lightest pig which was farrowed (0.2 pound) came in one of the litters farrowed on the 115th day, or near the average for the length of gestation. Aside from the two pigs to which reference has just been made, and perhaps four or five others, none of which are outside of a distribution such as one would expect to find, the 4,115 pigs on which the individual weight as well as the length of gestation period was secured are very evenly centered about the 114- to 115-day gestation period and the 2.5 pounds weight per pig.

The distribution of 5,188 pigs as to individual weight, which is the number regarding which individual weights were secured, is given in the graph shown on page 70. This shows a variation from 0.2 pound to 4.9 pounds, with a grand average or mean weight of 2.55 pounds and with 66.9 percent of the pigs weighing between two and three pounds. It will be noted that the greatest number of pigs usually occurs at the pound and half-pound frequencies. This is doubtless due to the fact that the scales were graduated by pounds and tenths and the pounds and half-pounds were more clearly marked than the other divisions, thus making it more natural that the nearest pound or half-pound should be read. It is doubtful, however, whether this error would noticeably alter the true average weight of the whole population, the inequalities probably balancing one another.



DISTRIBUTION OF 5,188 PIGS AS TO INDIVIDUAL BIRTH WEIGHT

A study of the litters as regards the relation of breed to the length of gestation period (Table 5) reveals the fact that two breeds, Berkshire and Poland China, stand out alone as having longer gestation periods than the average for the 549 litters. The Poland Chinas carried their pigs an inappreciable fraction of a day longer than the grand average, but the Berkshires ran over more than three-fourths of a day. The fact that the Berkshires seem to have longer normal gestation periods than any other breed involved in this study, together with the fact that there were more Berkshire litters studied than litters of all other breeds combined, explains in part the reason for the grand average gestation period under consideration being somewhat longer in these 549 litters than is generally considered to be normal. Outside of the Hampshires, of which there were but two litters, the Chester Whites had the shortest average gestation period. Following these in order of increasing gestation period are the Duroc-Jerseys, Large Yorkshires, Tamworths, Poland Chinas, and Berkshires.

A study of the sex of the pigs in relation to the length of gestation period (Table 6) shows no apparent tendency for either sex to predominate more than normal. In a majority of cases there were more males than females. Of the 4,363 pigs on which the sex as well as the gestation period was recorded, 2,074 were females and 2,289 males, or 47.5 percent females and 52.5 percent males.

Table 7, showing the sex of the first and last born according to length of gestation period, indicates that there is possibly a tendency for males to predominate among the first farrowed in any given litter, and for the sex to be rather evenly distributed in the case of the last farrowed. However, from this table it is seen that in litters farrowed on the 114th day, females predominated among both the first and last farrowed, notwithstanding the fact that there were more males than females among the total number farrowed. The study of the sex of the first and last farrowed involves so few individuals that no definite conclusions can be drawn.

SIZE OF LITTER

The number of pigs per litter was obtained in connection with each of 720 litters containing a total of 5,840 pigs. Table 8 shows the sex of these pigs as they varied within litters of different sizes. Altho there were 183 pigs the sex of which was not obtained, a sex distribution of the remaining 5,657 is interesting and seems to indicate that there is a decided tendency for males to predominate, since of this number 2,933 were males and only 2,724 were females, or 51.9 percent males and 48.1 percent females. There seemed to be no noticeable correlation between the size of the litter and sex, a

predominance of males being found in a majority of different-sized litters rather than merely a tendency for this sex to predominate in those of certain sizes, either small or large.

Table 9, showing the number of pigs farrowed dead or immature in the litters of different sizes, seems to indicate that there is a tendency for the larger litters to contain a larger proportion of dead or immature pigs than are found in the smaller litters, since in litters of eight pigs or less the percentage of dead or immature at birth was 7.7, whereas in the litters of more than eight pigs, 10.5 percent is the corresponding figure. Among those farrowed dead there was a greater proportion of males than females—56.0 percent males and 44.0 percent females, which is a significant difference.

A study of the distribution of 5,774 pigs according to the size of the litter as well as the age of dam, as given in Table 10, indicates that sows under two years of age produce smaller litters than do sows two to four years of age. The line of averages at the bottom of the table shows a gradual increase in the size of litter as the sows grew older up to the time that they were three years old. After the sows had attained the age of three years they had a tendency to produce fewer pigs in each succeeding litter, altho the few sows which were kept until they were over five years of age seemed to maintain their fecundity better than the average even at younger ages. There was, however, at least one force operating in the herd which would tend to maintain or possibly increase the size of litter; namely, the fact that no sows were retained in the breeding herd unless they proved to be producers either of large litters or of litters containing pigs of special worth. As a result of this selection some of the gilts which produced small litters were discarded and did not have an opportunity to exert an influence as older sows. On the other hand, this sort of selection is just what would probably be made in any herd, and the results here are therefore somewhat comparable to those which might generally be found.

The distribution of 2,483 sow pigs showing the relation of the weights of the pigs to the size of the litter in which they were farrowed (Table 11), as well as a similar distribution for the 2,705 boar pigs on which the individual weights at farrowing time were secured (Table 12), shows a marked regularity in centering around the averages. The succeeding table (Table 13) shows the same data in a form which may be more easily studied. In these comparisons the average weight of the 2,483 sow pigs is shown as 2.51 pounds and that of the 2,705 boar pigs as 2.59 pounds, the males being heavier by 0.08 pound. A study of the average weight of all pigs farrowed in litters of different sizes shows rather clearly that in litters smaller than the average (8.0 pigs) the average weight per pig (2.67 pounds) is likely to be greater than the grand average

weight for all litters (2.55 pounds for the 5,188 pigs on which the individual weights were obtained). Those farrowed in litters of more than eight pigs weighed an average of 2.47 pounds each. In every case where the litter contained more pigs than the average, the average weight of all pigs in litters of that size was noticeably less than the grand average. Making a similar comparison by sex, we find that likewise the pigs of either sex in litters larger than the average have a tendency to be lighter than the average for pigs of that sex, and in litters smaller than the average the tendency is for the pigs to be heavier than the average for that sex.

AGE OF DAM

Sows which are two years old or older are generally considered to be producers of larger litters and stronger pigs than are gilts or sows one and one-half years old.

Table 14, showing the relation of the age of the dam to the birth weight of the pigs, indicates rather clearly that the young sows farrow noticeably lighter pigs than do the older mothers. The average weight of pigs from sows under two years of age was 2.44 pounds, as compared with an average weight of 2.61 pounds for the pigs from sows two years old and older. There seemed to be a fairly general increase in the weight of the pigs as the sows grew older, even until they were eight years old, altho there were so few sows over five years that the weight of the pigs from sows past maturity may not be representative. On the whole, however, the belief that the young sows produce smaller pigs is substantiated by these data. Table 10, given in connection with the discussion on the size of litters, likewise substantiates the popular belief that up to a certain age, which is about three years, there is an increase in the size of litters as the sow grows older.

One frequently hears statements to the effect that even tho the older sows farrow larger litters than the gilts, they do not raise as large a percentage of the pigs farrowed because more of them are farrowed weak or dead. Table 15, in which the number of dead or immature pigs is given in litters from sows of different ages, shows that the old sows farrowed a greater percentage of dead pigs than did young dams. Eight and one-tenth percent of the pigs farrowed by sows under three years of age were dead or immature, whereas 12.3 percent (an increase of 4.2 percent) of those from dams three years or more in age were in similar condition at birth. There was, however, marked irregularity among the proportionate number of dead or immature at birth among the litters from sows three years old and over. There were also few litters of these classes.

The sex of pigs in litters from sows of different ages (Table 16) is about as evenly distributed as it was in litters of different sizes

(Table 8) or in litters of different lengths of gestation (Table 6). It shows a uniform tendency for males to be present in slightly greater numbers than are the females.

BREED

Any study which can be made of the different breeds from the data available in this research cannot be conclusive because for accurate comparisons there have been too few litters from any one breed, with the possible exception of the Berkshires. At best, breed comparisons of any kind are of doubtful value and are dangerous indulgences. However, these data were collected and are given here as a possible supplement to any other which may be available at present or obtained at any future time. Table 17 shows the total number of litters of each breed in the 720 litters under observation. From this table it is evident that more Berkshire litters were farrowed in the herd during the years that these data were being collected (1903-1916) than all other breeds combined.

The compilation showing by breeds the average age of sows, the average length of gestation period, the number of pigs per litter, and the average weight per pig at farrowing, as presented in Table 18, gives an opportunity for comparison of breeds, so far as the available material herein presented will permit. (All litters of which the breeding was not definitely known or concerning which there was any doubt were omitted.)

