

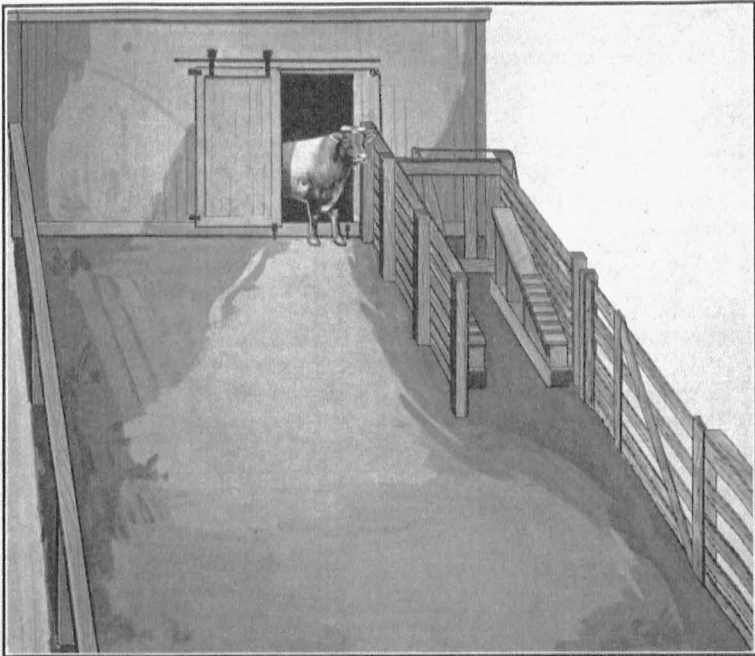
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AGRICULTURAL EXPERIMENT STATION

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Care, Feeding and Management of the Dairy Sire



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Care, Feeding and Management of the Dairy Sire

A. C. RAGSDALE AND WARREN GIFFORD

When a herd sire capable of improving the dairy herd has been selected, the next problem of the breeder is to so care for him that he will be kept in the best possible breeding condition at all times, and will remain a satisfactory breeder to an advanced age. The principal points involved may be summarized as any system of care, feeding and management which will result in the young bull attaining his full size and best development as an individual, avoiding excessive use especially while young, never permitting him to run with the cows, providing a suitable but moderate ration, provision for plenty of exercise, and suitable arrangements for housing with convenience and safety in the handling of the mature bull.

A study of thousands of records has shown that good proved dairy sires frequently double the production of an average dairy herd in two or three generations, and yet a majority of all pure bred sires go to the butcher before their value is known. The principal reason why most farmers send their bulls to the butcher before there is definite knowledge of their real value, is because of difficulties in the care and management of older bulls. Mature bulls often develop fretfulness or even viciousness, and so become hard to handle or even unsafe, unless proper provision is made for their care and handling. Because of the great strength and nervous temperament of mature bulls, they need to be handled with care. Because of the greater possibilities for herd improvement through the use of proved sires, and because it is seldom possible to judge the transmitting ability of any sire before he is about five years old, the problem of the care and management of the mature bull will be given first consideration.

HOUSING THE DAIRY SIRE

A separate bull shed or box stall in the barn, opening into a large, strongly fenced exercise yard, in which provision is made for breeding the cows without the necessity of attendants actually handling the bull, offers the best method of caring for the bull with convenience and safety.

A suitable bull shed for one bull should be about 12 by 20 feet in size, which will allow for a stall with inside dimensions of approximately 11 by 14½ feet, and a feed alleyway about 4 by 11 feet, with room for a feed bin at one end. One door should open from the feed alley to the

outside, and a second door into the bull stall which may be so arranged, when it is desirable to enter the bull pen, that it will swing back, closing an open doorway leading to the exercise yard or paddock. This arrangement permits cleaning or other work in the bull pen when the bull is outside in the yard. A sliding door, controlled from the outside, for the opening from the stall into the exercise yard, will also make it possible to close the bull in his stall and permit cleaning or other work in the yard without danger from the bull. A strong halter, or better, a special bull stanchion, in the end of the stall adjoining the feed alley, may be used to tie the bull in his stall when any circumstances arise making it desirable to enter the stall when the bull is in the shed. It is more desirable to have a separate bull shed than to have the bull in the barn. Figure 1 shows the general arrangement of such a bull shed, with the exercise yard and suggested layout for a breeding chute.

The foundation for the bull shed should usually be of concrete. A 6-inch wall, 2 feet below and 1 foot above ground, is recommended. A cinder or hard clay floor is satisfactory. If a concrete floor is desired, a 4 or 5-inch floor is recommended. It will be found to be very satisfactory to use a 1-2½-3½ mix for both the foundation and the floor.

BREEDING CHUTE AND BREEDING RACK

A breeding chute built in the exercise yard and provided with a simple arrangement of gates makes it possible to lead a cow into the chute and then by opening the gate, admit the bull for breeding the cow. After service, the gate is swung back, forcing the bull back into the yard. The cow may then be led out forward by opening the stanchion and the gate in which it is placed. In this manner, any bull may be used for breeding cows with perfect safety. Figure 2 shows detailed plans and specifications for building such a breeding chute and gate. The gate may also be used for entrance into the bull yard, as may occasionally be necessary for work in the yard, or to haul out manure.

A breeding rack to aid in the mating of old or heavy bulls with young or small heifers or for general use with all cows, may be built into the chute, or may be built separately and placed in the breeding chute only when its use is desired. By many breeders, such a breeding rack is considered indispensable. Figure 3 shows detailed plans for the construction of a suitable breeding rack.

THE BULL YARD FENCE

The question of the fence for the bull yard is an important one. The principal points to be kept in mind in building the fence are to make it so strong that the bull cannot break through it, and so high that he can-