The average age of the sows at the time the litters were farrowed did not vary widely, there being some sows of each breed that were kept until they were four or five years old; consequently any variation which may be found cannot logically be explained by variations in age.

In the discussion in connection with Table 5 the variation in length of gestation was considered, and therefore will not be repeated here.

The largest variation which was found among the litters of the different breeds was in the size of litters, altho there was some noticeable variation in the weight of the pigs. Arranging the breeds according to the descending number of pigs per litter, as well as the descending weight per pig, we have the following:

Pigs per litter		*Weight per pig*	
Large Yorkshire	11.58	Berkshire	2.61
Chester White	9.59	Large Yorkshire	2.60
Tamworth	9.43	Chester White	2.59
Duroc-Jersey	8.74	Tamworth	2.58
Crossbred	8.00	Poland China	2.50
Berkshire	7.42	Hampshire	2.50
Hampshire	7.00	Crossbred	2.46
Poland China	6.57	Duroc-Jersey	2.25
Average	8.00	Average	2.53

In this at first there seems to be some evidence, which is contradictory to that found in the study of the size of the litters and its effect on the weight of the pigs, for the Large Yorkshire litters, altho they contained more pigs as an average than the average for litters, were composed of pigs which were heavier than the average. A similar statement is also true of the Chester White and Tamworth pigs. Contrary to this, we find that the Hampshire and Poland China litters, with fewer pigs than the average, had lighter pigs than the mean of the whole population. Further, it is to be noted that the Duroc-Jersey pigs weighed over one-fourth pound (0.28 pound) less than the average for all pigs. Such findings are a concrete illustration of the differences due to breeding.

The foregoing tabulation shows the results of but 457 litters, the litters containing a total of 3,658 pigs, an average of 8.00 individuals per litter. The sows averaged 2.35 years in age.

TIME OF YEAR

The time of the year at which pigs are farrowed does not seem to exert any very noticeable influence, with any regularity, upon the length of gestation period, size of litter, or weight of pigs, altho possibly there is a tendency for larger litters and heavier pigs to occur in the months of normal farrowing seasons. This, of course, might be expected since sows farrowing in other months are, in many cases, ones which were re-bred, having been originally bred for the normal farrowing season. Such sows are doubtless somewhat abnormal. There are no positive indications that the sows will carry their litters longer during summer months than in winter, or vice versa. Summarizing here the data presented in Table 19, and arranging it by months in descending order, we have:

Age of sows	*Length of gestation period*	*Pigs per litter*	*Weight per pig*
July	September	October	July
April	May	August	September
March	February	April	August
September	March	March	October
October	June	February	February
August	October	September	April
June	April	May	March
May	July	June	May
February	November	July	November
November	August	November	June

ORDER OF FARROWING

Table 20, showing the relation of order of farrowing to sex and weight of pigs in the 261 litters on which the order of farrowing as well as the birthweight of all the pigs in the litters was ob-

tained, indicates rather strongly that among the first farrowed, males tend to predominate more than normal, for there were 155 males to 106 females among the first born. The sex of the last farrowed was in about the normal ratio.

The same table also indicates that there is a slight tendency for the first farrowed (average weight 2.60 pounds) to be heavier than the last farrowed (average weight 2.43 pounds). This is perhaps in part due to the predisposition of the males, which predominated here, to be heavier than the females. In the case of the first farrowed here, the males averaged 2.67 pounds and the females only 2.50 pounds. There was a somewhat similar tendency for the males to predominate and to be somewhat heavier than the females, among the last farrowed, but the tendency was not so marked as among the first farrowed.

SUCCEEDING LITTERS FROM THE SAME SOW

In Table 21 is shown the average age, length of gestation period, number of pigs per litter, and weight of litter and pigs in succeeding litters from the same sow.

The gestation period of the first litter is rather consistently longer than for those following it, as was shown in Table 1. There is an increase in the number of pigs per litter in most cases until the fourth litter, at which time the sows are three to three and one-half years old. The total weight of the litter increases with each succeeding litter up to the fourth owing to the increase in the number of pigs per litter as well as in the weight of the individual pigs.

The age at which a sow should farrow her first litter, as well as the optimum frequency of succeeding litters, is a much debated subject. No positive conclusions can be drawn from Table 22, which gives the succeeding litters from the same sows at different ages, for there are doubtless other factors than those in the table which should be taken into consideration in determining the age at which a sow should farrow. One would infer from the first part of the table that sows farrowed their first litters at one and one-half years of age had shorter gestation periods and farrowed more and heavier pigs than sows that farrowed their first litters at one year of age. Upon studying other parts of the table, it is readily seen that conflicting conclusions can be drawn. The sows that farrowed their first litters at one and one-half years of age rather consistently farrowed heavier pigs in the first litter than those which farrowed at one year. It is evident that other factors than the number of pigs and their size determine the age at which sows should farrow the first and succeeding litters for maximum or economical production.

SUMMARY AND CONCLUSIONS

The data presented in this study are not of sufficient extent to warrant the drawing of many final conclusions. A few seem to be justified, however, and are given here in the summary, altho it must be borne in mind that even they are based on limited data.

LENGTH OF GESTATION PERIOD.—The records obtained from 549 litters showed a rather wide range, 98 to 124 days, in the length of gestation period, with an average of 114.58 days. However, 93.6 percent of the litters were farrowed between the 111th and 119th days, and 73.8 percent between the 113th and 117th days.

Altho there may be a slight variation in length of gestation period due to age, the general belief that older sows have a gestation period one to three days longer than younger sows seems to have no very good basis.

There was little, if any, correlation between the length of gestation period and the birth weight of pigs, but there was a slight tendency for some of the litters which were carried longer than the average to be smaller than those which were farrowed earlier than the average.

A study of the sex of the pigs in relation to the length of gestation period shows no apparent tendency for either sex to predominate more than normal.

SIZE OF LITTER.—In this study the average size of litter was 8.1 pigs. The average weight of a litter is about 20 pounds. This weight varies almost in direct proportion to the number of pigs in the litter. In litters with fewer pigs than the average, the average weight of pigs is greater than in litters with more pigs than the average. In this study, the average weight of pigs in litters with fewer pigs than the average was 2.67 pounds, and in litters with more pigs than the average it was 2.47 pounds, while the grand average of all pigs was 2.55 pounds.

There is no noticeable correlation between size of litter and sex. It is interesting to note, however, that among a total of 5,657 pigs, the sex of which was determined, 51.9 percent were males and 48.1 percent females. The predominance of males was found in a majority of different-sized litters rather than in those of certain sizes, either large or small.

There is a tendency for the larger litters to contain a larger proportion of dead or immature pigs than are found in the smaller litters. The litters larger than the average contained 10.5 percent dead pigs, and the litters smaller than the average, 7.7 percent. The proportion of males (56.0 percent) among those farrowed dead was greater than the normal predominance of males over females. The

pigs farrowed dead or immature were decidedly lighter (2.17 pounds) than the total average weight per pig (2.55 pounds).

AGE OF DAM.—On the whole, the belief that young sows produce smaller pigs than do older sows is substantiated by these data. Likewise the data substantiate the popular belief that up to a certain age, which is about three years, there is an increase in the size of litter as the sows grow older. In this study the average number of pigs from sows one and one and one-half years old was 7.5, and from sows two years old or older 8.6, with average weights of 2.44 pounds and 2.61 pounds respectively.

The older sows farrowed a greater percentage of dead or immature pigs than did the younger sows. Out of a total of 5,778 pigs, 8.1 percent of those farrowed by sows one to two and one-half years old were dead or immature, while 12.3 percent of those farrowed by sows three years old or over were farrowed dead or immature.

A study of the sex of pigs from sows of different ages showed a uniform tendency for males to be present in slightly greater numbers without relation to the age of the sow.

BREED.—There are rather wide differences among different breeds as to the length of gestation, size of litter, and birth weight of pigs. Berkshires had appreciably longer gestation periods (115.4 days) than did any of the other breeds.

TIME OF YEAR.—It is very doubtful whether there are any variations in farrow which can be attributed to the season at which the pigs are farrowed.

ORDER OF FARROWING.—Of the first farrowed, the proportion of males (59.4 percent) was greater than the normal ratio of males to females. The sex of the last farrowed (51.0 percent males) was in about the normal ratio. In comparing the averages of the same sex, as well as the averages of both sexes, it was found that the average weight of the first farrowed was somewhat heavier than the average of the last farrowed.