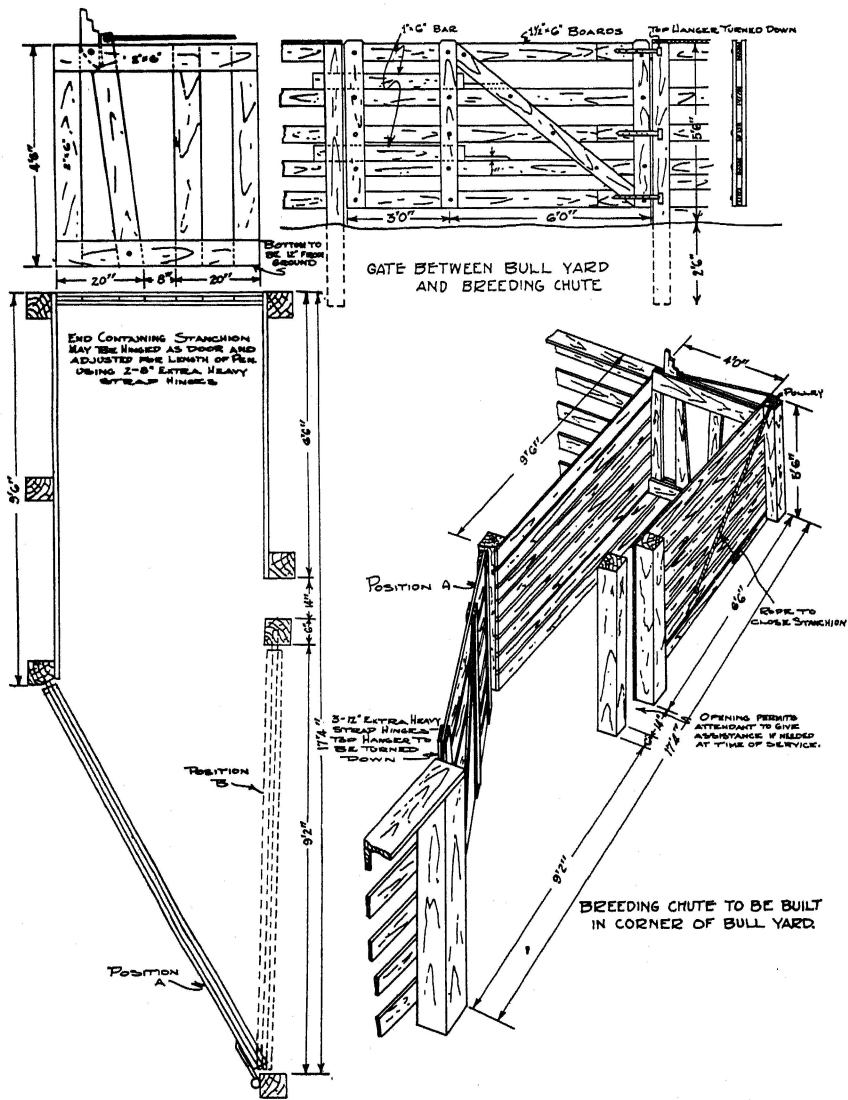


Fig. 2.—Plan for breeding chute.

not jump over it. A good rule is to build the fence so that he cannot get his head either through, over or under it. It may be built of heavy oak or concrete posts, and heavy planks or rails, or 2-inch iron piping. No. 9 woven wire with a 6-inch stay and a barb wire top and bottom is sometimes used, but is not recommended because it sooner or later stretches

and sags as a result of the bull butting his head against it. The posts should be at least 8 feet long, which will permit of setting them $2\frac{1}{2}$ feet in the ground and leave a fence $5\frac{1}{2}$ feet high. In rare instances, a 6-foot

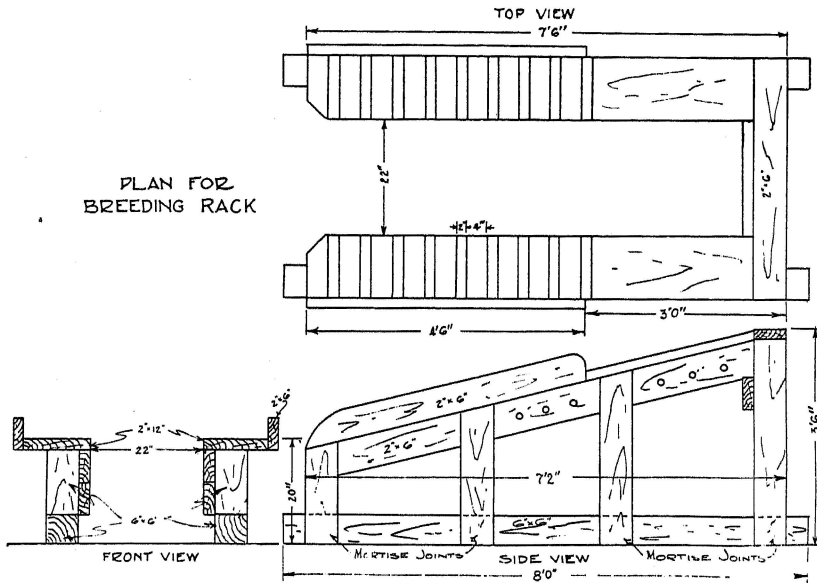


Fig. 3.—Plan for breeding rack.

fence may be desirable, in which case 9-foot posts set 3 feet in the ground are recommended. The corner posts should be 8 by 8 inches and other posts 6 by 6 inches and they should be set 6 to 8 feet apart. If plank fencing is used, oak boards $1\frac{1}{2}$ by 6 inches are recommended. If it is desired to make the posts of concrete, they should be made 6 by 6 inches square, 8 or 9 feet long with four 8- or 9-foot bars of $\frac{3}{4}$ inch steel reinforcing to each post. A 1-2-3 mix will be required for the posts. Figure 4 shows details of construction for the bull fence.

At least 2000 square feet of space is desirable in the exercise yard. A bull will take more exercise in a long narrow yard; therefore it is suggested that the exercise yard be at least 20 feet wide by 100 feet long. Where possible, a larger yard, possibly one-fourth of an acre is desirable. The larger yard is necessary, especially if two or more bulls use the same yard. This is a good plan where two or more bulls are kept, because when running together in this way, they will invariably take more exercise than when confined in separate lots. If the bulls are dehorned, this practice may be followed without danger of their harming one another.

The exercise yard should preferably be located where the bull can see the cows in the barn lots, and when they are going to and from their

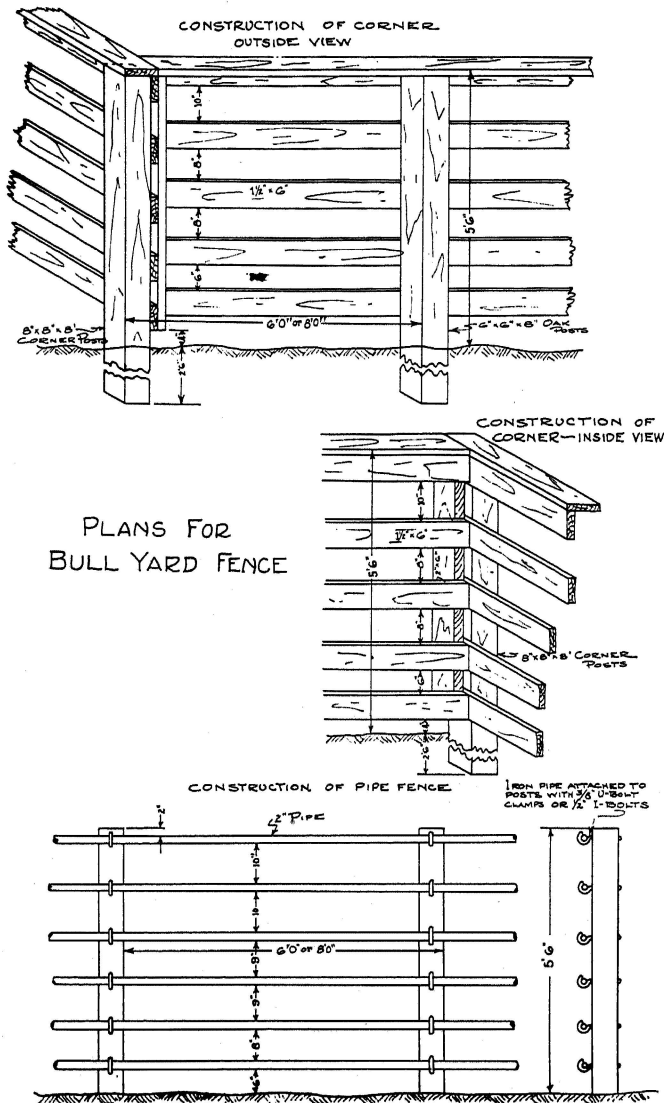


Fig. 4.—Plans for constructing bull yard fence.

pastures. An excellent plan used by some breeders is to locate the bull yard so that the full length of it runs along a lane through which the cows pass in going to and from pasture. The bull will follow the cows along the fence and in this manner will take more exercise. If this general arrangement is followed, and the precautions mentioned are

taken, the bull is not likely to become vicious, will not learn to use his great strength in breaking fences or gates, and will keep in better breeding condition.

EXERCISE FOR THE DAIRY SIRE

Exercise is an important factor in maintaining the vigor of the sire. A bull shed with an open doorway to an exercise yard such as has already been recommended, is usually sufficient and the most satisfactory plan. A swinging butt of a tree in the lot may also be used advantageously as a further inducement to exercise. Figure 5 illustrates such an arrangement now in use on several Missouri farms. Tread mills, overhead

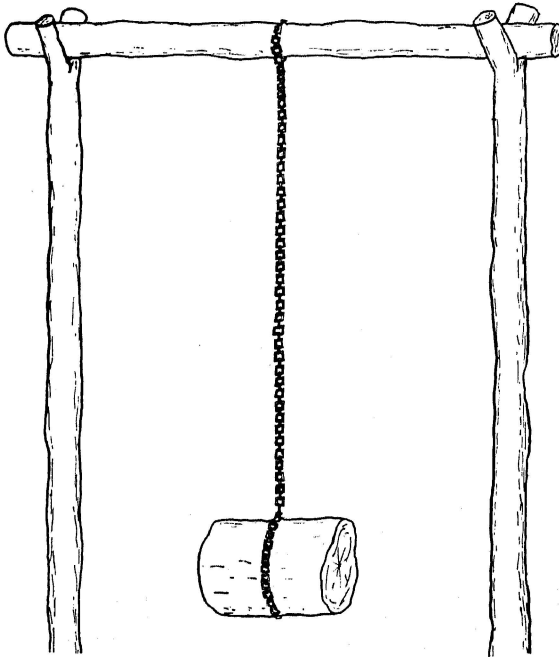


Fig. 5.—A simple plan for inducing the bull to take exercise.