SUCCEEDING LITTERS FROM THE SAME SOW.—There was an increase in the number of pigs per litter and in the weight of individual pigs in most cases until the fourth litter, at which time the sows were three to three and one-half years old. The data compiled in an attempt to throw light upon the much debated subject of the age at which a sow should farrow her first litter, as well as the optimum frequency of succeeding litters, is decidedly conflicting. It would seem that other factors than the number of pigs and their size should determine the age at which sows should farrow the first and succeeding litters for maximum or economical production.

INDEX TO TABLES

TABLE 1.—RELATION OF AGE OF DAM TO LENGTH OF GESTATION PERIOD

Age of dam, *years*[1]	Length of gestation period, *days*																					Total number of sows of each age	Average length of gestation for sows of this age, *days*
	98	102	103	106	107	108	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124		
1.....	–	–	–	1	1	1	2	3	14	11	20	21	25	12	5	2	1	–	–	–	2	121	114.71
1½.....	–	–	1	1	–	1	2	3	7	8	25	16	16	14	3	1	–	–	–	–	–	98	114.44
2.....	–	1	–	1	–	–	1	3	12	18	21	22	11	7	5	3	1	–	–	1	–	107	114.37
2½.....	1	–	–	–	–	–	1	3	1	8	11	16	9	1	2	2	1	1	–	–	–	57	114.51
3.....	–	–	–	–	1	–	2	1	4	12	10	4	10	4	3	–	–	–	–	1	–	52	114.37
3½.....	1	–	–	–	1	–	1	1	–	3	9	5	4	1	2	–	–	–	–	–	–	28	113.68
4.....	–	–	–	–	–	–	2	2	3	6	–	4	8	8	3	–	1	–	–	–	–	37	114.87
4½.....	–	–	–	–	–	–	–	–	–	1	3	2	4	4	–	1	–	–	–	–	–	15	115.73
5.....	–	–	–	–	–	–	–	–	3	–	2	1	2	1	1	–	–	1	–	–	–	11	115.18
5½.....	–	–	–	–	–	–	–	–	–	1	–	–	1	–	–	–	–	–	–	–	–	2	114.50
6.....	–	–	–	–	–	–	–	–	1	–	2	–	2	–	–	–	–	–	–	–	–	5	114.40
6½.....	–	–	–	–	–	–	1	–	–	–	–	–	1	2	–	–	–	–	–	–	–	4	115.00
7.....	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	1	115.00
Unknown	–	–	–	–	–	–	–	–	1	–	1	–	3	1	4	–	–	–	–	1	–	11	116.91
Total....	2	1	1	3	3	2	12	16	46	68	104	92	96	55	28	9	4	2	–	3	2	549	114.58
Average age (sows of known ages)	3.00	2.00	1.50	1.50	2.50	1.25	2.79	2.22	2.13	2.35	2.17	2.13	2.38	2.46	2.39	2.11	2.38	3.75		2.50	1.00	2.28	

Average age of sows farrowing on or before the 114th day, 2.24 years (256 litters)

Average age of sows farrowing after the 114th day, 2.31 years (282 litters)

[1]Sows are grouped by ages according to the nearest year or half-year. Within the group of 1-year-old sows there are some under a year, and others 15 months old. Similarly, in the group of 1½-year-old sows, there are included some just past 15 months, and still others 21 months old, etc. This classification by age is used thruout the bulletin.

TABLE 2.—RELATION OF SIZE OF LITTER TO LENGTH OF GESTATION PERIOD

Number of pigs in litter	Length of gestation period, *days*																					Total number of litters
	98	102	103	106	107	108	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	
1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1	.....	.....	.....	.....	.....	.....	.....	1	.....	3
2	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	2	1	.....	1	1	1	.....	1	.....	.....	.....	9
3	.....	.....	.....	.....	.....	.....	1	.....	1	1	3	5	3	1	1	1	.....	1	.....	.....	.....	18
4	.....	.....	.....	.....	1	.....	.....	1	3	4	5	8	5	6	1	.....	.....	.....	.....	.....	.....	34
5	.....	.....	.....	.....	1	.....	2	2	5	6	4	5	10	7	5	.....	1	.....	.....	.....	1	49
6	.....	.....	.....	.....	.....	1	1	1	2	.....	6	18	15	4	3	1	.....	.....	.....	.....	.....	52
7	1	.....	.....	1	1	.....	1	1	7	6	13	9	11	6	6	.....	.....	.....	.....	1	.....	64
8	.....	.....	.....	1	.....	.....	2	1	4	13	19	11	12	6	4	1	2	.....	.....	.....	.....	76
9	1	1	.....	.....	.....	1	2	1	.....	7	9	9	11	8	4	2	.....	.....	.....	.....	1	57
10	.....	.....	1	.....	.....	.....	2	3	7	6	19	8	14	8	.....	1	.....	.....	.....	1	.....	70
11	.....	.....	.....	.....	.....	.....	.....	3	6	9	8	5	6	4	2	.....	1	.....	.....	.....	.....	44
12	.....	.....	.....	1	.....	.....	.....	2	4	8	6	5	5	1	1	1	.....	.....	.....	.....	.....	34
13	.....	.....	.....	.....	.....	.....	.....	1	4	4	3	2	2	1	.....	1	.....	.....	.....	.....	.....	18
14	.....	.....	.....	.....	.....	.....	.....	.....	.....	4	4	2	1	1	.....	.....	.....	.....	.....	.....	.....	12
15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1	1	1	.....	.....	.....	.....	.....	.....	.....	4
16	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	3
18	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Total	2	1	1	3	3	2	12	16	46	68	104	92	96	55	28	9	4	2	0	3	2	549

TABLE 3.—RELATION OF LENGTH OF GESTATION PERIOD TO: (a) SIZE OF LITTER, (b) NUMBER OF PIGS FARROWED DEAD OR IMMATURE, (c) WEIGHT OF LITTER, AND (d) WEIGHT OF PIGS

Length of gestation period, *days*	Number of litters	Total number of pigs	Average number of pigs per litter	Pigs farrowed dead or immature		Average weight per litter, *lbs.*	Average weight per pig, *lbs.*
				Number	Percent		
98	2	16	8.0	..	....	26.1	3.26
102	1	9	9.0	..	....	20.4	2.27
103	1	10	10.0	1	10.0	27.9	2.79
106	3	27	9.0	1	3.7	20.6	2.29
107	3	16	5.3	..	....	13.8	2.58
108	2	15	7.5	3	20.0	18.8	2.51
110	10	71	7.1	13	18.3	17.4	2.45
111	13	112	8.6	7	6.3	21.4	2.48
112	39	329	8.4	25	7.6	21.2	2.51
113	60	544	9.1	37	6.8	22.8	2.51
114	88	725	8.2	57	7.9	20.3	2.46
115	80	611	7.6	45	7.4	19.7	2.59
116	84	648	7.7	45	6.9	19.8	2.57
117	42	338	8.0	23	6.8	20.5	2.55
118	23	157	6.8	19	12.1	18.5	2.71
119	8	63	7.9	4	6.3	21.1	2.68
120	3	24	8.0	1	4.2	18.2	2.28
121	2	5	2.5	..	....	7.9	3.14
123	1	10	10.0	..	....	22.4	2.24
124	1	9	9.0	..	....	20.2	2.24
Total or average..	466	3739	8.0	281	7.5	20.3	2.54
Farrowed on or before the 114th day	222	1874	8.4	144	7.7	21.0	2.49
Farrowed after the 114th day	244	1865	7.6	137	7.3	19.7	2.58

TABLE 4.—RELATION OF LENGTH OF GESTATION PERIOD TO BIRTH WEIGHTS OF PIGS

Weight of pigs, *lbs.*	Length of gestation period, *days*																					Total
	98	102	103	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	123	124	
.2	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	1
.4	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	1
.7	–	–	–	–	–	–	–	–	–	–	–	3	–	1	–	–	–	–	–	–	–	4
.8	–	–	–	1	–	–	–	–	–	–	3	1	–	–	2	–	–	–	–	–	–	7
.9	–	–	–	–	–	–	–	–	–	1	–	1	1	1	–	–	–	–	–	–	–	4
1.0	–	–	–	1	–	–	–	1	2	4	3	1	8	3	2	–	2	–	–	–	–	27
1.1	–	–	–	–	–	–	–	1	–	3	2	7	3	2	–	2	–	–	–	–	–	20
1.2	–	–	–	–	–	–	–	2	–	2	6	7	8	4	1	1	–	–	–	–	–	31
1.3	–	–	–	–	–	–	–	–	1	1	4	6	5	9	4	–	–	1	–	–	–	31
1.4	–	–	–	–	–	–	–	–	–	2	4	10	7	14	5	–	–	–	–	1	–	43
1.5	–	–	–	1	1	–	–	2	1	5	10	17	11	12	5	6	1	–	–	–	1	73
1.6	–	–	–	1	–	–	–	–	2	8	9	20	15	13	6	–	2	–	–	–	–	76
1.7	–	–	–	1	–	–	–	–	3	5	11	19	14	10	9	4	2	2	–	–	–	80
1.8	–	–	1	2	–	–	–	1	4	10	10	34	18	18	12	4	1	3	–	–	–	118
1.9	–	1	–	2	1	–	–	2	3	9	14	37	17	19	8	5	–	1	–	1	–	120
2.0	–	1	–	3	1	–	2	2	9	18	37	49	30	33	16	10	7	2	–	1	–	221
2.1	–	–	–	1	2	1	1	2	2	16	23	39	25	33	14	6	1	5	–	1	1	173
2.2	2	–	–	1	1	–	–	6	8	18	28	57	30	30	18	7	2	1	–	2	2	213
2.3	1	4	–	1	–	–	1	6	7	25	33	52	33	48	21	6	4	–	–	–	2	244
2.4	–	2	1	–	–	–	2	3	11	17	37	41	44	40	25	10	4	–	–	1	2	240
2.5	–	1	–	2	1	–	4	7	7	24	46	68	63	55	31	11	6	1	–	1	–	328
2.6	–	–	1	1	–	1	1	6	15	25	41	42	36	44	29	10	3	1	–	–	–	256
2.7	–	–	1	3	–	–	1	6	8	30	37	40	44	48	30	10	2	4	1	1	–	266
2.8	–	–	1	–	–	1	–	3	11	28	52	47	47	44	31	15	7	3	–	–	1	291
2.9	2	–	2	1	–	–	–	1	6	19	25	33	36	23	17	6	3	1	1	–	–	176
3.0	1	–	2	1	–	2	2	5	6	21	55	56	61	72	35	14	9	–	–	1	–	343
3.1	1	–	–	–	–	–	1	3	3	11	26	32	20	28	12	8	5	–	–	–	–	150
3.2	–	–	–	–	–	2	–	2	2	14	20	25	27	18	13	6	5	1	1	–	–	136
3.3	3	–	–	2	–	1	–	6	3	8	16	16	21	18	8	7	1	1	–	–	–	111
3.4	3	–	–	1	–	–	–	–	–	8	7	23	19	19	6	6	4	–	1	–	–	97
3.5	–	–	–	–	–	–	–	2	2	4	8	21	19	20	10	7	1	–	1	1	–	96
3.6	–	–	–	1	–	–	–	1	2	4	5	8	6	9	2	5	–	–	–	–	–	43
3.7	–	–	–	–	–	–	–	2	–	–	–	3	8	10	4	–	–	–	–	–	–	27
3.8	–	–	1	–	–	1	–	–	–	2	2	7	2	5	5	2	–	–	–	–	–	27
3.9	–	–	–	–	–	–	–	–	–	–	1	3	2	2	1	–	–	–	–	–	–	9
4.0	–	–	–	–	–	–	–	–	1	–	–	3	3	3	1	4	–	–	–	–	–	15
4.1	–	–	–	–	–	–	–	–	–	–	–	1	–	1	1	2	1	–	–	–	–	6
4.2	1	–	–	–	–	–	–	–	–	–	–	1	–	1	–	1	–	–	–	–	–	4
4.3	–	–	–	–	–	–	–	–	–	–	1	2	–	1	–	–	–	–	–	–	–	4
4.4	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	2
4.9	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
Total	16	9	10	27	7	9	15	71	118	340	577	835	677	716	385	178	71	29	5	11	9	4115

TABLE 5.—RELATION OF BREED TO LENGTH OF GESTATION PERIOD

Breed	Length of gestation period, *days*																				Total number of litters	Average length of gestation period *days*
	98	102	103	106	107	108	110	111	112	113	114	115	116	117	118	119	120	121	123	124		
Berkshire	1	.....	1	1	1	1	4	2	12	18	47	51	69	44	24	7	4	2	2	2	293	115.4
Chester White	.....	.....	.....	1	.....	.....	2	3	6	6	5	3	3	.....	.....	1	.....	.....	.....	.....	30	113.0
Duroc-Jersey	.....	1	.....	1	.....	.....	3	5	12	13	15	3	5	3	1	.....	.....	.....	.....	.....	62	113.1
Hampshire	.....	.....	.....	.....	.....	.....	.....	.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	112.5
Poland China	.....	.....	.....	.....	1	.....	.....	.....	2	7	11	12	11	2	2	.....	.....	.....	.....	.....	48	114.6
Tamworth	.....	.....	.....	.....	.....	.....	1	2	4	8	9	6	.....	1	.....	.....	.....	.....	1	.....	32	113.8
Large Yorkshire	.....	.....	.....	.....	1	1	2	2	5	3	5	7	2	2	.....	.....	.....	.....	.....	.....	30	113.2
Crossbred	1	.....	.....	.....	.....	.....	.....	2	4	11	11	9	4	3	.....	1	.....	.....	.....	.....	46	113.8
Unknown	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1	1	2	.....	1	.....	.....	.....	.....	.....	6	115.3
Total	2	1	1	3	3	2	12	16	46	68	104	92	96	55	28	9	4	2	3	2	549	114.6

TABLE 6.—RELATION OF LENGTH OF GESTATION PERIOD TO SEX OF PIGS

Length of gestation period, *days*	Sex of pigs		Number of pigs in these litters, sex of which was not obtained	Total number of pigs studied
	Female	Male		
98	10	6	..	16
102	4	5	..	9
103	3	7	..	10
106	10	17	..	27
107	6	10	..	16
108	9	6	..	15
110	34	46	16	96
111	59	81	4	156
112	177	210	4	391
113	314	298	9	621
114	427	446	17	890
115	339	370	6	715
116	334	404	24	762
117	202	211	15	428
118	81	106	9	196
119	36	35	1	72
120	15	14	3	32
121	3	2	..	5
123	3	9	6	18
124	8	6	..	14
Total	2074	2289	114	4477
	4363			
Percent	47.5	52.5	....	....
Number farrowed on or before the 114th day	1053	1132	50	2235
Number farrowed after the 114th day	1021	1157	64	2242

TABLE 7.—RELATION OF LENGTH OF GESTATION PERIOD TO SEX OF PIGS FARROWED FIRST AND LAST IN THE LITTER[1]

Length of gestation period, *days*	FIRST FARROWED		LAST FARROWED	
	Sows	Boars	Sows	Boars
106	1	..	1	..
107	..	1	1	..
108	..	1	1	..
109	..	..	..	..
110	..	5	1	4
111	4	4	3	4
112	12	8	9	10
113	13	16	17	10
114	29	19	25	15
115	15	31	18	24
116	19	30	22	19
117	12	11	4	17
118	5	9	4	10
119	2	1	1	1
120	..	2	2	..
121	..	1	1	..
123	..	2	..	1
124	..	1	..	1
Total	112	142	110	116
Percent of each sex	44.1	55.9	48.7	51.3
Number farrowed on or before the 114th day	59	54	58	43
Number farrowed after the 114th day	53	88	52	73

[1] In some cases the sex of the last farrowed was not secured, owing either to absence of attendant or to the fact that it was not possible to determine the sex.

TABLE 8.—RELATION OF SIZE OF LITTER TO SEX OF PIGS

Number of pigs per litter	Number of pigs of each sex		Number of pigs, sex of which was not obtained	Total number studied
	Females	Males		
1	2	4	..	6
2	15	15	..	30
3	30	27	..	57
4	97	82	1	180
5	137	157	11	305
6	195	213	12	420
7	255	347	21	623
8	374	397	13	784
9	331	329	24	684
10	449	442	19	910
11	292	326	20	638
12	237	226	17	480
13	149	179	10	338
14	101	105	18	224
15	29	45	1	75
16	11	21	16	48
18	8	10	..	18
20	12	8	..	20
Total	2724	2933	183	5840
Percent of each sex	48.1	51.9	....	....
Number in litters of 8 pigs or less	1105	1242	....	2405
Number in litters of more than 8 pigs	1619	1691	....	3435

TABLE 9.—RELATION OF SIZE OF LITTER TO NUMBER OF PIGS FARROWED DEAD OR IMMATURE

Number of pigs per litter	Pigs farrowed dead or immature				Number of litters	Total number of pigs
	Females	Males	Total[1]	Percent		
1	1	..	1	16.6	6	6
2	..	4	4	13.3	15	30
3	1	3	4	7.0	19	57
4	9	7	17	9.4	45	180
5	8	14	26	8.5	61	305
6	7	8	25	6.0	70	420
7	19	26	66	10.6	89	623
8	13	18	42	5.4	98	784
9	13	25	63	9.2	76	684
10	18	30	60	6.6	91	910
11	19	30	69	10.8	58	638
12	20	23	53	11.0	40	480
13	21	24	55	16.3	26	338
14	20	6	44	19.6	16	224
15	..	2	3	4.0	5	75
16	4	1	5	10.4	3	48
18	1	2	3	16.7	1	18
20	3	2	5	25.0	1	20
Total	177	225	545[1]	9.3	720	5840
Percent	44	56	...	....	...	....
Number in litters of 8 pigs or less	58	80	185	7.7	403	2397
Number in litters of more than 8 pigs	119	145	360	10.5	317	3435

[1]The sex of some of the dead pigs and of some of those that were immature was not obtained.