sweeps, cables, and walking or working the bull are other methods of exercise, but are seldom as satisfactory as the simple plan of allowing the bull a suitable yard in which to exercise at will. Do not jail the dairy sire. Solitary confinement in an isolated stall is usually conducive to the development of fretfulness and viciousness.

FEEDING THE MATURE BULL

The mature bull is kept in the best breeding condition, when fed rather liberally and when taking enough exercise to keep him in moderate flesh. He should never be allowed to get fat.

Legume hays such as alfalfa, soybean or clover, or a good grade of mixed hay, make the best roughage. Ordinarily such roughages should be fed in as large quantities as the sire will consume readily, although in certain cases it may be desirable to limit the amount of roughages; for example, in instances where the bull becomes slow, or shows a tendency toward sterility. Silage fed in small amounts, not to exceed 15 pounds daily, is a good conditioner, but if fed in larger amounts may tend to make the bull slow, sluggish, and uncertain as a breeder. Most breeders prefer not to use silage at all, although many make regular use of it. Beet pulp is also an excellent succulent and is preferred to silage by some breeders. About one and one-half gallons of the soaked pulp may be fed daily if desired. It may also be beneficial to allow the bull to graze some if a suitable, strongly fenced pasture is available. Under most conditions, however, this is seldom desirable, and especially where the bull is an old one, inclined to break fences, or difficult to handle.

The grain allowance should usually range from 4 to 10 pounds daily, depending on the individual bull. The amount of grain should be varied according to his condition. Where legume hays make up the principal roughage fed, a grain mixture of 4 parts ground corn, 3 parts ground oats, 2 parts wheat bran and 1 part linseed oil meal has been used in the University herd with very satisfactory results. A slight variation from this, 3 parts ground corn, 3 parts ground oats, 1 part wheat bran and 1 part linseed oil meal, has also been used by many Missouri breeders with excellent results. Where the roughage ration must be made up principally of non-legumes, such as timothy, corn stover, sudan and similar feeding stuffs, a grain mixture consisting of equal parts by weight of ground corn, ground oats, wheat bran and linseed oil meal is recommended. Where good mixed hay is the roughage, it is suggested that a grain mixture of 2 parts ground corn, 2 parts ground oats, 1 part wheat bran and 1 part linseed oil meal be used. Ground barley, hominy and similar feeds may be substituted for corn in any of these rations, and similarly, crushed soybeans, gluten feed or meal, cottonseed meal, etc., may be substituted for all or a part of the linseed oil meal where available feeds and price conditions make this desirable.

Salt should always be supplied, and may be mixed with the grain in the proportion of about one per cent, or it may be kept available in a separate box in the stall or lot. Mineral supplements are seldom needed, especially where the roughage consists of legume hays. Where

non-legume roughages, all of which are low in lime, are fed, or if the legume hays are not of good quality, from 1 to 2 per cent of special feeding steamed bone meal or 2 to 3 per cent of a mixture of equal parts bone meal and a high grade of ground limestone may be mixed with the grain. Plenty of clean, fresh water should be available at all times.

THE FEEDING AND CARE OF THE YOUNG BULL

The bull calf should be kept in a good thrifty condition, and kept growing so that he will attain his full size, since an undersized bull is always looked upon with disfavor. The calf may be and usually is cared for with the heifers for the first six months, after which he should be separated from them and kept with other young bulls or alone. At about this time or soon thereafter he is usually weaned from skim-milk. By this time he should be eating hay freely, and 4 to 6 pounds of grain daily. From this time on the same grain mixture as has been suggested for the mature bull may be used satisfactorily. He should, at all times, be fed enough to keep him growing well and in good condition, but there is no advantage in getting him fat.

The bull should be taught when a calf to lead and to stand tied. He should be taught to handle on a leash and with a staff. When handling the mature bull, it is always safer to use the staff. A strong halter, or better a special bull stanchion, may be used when it is desirable to tie him in his stall. The safer plan, however, with all mature bulls, is to use the special bull shed, pen and breeding chute previously described.

RINGING AND DEHORNING

When the young bull is about a year of age, a ring should be put in his nose for convenience and safety in handling. To insert the ring, a hole is made through the thin membrane between the nostrils, usually with a special punch made for the purpose or with an ordinary trocar. The ring is then slipped through the opening as the instrument is withdrawn.

In most instances it is advisable to dehorn the bull, and certainly it is always the safer plan. Where this is done, it is usually a good practice to wait until he is about 2 to 3 years of age, or earlier, if he shows a tendency to become mean and to use his horns. Dehorning at this time seems to have a marked effect in subduing a bull that shows a tendency to develop fretfulness or meanness, also he does not there-

after learn to use his head as well as if his horns had been taken off at an earlier age. Many breeders with highly developed purebred herds or having bulls they expect to exhibit in the show ring consider that a bull with a nice shapely set of horns makes a sufficiently better appearance that the advantages thus gained are sufficient to outweigh the danger. There is, however, an increasing tendency among these breeders toward dehorning, and as a general rule, except possibly in such herds, it is always to be recommended that the bull be dehorned.

AMOUNT OF SERVICE

Most bulls are sufficiently mature for light service by the time they are a year of age. If well developed, a young bull may be used for an occasional service after he is 9 or 10 months old. In most cases, however, it is better to wait until he is 12 to 15 months of age before he is used. Up until that time he should not be used for more than one service in any one week, and the total number of services during this period should usually not exceed half a dozen. After he is about 15 months old and until 18 months of age, it is usually safe to allow two services per week, and rarely, three; thereafter no special limitation need be placed on amount of service, excepting that the total number of cows bred before the bull is 2 years of age should usually not exceed 25 or 30.

From 2 to 3 years of age, the maximum breeding power is reached, and the bull may then be expected to take care of a herd up to about 50 cows, and where the distribution of service is fairly uniform throughout the year, a much larger number of cows may be bred. With proper care and management, he may retain his breeding ability up to the age of 12 to 16 years, or even longer.

The bull should never be permitted to run with the cows. Such a practice results in the bull exhausting himself unnecessarily, and will often get heifers in calf younger than is desirable. Under such conditions, it is also impossible to keep accurate breeding records. Furthermore, there is always danger to persons and property when the bull is running loose. He may always have been gentle, but there is no way of telling when he may become vicious. It is the gentle bull, not the vicious one, that most often kills or maims his man. For these reasons, he should always be handled with caution and with some system of care and management such as have been recommended.

NORMAL PERIOD OF GESTATION

The normal gestation period for a dairy cow, according to data collected at the Missouri Agricultural Experiment Station, is, on the average, 280 days, with extremes of 264 to 298 days. Table 1 gives the

TABLE 1—CATTLE BREEDER'S CALENDAR (280 DAYS)