NOTE.—9.3 percent of the pigs, or 1.3 pigs per litter, were farrowed dead or immature. The average weight of the pigs farrowed dead or immature in 720 litters was 2.17 pounds.

TABLE 10.—RELATION OF SIZE OF LITTER TO AGE OF DAM

Number of pigs per litter	Age of dam, *years*														Total number of litters
	1	1½	2	2½	3	3½	4	4½	5	5½	6	6½	7	8	
1	3	....	2	....	....	....	....	....	....	....	....	....	....	....	5
2	4	3	2	3	....	....	1	2	....	....	....	....	....	....	15
3	7	2	1	2	1	1	....	1	3	....	....	....	....	....	18
4	13	10	7	2	6	2	3	....	....	....	....	....	....	....	43
5	20	11	12	4	3	3	4	1	2	....	....	1	....	....	61
6	14	17	12	8	5	5	4	1	2	....	....	....	....	....	68
7	22	13	13	8	7	8	7	3	2	....	1	1	1	1	87
8	23	24	19	11	4	2	5	4	1	1	2	....	....	....	96
9	21	17	10	9	7	5	4	....	....	....	1	1	....	....	75
10	17	15	21	11	6	4	4	6	2	1	3	1	....	....	91
11	11	8	3	9	13	4	5	1	2	1	....	....	....	....	57
12	4	9	10	6	4	1	2	1	1	2	....	....	....	....	40
13	2	3	7	4	6	3	....	1	....	....	....	....	....	....	26
14	1	2	6	1	4	1	....	1	....	....	....	....	....	....	16
15	....	....	....	2	....	....	3	....	....	....	....	....	....	....	5
16	....	....	1	....	1	....	1	....	....	....	....	....	....	....	3
18	....	....	....	....	1	....	....	....	....	....	....	....	....	....	1
20	....	....	....	....	....	1	....	....	....	....	....	....	....	....	1
Total	162	134	126	80	68	40	43	22	15	5	7	4	1	1	708
Average number of pigs per litter	7.2	7.9	8.4	8.6	9.3	8.6	8.4	8.2	7.1	10.6	8.9	7.8	7.0	7.0	

NOTE.—The 708 litters contained 5,774 pigs, an average of 8.1 pigs per litter.
The average number of pigs from sows 1 and 1½ years old was 7.5 pigs.
The average number of pigs from sows 2 years old or over was 8.6 pigs.

TABLE 11.—RELATION OF WEIGHT OF PIGS TO SIZE OF LITTER IN WHICH FARROWED: *Females*

Weight per pig, *lbs.*	Number of pigs per litter																		Total number of litters
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	18	20	
.7	...	...	...	...	...	...	...	...	1	2	...	...	...	...	...	1	...	...	4
.8	...	...	...	...	1	...	...	...	1	...	1	1	1	...	...	...	...	...	5
.9	...	...	...	...	...	...	...	1	...	...	...	...	2	...	...	...	...	...	3
1.0	...	...	...	...	...	...	...	...	1	5	2	3	1	1	...	...	...	...	13
1.1	...	...	...	1	...	...	1	...	2	1	2	2	1	...	...	...	...	...	10
1.2	...	...	...	1	1	5	2	...	1	2	1	1	1	4	...	...	...	...	19
1.3	...	...	...	1	1	...	2	3	8	1	3	3	2	2	...	...	...	...	26
1.4	...	...	...	...	1	1	2	...	8	7	2	1	1	3	...	...	...	...	26
1.5	...	...	...	1	...	2	5	6	5	13	2	7	2	2	1	...	...	...	46
1.6	...	...	1	...	1	6	6	5	3	7	5	8	9	3	1	...	...	1	56
1.7	...	...	...	1	4	1	4	6	5	8	9	8	3	3	...	...	1	...	53
1.8	...	...	...	...	1	4	7	8	8	14	9	6	6	1	...	...	1	...	65
1.9	...	...	1	2	2	3	9	11	7	16	8	10	4	3	3	1	...	...	80
2.0	...	...	1	1	4	6	17	16	23	25	19	14	10	8	3	...	...	2	149
2.1	...	...	...	5	...	3	4	15	20	18	14	14	1	4	...	2	...	...	100
2.2	...	...	1	6	2	11	11	7	23	15	20	13	4	9	1	...	1	2	126
2.3	...	...	...	8	7	9	8	21	26	30	18	13	10	5	1	1	...	1	158
2.4	1	...	3	5	8	12	17	20	22	26	18	12	5	6	2	...	...	...	158
2.5	1	2	3	4	5	16	19	29	24	31	34	19	9	11	1	...	1	...	209
2.6	...	...	1	6	5	9	16	22	17	35	22	9	5	6	1	1	...	1	156
2.7	...	1	1	3	10	14	15	25	13	30	18	12	8	7	1	2	1	2	163
2.8	...	3	5	2	13	13	20	23	24	22	16	16	6	2	3	1	1	...	170
2.9	...	...	1	5	9	7	10	11	6	11	15	7	9	1	1	...	...	...	93
3.0	...	1	2	3	18	18	16	29	21	33	15	15	7	4	3	...	1	1	187
3.1	...	2	1	1	6	7	10	13	5	12	3	10	4	2	2	2	...	...	80
3.2	...	...	2	1	5	7	9	17	7	10	1	13	5	3	...	...	...	...	80
3.3	...	1	2	2	2	5	6	9	10	7	7	5	2	1	...	...	...	1	60
3.4	...	1	2	7	2	4	2	11	7	7	3	5	2	...	...	...	...	...	53
3.5	...	2	1	6	5	5	5	10	4	5	7	1	...	3	...	...	1	...	55
3.6	...	...	...	5	4	6	1	2	3	2	2	2	1	...	...	...	...	...	28
3.7	...	...	...	1	3	1	3	4	4	4	...	...	...	...	...	...	...	...	20
3.8	...	...	1	1	1	1	3	...	...	...	1	2	...	...	...	...	...	...	10
3.9	...	...	...	1	...	...	1	1	...	...	...	1	...	...	...	...	...	...	4
4.0	...	...	1	...	2	...	1	2	...	...	...	1	...	...	...	...	...	...	7
4.1	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	2
4.2	...	...	...	...	1	1	2	...	...	1	...	...	...	...	...	...	...	...	5
4.3	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1
4.4	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1
4.5	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1
4.9	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1
Total	2	13	30	80	125	177	238	327	309	400	278	234	121	94	24	11	8	12	2483

Percent weighing 2.5 pounds or less.....52.6
Percent weighing over 2.5 pounds.....47.4
The females constituted 47.9 percent of the total number of pigs farrowed.