| Bred | Due | Bred | Due | Bred | Due | Bred | Due | Bred | Due | Bred | Due | Bred | Due | Bred | Due | Bred | Due | Bred | Due | Bred | Due | Bred | Due |
|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|--------|--------|--------|--------|--------|-------|---------|--------|--------|--------|--------|--------|--------|---------|
| Jan. 1 | Oct. 7 | Feb. 1 | Nov. 7 | Mar. 1 | Dec. 5 | Apr. 1 | Jan. 5 | May 1 | Feb. 4 | June 1 | Mar. 7 | July 1 | Apr. 6 | Aug. 1 | May 7 | Sept. 1 | June 7 | Oct. 1 | July 7 | Nov. 1 | Aug. 7 | Dec. 1 | Sept. 6 |
| 2 | 8 | 2 | 8 | 2 | 6 | 2 | 6 | 2 | 5 | 2 | 8 | 2 | 7 | 2 | 8 | 2 | 8 | 2 | 8 | 2 | 8 | 2 | 7 |
| 3 | 9 | 3 | 9 | 3 | 7 | 3 | 7 | 3 | 6 | 3 | 9 | 3 | 8 | 3 | 9 | 3 | 9 | 3 | 9 | 3 | 9 | 3 | 8 |
| 4 | 10 | 4 | 10 | 4 | 8 | 4 | 8 | 4 | 7 | 4 | 10 | 4 | 9 | 4 | 10 | 4 | 10 | 4 | 10 | 4 | 10 | 4 | 9 |
| 5 | 11 | 5 | 11 | 5 | 9 | 5 | 9 | 5 | 8 | 5 | 11 | 5 | 10 | 5 | 11 | 5 | 11 | 5 | 11 | 5 | 11 | 5 | 10 |
| 6 | 12 | 6 | 12 | 6 | 10 | 6 | 10 | 6 | 9 | 6 | 12 | 6 | 11 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 11 |
| 7 | 13 | 7 | 13 | 7 | 11 | 7 | 11 | 7 | 10 | 7 | 13 | 7 | 12 | 7 | 13 | 7 | 13 | 7 | 13 | 7 | 13 | 7 | 12 |
| 8 | 14 | 8 | 14 | 8 | 12 | 8 | 12 | 8 | 11 | 8 | 14 | 8 | 13 | 8 | 14 | 8 | 14 | 8 | 14 | 8 | 14 | 8 | 13 |
| 9 | 15 | 9 | 15 | 9 | 13 | 9 | 13 | 9 | 12 | 9 | 15 | 9 | 14 | 9 | 15 | 9 | 15 | 9 | 15 | 9 | 15 | 9 | 14 |
| 10 | 16 | 10 | 16 | 10 | 14 | 10 | 14 | 10 | 13 | 10 | 16 | 10 | 15 | 10 | 16 | 10 | 16 | 10 | 16 | 10 | 16 | 10 | 15 |
| 11 | 17 | 11 | 17 | 11 | 15 | 11 | 15 | 11 | 14 | 11 | 17 | 11 | 16 | 11 | 17 | 11 | 17 | 11 | 17 | 11 | 17 | 11 | 16 |
| 12 | 18 | 12 | 18 | 12 | 16 | 12 | 16 | 12 | 15 | 12 | 18 | 12 | 17 | 12 | 18 | 12 | 18 | 12 | 18 | 12 | 18 | 12 | 17 |
| 13 | 19 | 13 | 19 | 13 | 17 | 13 | 17 | 13 | 16 | 13 | 19 | 13 | 18 | 13 | 19 | 13 | 19 | 13 | 19 | 13 | 19 | 13 | 18 |
| 14 | 20 | 14 | 20 | 14 | 18 | 14 | 18 | 14 | 17 | 14 | 20 | 14 | 19 | 14 | 20 | 14 | 20 | 14 | 20 | 14 | 20 | 14 | 19 |
| 15 | 21 | 15 | 21 | 15 | 19 | 15 | 19 | 15 | 18 | 15 | 21 | 15 | 20 | 15 | 21 | 15 | 21 | 15 | 21 | 15 | 21 | 15 | 20 |
| 16 | 22 | 16 | 22 | 16 | 20 | 16 | 20 | 16 | 19 | 16 | 22 | 16 | 21 | 16 | 22 | 16 | 22 | 16 | 22 | 16 | 22 | 16 | 21 |
| 17 | 23 | 17 | 23 | 17 | 21 | 17 | 21 | 17 | 20 | 17 | 23 | 17 | 22 | 17 | 23 | 17 | 23 | 17 | 23 | 17 | 23 | 17 | 22 |
| 18 | 24 | 18 | 24 | 18 | 22 | 18 | 22 | 18 | 21 | 18 | 24 | 18 | 23 | 18 | 24 | 18 | 24 | 18 | 24 | 18 | 24 | 18 | 23 |
| 19 | 25 | 19 | 25 | 19 | 23 | 19 | 23 | 19 | 22 | 19 | 25 | 19 | 24 | 19 | 25 | 19 | 25 | 19 | 25 | 19 | 25 | 19 | 24 |
| 20 | 26 | 20 | 26 | 20 | 24 | 20 | 24 | 20 | 23 | 20 | 26 | 20 | 25 | 20 | 26 | 20 | 26 | 20 | 26 | 20 | 26 | 20 | 25 |
| 21 | 27 | 21 | 27 | 21 | 25 | 21 | 25 | 21 | 24 | 21 | 27 | 21 | 26 | 21 | 27 | 21 | 27 | 21 | 27 | 21 | 27 | 21 | 26 |
| 22 | 28 | 22 | 28 | 22 | 26 | 22 | 26 | 22 | 25 | 22 | 28 | 22 | 27 | 22 | 28 | 22 | 28 | 22 | 28 | 22 | 28 | 22 | 27 |
| 23 | 29 | 23 | 29 | 23 | 27 | 23 | 27 | 23 | 26 | 23 | 29 | 23 | 28 | 23 | 29 | 23 | 29 | 23 | 29 | 23 | 29 | 23 | 28 |
| 24 | 30 | 24 | 30 | 24 | 28 | 24 | 28 | 24 | 27 | 24 | 30 | 24 | 29 | 24 | 30 | 24 | 30 | 24 | 30 | 24 | 30 | 24 | 29 |
| 25 | 31 | 25 | Dec. 1 | 25 | 29 | 25 | 29 | 25 | 28 | 25 | 31 | 25 | 30 | 25 | 31 | 25 | July 1 | 25 | 31 | 25 | 31 | 25 | 30 |
| 26 | Nov. 1 | 26 | 2 | 26 | 30 | 26 | 30 | 26 | 29 | 26 | Mar. 1 | 26 | 1 | 26 | 1 | 26 | 1 | 26 | 2 | 26 | 1 | 26 | 1 |
| 27 | 2 | 27 | 3 | 27 | 31 | 27 | 31 | 27 | 2 | 27 | 2 | 27 | 2 | 27 | 2 | 27 | 2 | 27 | 3 | 27 | 2 | 27 | 2 |
| 28 | 3 | 28 | 4 | 28 | Jan. 1 | 28 | 1 | 28 | 3 | 28 | 3 | 28 | 3 | 28 | 3 | 28 | 4 | 28 | 3 | 28 | 3 | 28 | 3 |
| 29 | 4 | 29 | 5 | 29 | 2 | 29 | 2 | 29 | 4 | 29 | 4 | 29 | 4 | 29 | 4 | 29 | 5 | 29 | 4 | 29 | 4 | 29 | 4 |
| 30 | 5 | | | 30 | 3 | 30 | 3 | 30 | 5 | 30 | 5 | 30 | 5 | 30 | 5 | 30 | 6 | 30 | 5 | 30 | 5 | 30 | 5 |
| 31 | 6 | | | 31 | 4 | | | 31 | 6 | | | 31 | 6 | | | | | 31 | 6 | | | 31 | 6 |

normal gestation dates for dairy cows, and is useful in forecasting calving dates.

SERVICE RECORDS

A permanent record should be made of each and every service of a herd sire. Such records are valuable for forecasting the calving dates of the cows bred, as a general index to the service efficiency of the sire and the general health of the herd. If the majority of cows must be rebred frequently, it may be an indication that the sire is not virile, or on the other hand, it may indicate that the cows are the source of the trouble. An examination by a competent veterinarian will usually reveal the true situation.

Name of Bull _____

| <i>Year</i> | <i>Name or number of cow</i> | <i>Date cow was bred</i> | <i>Date due to foal</i> | <i>Calf dropped</i> | <i>Name or number</i> | <i>Sex of calf</i> | <i>Disposal</i> |
|-------------|------------------------------|--------------------------|-------------------------|---------------------|-----------------------|--------------------|-----------------|
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Fig. 6.—A convenient service record.

Service records may be kept in a number of forms. Figure 6 is an illustration of a form that can be adopted for each sire in the herd, and gives a complete record of useful data about the sire. Complete individual lifetime breeding records should be kept on each cow in the herd.