TABLE 12.—RELATION OF WEIGHT OF PIGS TO SIZE OF LITTER IN WHICH FARROWED: *Males*

Weight per pig, *lbs.*	Number of pigs per litter																		Total number of litters
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	18	20	
.2	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1
.4	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1
.7	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	2
.8	...	...	...	...	...	...	...	...	1	1	...	...	1	1	...	...	...	...	4
.9	...	...	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	2
1.0	...	...	...	1	...	...	...	3	4	2	5	1	1	1	...	1	...	...	19
1.1	...	...	...	...	...	...	...	2	1	4	1	2	...	1	1	1	...	...	13
1.2	...	...	...	1	1	1	1	3	3	...	1	2	2	...	...	...	1	...	16
1.3	...	...	...	1	...	...	1	1	3	2	1	2	2	1	...	...	...	...	14
1.4	...	...	...	...	...	2	3	3	5	5	2	5	4	...	...	...	...	...	29
1.5	...	...	...	1	...	3	...	8	6	7	6	2	4	2	1	...	2	...	42
1.6	...	...	...	1	1	3	2	3	6	6	6	4	2	2	...	...	...	...	36
1.7	...	...	...	...	1	5	2	4	7	6	9	7	2	4	...	1	...	...	48
1.8	...	...	1	2	1	2	5	10	11	10	9	10	10	4	1	1	...	...	77
1.9	1	...	...	4	...	3	7	7	8	14	12	6	5	4	1	1	...	...	73
2.0	...	2	...	3	2	10	16	16	21	16	13	20	6	3	4	...	...	...	132
2.1	...	...	...	3	8	9	12	13	11	14	10	13	3	5	2	...	1	...	104
2.2	...	...	1	3	5	11	10	16	14	22	21	15	8	6	2	1	...	1	136
2.3	...	1	3	3	8	9	22	16	15	18	21	14	7	6	4	1	1	1	150
2.4	...	3	1	2	4	19	16	21	25	16	21	10	11	8	1	...	...	...	158
2.5	1	2	3	3	10	13	40	22	22	32	25	18	9	6	2	2	2	1	213
2.6	...	2	3	4	11	11	30	15	21	23	16	14	12	7	1	1	...	...	171
2.7	...	...	1	7	14	4	22	24	16	36	22	3	7	5	2	5	1	2	171
2.8	...	...	...	1	10	20	18	24	14	34	25	8	10	5	...	2	...	1	172
2.9	...	1	4	2	9	11	19	11	15	18	11	12	11	4	2	1	1	...	132
3.0	1	2	3	4	16	23	21	35	25	33	26	17	8	10	4	2	...	1	231
3.1	...	...	1	5	6	8	9	18	10	14	19	7	7	2	1	1	...	...	108
3.2	...	1	1	2	10	7	17	12	8	7	10	6	9	7	...	...	...	...	97
3.3	...	1	1	6	6	4	7	10	11	14	5	5	7	2	...	...	...	1	80
3.4	...	...	...	3	8	3	7	15	6	9	4	7	2	3	3	...	1	...	71
3.5	...	...	2	4	6	5	8	8	6	14	4	6	1	3	...	...	...	...	67
3.6	...	...	1	3	...	2	9	6	3	6	1	5	...	...	...	...	...	...	36
3.7	...	...	...	2	1	4	4	4	1	6	2	2	...	...	2	...	...	...	28
3.8	...	...	...	2	1	...	2	3	3	8	...	2	1	3	1	...	...	...	26
3.9	...	...	1	1	...	1	2	...	1	4	1	1	...	...	...	...	...	...	12
4.0	...	...	...	2	1	1	5	2	1	3	1	...	...	...	...	...	...	...	16
4.1	...	...	...	1	1	...	1	1	...	1	...	...	1	...	...	...	...	...	6
4.2	...	...	...	...	1	...	1	1	1	...	...	...	...	...	...	...	...	...	4
4.3	...	...	...	1	1	...	...	...	1	...	...	...	1	...	...	...	...	...	4
4.4	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	2
4.5	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1
Total	3	15	27	78	144	194	320	337	306	410	310	226	156	105	35	21	10	8	2705

Percent weighing 2.5 pounds or less.....46.8
Percent weighing over 2.5 pounds.....53.2
The males constituted 52.1 percent of the total number of pigs farrowed.

TABLE 13.—RELATION OF WEIGHT OF PIGS TO SIZE OF LITTER IN WHICH FARROWED: *Females and Males*

Number of pigs per litter	Females			Males			Total number studied		
	Number	Total weight, *lbs.*	Average weight per pig, *lbs.*	Number	Total weight, *lbs.*	Average weight per pig, *lbs.*	Number	Total weight, *lbs.*	Average weight per pig, *lbs.*
1	2	4.9	2.45	3	7.4	2.47	5	12.3	2.46
2	13	39.0	3.00	15	39.1	2.61	28	78.1	2.79
3	30	84.8	2.83	27	76.0	2.81	57	160.8	2.82
4	80	216.6	2.71	78	217.8	2.79	158	434.4	2.75
5	125	346.5	2.77	144	406.7	2.82	269	753.2	2.80
6	177	463.5	2.62	194	507.3	2.61	371	970.8	2.62
7	238	615.1	2.58	320	862.2	2.69	558	1477.3	2.65
8	327	853.7	2.61	337	884.1	2.62	664	1737.8	2.62
9	309	748.4	2.42	306	763.4	2.49	615	1511.8	2.46
10	400	974.9	2.44	410	1070.4	2.61	810	2045.3	2.53
11	278	676.3	2.43	310	773.5	2.50	588	1449.8	2.47
12	234	569.6	2.43	226	559.2	2.47	460	1128.8	2.45
13	121	283.1	2.34	156	384.6	2.47	277	667.7	2.41
14	94	215.2	2.29	105	264.3	2.52	199	479.5	2.41
15	24	58.4	2.43	35	89.8	2.57	59	148.2	2.51
16	11	26.1	2.37	21	50.7	2.41	32	76.8	2.40
18	8	20.2	2.53	10	22.6	2.26	18	42.8	2.38
20	12	29.0	2.42	8	21.5	2.69	20	50.5	2.51
Total or average	2483	6225.3	2.51	2705	7000.6	2.59	5188	13225.9	2.55
Number in litters of 8 pigs or less	992	2624.1	2.65	1118	3000.6	2.68	2110	5624.7	2.67
Number in litters of more than 8 pigs	1491	3601.2	2.42	1587	4000.0	2.52	3078	7601.2	2.47

TABLE 14.—RELATION OF AGE OF DAM TO BIRTH WEIGHT OF PIGS

Age of dam, *years*	Number of pigs	Total weight of pigs, *lbs.*	Average weight per pig, *lbs.*
1	992	2415.7	2.44
1½	977	2396.9	2.45
2	951	2429.0	2.55
2½	647	1672.0	2.58
3	594	1541.2	2.59
3½	328	868.3	2.65
4	315	813.6	2.58
4½	171	462.4	2.70
5	99	281.2	2.84
5½	53	150.5	2.84
6	53	143.4	2.71
6½	18	54.0	3.00
7	7	15.9	2.27
8	7	25.0	3.57
Total	5212	13269.1	2.55
Average weight of pigs from sows 1 and 1½ years old			2.44
Average weight of pigs from sows 2 years old or over			2.61

TABLE 15.—RELATION OF AGE OF DAM TO NUMBER OF PIGS FARROWED DEAD OR IMMATURE

Age of dam, *years*	Number of pigs farrowed by sows of these ages				
	Dead	Immature	Total number dead or immature	Total number studied	Percent dead or immature
1	69	38	107	1174	9.1
1½	66	17	83	1058	7.8
2	51	31	82	1056	7.8
2½	38	12	50	690	7.2
3	66	21	87	635	13.7
3½	26	13	39	342	11.4
4	19	9	28	375	7.5
4½	19	6	25	181	13.8
5	22	..	22	107	20.6
5½	10	..	10	53	18.9
6	2	1	3	62	4.8
6½	5	3	8	31	25.8
7	..	..	..	7	....
8	..	..	..	7	....
Total	393	151	544	5778	9.4
Percentage of pigs farrowed dead or immature from sows 1 to 2½ years old					8.1
Percentage of pigs farrowed dead or immature from sows 3 years old or over					12.3

TABLE 16.—RELATION OF AGE OF DAM TO SEX OF PIGS

Age of dam, *years*	Number of pigs of each sex		Number of pigs, sex of which was not obtained	Total number studied
	Females	Males		
1	547	580	47	1174
1½	497	544	17	1058
2	487	530	39	1056
2½	331	347	12	690
3	298	327	10	635
3½	162	167	13	342
4	143	195	25	375
4½	88	89	4	181
5	48	59	..	107
5½	19	34	..	53
6	37	24	1	62
6½	11	17	3	31
7	1	6	..	7
8	4	3	..	7
Total	2673	2922	171	5778
Percent	47.8	52.2	....	....

	Females	Males
Percent from sows 1 and 1½ years old	48.2	51.8
Percent from sows 2 years old and over	47.5	52.5

TABLE 17.—TOTAL NUMBER OF LITTERS OF EACH BREED

Berkshire	363	Tamworth	40
Chester White	37	Large Yorkshire	35
Duroc-Jersey	78	Crossbred[1]	77
Hampshire	4	Unknown[2]	20
Poland China	67	Total	720

[1]All litters in which the pigs were cross-bred, regardless of breeding of dams, are listed as cross-bred.

[2]All litters, in which the breeding is not definitely known, are listed as unknown.

TABLE 18.—RELATION OF BREEDING TO: (a) AGE OF DAM, (b) LENGTH OF GESTATION PERIOD, (c) SIZE OF LITTER, (d) WEIGHT OF LITTER, AND (e) WEIGHT OF PIGS

Breeding	Average age of dams, *years*	Average length of gestation, *days*	Number of litters	Number of pigs	Number of pigs per litter	Weight		
						Total weight, *lbs.*	Average per litter, *lbs.*	Average per pig, *lbs.*
Berkshire	2.42	115.2	235	1744	7.42	4543.6	19.3	2.61
Chester White	2.52	113.1	29	278	9.59	719.0	24.8	2.59
Duroc-Jersey	2.04	113.1	57	498	8.74	1122.0	19.7	2.25
Hampshire	2.75	112.5	2	14	7.00	35.0	17.5	2.50
Poland China	2.34	114.6	47	309	6.57	773.5	16.5	2.50
Tamworth	2.28	114.2	23	217	9.43	560.4	24.4	2.58
Large Yorkshire	2.85	113.5	24	278	11.58	722.2	30.1	2.60
Crossbred	1.98	114.0	40	320	8.00	786.1	19.7	2.46
Average or total	2.35	114.5	457	3658	8.00	9261.8	20.3	2.53

TABLE 19.—RELATION OF MONTH OF FARROWING TO: (a) AGE OF DAM, (b) LENGTH OF GESTATION PERIOD, (c) SIZE OF LITTER, (d) WEIGHT OF LITTER, (e) WEIGHT OF PIGS

Month[1]	Average age of dams, *years*	Average length of gestation, *days*	Number of litters	Number of pigs	Number of pigs per litter	Weight		
						Total weight, *lbs.*	Average per litter, *lbs.*	Average per pig, *lbs.*
February	2.29	114.7	69	543	7.9	1377.2	20.0	2.54
March	2.41	114.6	92	758	8.2	1905.6	20.7	2.51
April	2.69	114.1	49	420	8.6	1062.8	21.7	2.53
May	2.04	115.0	53	413	7.8	1037.6	19.6	2.51
June	2.10	114.5	20	140	7.0	348.1	17.4	2.49
July	2.80	114.1	15	105	7.0	278.3	18.6	2.65
August	2.34	113.8	73	607	8.3	1552.6	21.3	2.56
September	2.39	115.2	49	388	7.9	996.8	20.3	2.57
October	2.38	114.5	25	225	9.0	574.1	23.0	2.55
November	1.95	114.1	19	125	6.6	313.4	16.5	2.51
Total or average	2.34	114.5	464	3724	8.0	9446.5	20.4	2.55

[1]But one litter was farrowed in each January and December. Those litters are omitted here on account of lack of breeding date in one instance and weight of pigs in the other.

TABLE 20.—RELATION OF ORDER OF FARROWING TO SEX AND WEIGHTS OF PIGS (261 LITTERS)

Weight, *lbs.*	First Farrowed			Last Farrowed		
	Females	Males	Total	Females	Males	Total
.8	..	1	1	..	1	1
.9	..	..	..	1	..	1
1.0	1	..	1	2	2	4
1.1	1	1	2	1	..	1
1.2	..	1	1	2	2	4
1.3	3	..	3	3	..	3
1.4	..	1	1	2	2	4
1.5	2	2	4	..	6	6
1.6	3	2	5	5	3	8
1.7	1	1	2	4	..	4
1.8	2	3	5	4	3	7
1.9	4	2	6	8	5	13
2.0	9	8	17	11	6	17
2.1	7	4	11	3	7	10
2.2	8	7	15	6	6	12
2.3	3	6	9	5	4	9
2.4	8	9	17	6	11	17
2.5	5	12	17	10	18	28
2.6	6	11	17	7	8	15
2.7	8	12	20	10	4	14
2.8	6	14	20	7	9	16
2.9	3	6	9	4	6	10
3.0	6	15	21	8	11	19
3.1	4	7	11	7	3	10
3.2	1	9	10	5	2	7
3.3	2	5	7	1	4	5
3.4	2	7	9	2	3	5
3.5	5	5	10	..	2	2
3.6	3	1	4	2	2	4
3.7	..	1	1	..	1	1
3.8	..	..	..	1	..	1
3.9	1	..	1	..	1	1
4.0	2	1	3	1	1	2
4.4	..	1	1	..	..	..
Total	106	155	261	128	133	261
Average weight	2.50	2.67	2.60	2.39	2.48	2.43
Percent	40.6	59.4	.....	49.0	51.0	.....
Number of pigs weighing 2.5 pounds or less	57	60	117	73	76	149
Number of pigs weighing over 2.5 pounds	49	95	144	55	57	112

NOTE.—The grand average weight of all the pigs in the 261 litters was 2.54 pounds.

TABLE 21.—DATA CONCERNING SUCCEEDING LITTERS FROM THE SAME SOWS

Litter	1	2	3	4	5	6	7	8	9	Average
AVERAGE OF 246 SOWS WITH ONE LITTER EACH										
Age of sows	1.2									1.2
Length of gestation period	114.5									114.5
Number of pigs per litter	7.2									7.2
Weight per litter	17.4									17.4
Weight per pig	2.41									2.41
AVERAGE OF 152 SOWS WITH TWO LITTERS EACH										
Age of sows	1.2	2.0								1.6
Length of gestation period	114.8	114.4								114.6
Number of pigs per litter	7.4	8.4								7.9
Weight per litter	17.9	21.5								19.7
Weight per pig	2.38	2.55								2.47
AVERAGE OF 84 SOWS WITH THREE LITTERS EACH										
Age of sows	1.2	2.0	2.7							1.9
Length of gestation period	115.1	114.3	114.5							114.6
Number of pigs per litter	7.7	9.0	8.7							8.5
Weight per litter	18.3	22.7	22.7							21.3
Weight per pig	2.36	2.54	2.64							2.52
AVERAGE OF 51 SOWS WITH FOUR LITTERS EACH										
Age of sows	1.2	2.0	2.7	3.3						2.3
Length of gestation period	114.9	114.7	114.4	114.8						114.6
Number of pigs per litter	7.7	8.9	8.7	9.4						8.7
Weight per litter	18.5	22.0	22.0	23.1						21.4
Weight per pig	2.36	2.50	2.60	2.59						2.52
AVERAGE OF 35 SOWS WITH FIVE LITTERS EACH										
Age of sows	1.1	2.0	2.6	3.2	3.8					2.5
Length of gestation period	114.7	114.5	114.3	114.7	115.0					114.6
Number of pigs per litter	7.7	8.9	8.9	9.8	9.3					8.9
Weight per litter	18.9	22.5	23.1	24.6	23.6					22.5
Weight per pig	2.38	2.61	2.66	2.61	2.67					2.59
AVERAGE OF 22 SOWS WITH SIX LITTERS EACH										
Age of sows	1.1	1.9	2.5	3.2	3.8	4.4				2.8
Length of gestation period	114.4	114.6	114.5	114.9	115.0	114.6				114.6
Number of pigs per litter	8.0	8.7	9.1	10.0	9.5	9.6				9.2
Weight per litter	19.0	23.0	23.6	25.9	24.6	24.7				23.4
Weight per pig	2.40	2.62	2.68	2.69	2.71	2.61				2.62
AVERAGE OF 13 SOWS WITH SEVEN LITTERS EACH										
Age of sows	1.1	2.0	2.6	3.3	3.9	4.5	5.2			3.2
Length of gestation period	115.1	114.5	114.8	114.8	114.9	115.3	113.4			114.7
Number of pigs per litter	7.8	9.1	8.8	9.6	9.1	9.1	7.7			8.7
Weight per litter	18.9	23.2	23.9	26.7	23.7	24.5	21.4			23.2
Weight per pig	2.43	2.60	2.76	2.78	2.88	2.77	2.67			2.70
AVERAGE OF 5 SOWS WITH EIGHT LITTERS EACH										
Age of sows	1.1	2.0	2.6	3.2	3.7	4.3	4.7	5.5		3.4
Length of gestation period	115.3	114.4	114.6	114.3	114.3	113.8	114.8	115.0		114.5
Number of pigs per litter	6.2	9.2	8.8	8.6	8.2	9.4	7.2	8.4		8.3
Weight per litter	16.7	23.0	22.7	24.6	22.7	23.2	19.8	23.2		21.9
Weight per pig	2.70	2.55	2.75	2.87	2.83	2.63	2.74	2.83		2.73
AVERAGE OF 3 SOWS WITH NINE LITTERS EACH										
Age of sows	1.2	2.0	2.5	3.0	3.5	4.2	4.7	5.5	6.3	3.6
Length of gestation period	116.0	115.0	115.3	114.0	113.5	114.0	116.0	117.5	116.0	115.3
Number of pigs per litter	4.7	8.0	8.0	7.7	7.3	7.7	7.3	7.7	9.7	7.6
Weight per litter	12.2	20.1	23.0	22.0	20.9	19.0	21.5	21.0	25.6	20.5
Weight per pig	2.61	2.63	2.87	2.87	2.85	2.85	2.94	2.87	2.95	2.84

Age is given in *years;* gestation period in *days;* weight in *pounds.*

TABLE 22.—DATA CONCERNING SUCCEEDING LITTERS FROM THE SAME SOWS AT DIFFERENT AGES

SOWS WITH ONE LITTER EACH

Sows farrowing first litter at	1 yr.	1½ yrs.
Number of sows	153	74
Length of gestation period	114.7	114.1
Number of pigs per litter	7.15	7.35
Weight per litter	16.9	17.9
Weight per pig	2.40	2.44

SOWS WITH TWO LITTERS EACH

43 Sows: Age at farrowing	1 yr.	1½ yrs.	Aver.
Length of gestation period	114.9	114.4	114.7
Number of pigs per litter	7.21	8.72	7.96
Weight per litter	16.1	22.3	19.3
Weight per pig	2.26	2.51	2.41
53 Sows: Age at farrowing	**1 yr.**	**2 yrs.**	**Aver.**
Length of gestation period	114.7	114.0	114.4
Number of pigs per litter	7.70	8.11	7.91
Weight per litter	18.8	22.2	20.4
Weight per pig	2.40	2.54	2.47
28 Sows: Age at farrowing	**1½ yrs.**	**2 yrs.**	**Aver.**
Length of gestation period	114.8	114.7	114.8
Number of pigs per litter	6.71	7.93	7.32
Weight per litter	16.3	21.2	18.6
Weight per pig	2.46	2.61	2.54

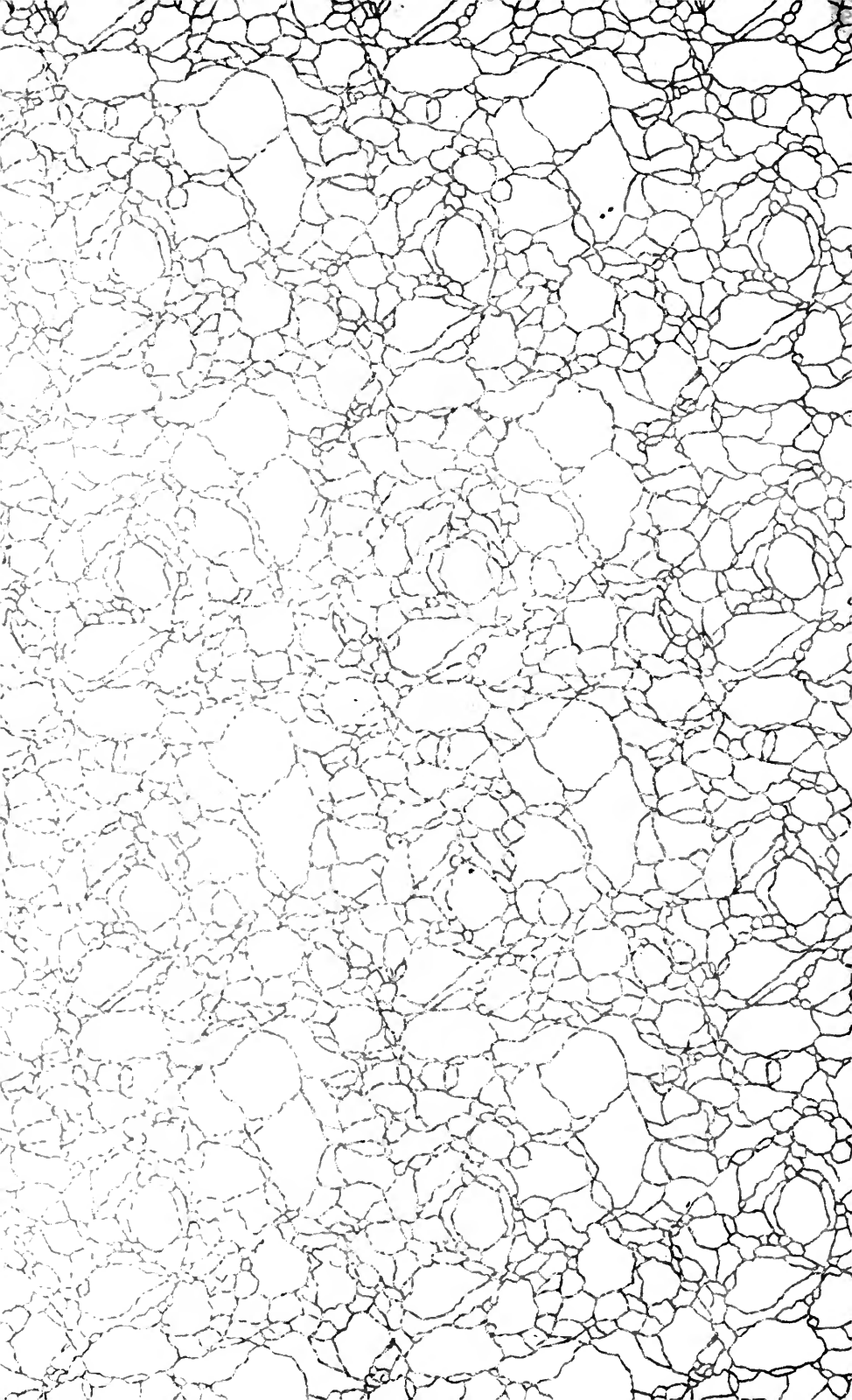
SOWS WITH THREE LITTERS EACH

14 Sows: Age at farrowing	1 yr.	1½ yrs.	2 yrs.	Aver.
Length of gestation period	114.3	114.1	114.8	114.4
Number of pigs per litter	7.64	8.57	9.64	8.62
Weight per litter	16.7	22.3	23.0	20.5
Weight per pig	2.19	2.63	2.48	2.44
9 Sows: Age at farrowing	**1½ yr.**	**2 yrs.**	**2½ yrs.**	**Aver.**
Length of gestation period	114.6	114.7	114.0	114.4
Number of pigs per litter	6.89	8.56	8.89	8.11
Weight per litter	16.4	21.8	23.6	20.4
Weight per pig	2.38	2.67	2.66	2.57
22 Sows: Age at farrowing	**1 yr.**	**2 yrs.**	**2½ yrs.**	**Aver.**
Length of gestation period	114.9	114.0	114.7	114.5
Number of pigs per litter	8.05	10.27	9.05	9.12
Weight per litter	19.1	24.3	24.3	22.5
Weight per pig	2.37	2.50	2.64	2.51
11 Sows: Age at farrowing	**1 yr.**	**2 yrs.**	**3 yrs.**	**Aver.**
Length of gestation period	112.7	113.6	114.5	113.8
Number of pigs per litter	8.27	9.64	8.82	8.91
Weight per litter	20.3	24.7	23.7	23.0
Weight per pig	2.42	2.56	2.70	2.56

SOWS WITH FOUR LITTERS EACH

7 Sows: Age at farrowing	1 yr.	1½ yrs.	2 yrs.	2½ yrs.	Aver.
Length of gestation period	113.5	114.0	114.8	114.8	114.3
Number of pigs per litter	7.86	10.29	10.57	10.43	9.79
Weight per litter	19.1	25.4	24.5	24.2	23.3
Weight per pig	2.43	2.54	2.45	2.32	2.42
5 Sows: Age at farrowing	**1½ yrs.**	**2 yrs.**	**2½ yrs.**	**3 yrs.**	**Aver.**
Length of gestation period	115.3	114.6	113.4	114.0	114.3
Number of pigs per litter	8.60	10.40	9.00	9.00	9.25
Weight per litter	19.8	25.6	24.8	22.4	22.9
Weight per pig	2.30	2.56	2.76	2.49	2.52
13 Sows: Age at farrowing	**1 yr.**	**2 yrs.**	**2½ yrs.**	**3 yrs.**	**Aver.**
Length of gestation period	114.6	113.8	114.5	114.4	114.3
Number of pigs per litter	7.46	10.00	9.31	10.62	9.35
Weight per litter	17.0	20.7	23.7	25.8	21.7
Weight per pig	2.31	2.36	2.46	2.67	2.51

Length of gestation period is given in *days;* weight in *pounds.*



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