

characteristics of the cow are united into one, and may be termed milk, thus simplifying the question very materially. In the same manner, in countries where the hygienic intelligence of the people is developed, the standard for beef is the animal which produces the most muscular tissue of the best quality; thus the problem becomes double simplified. Formerly in our own country, and still in many other countries, the capacity of the animal for work was an important factor in the varied characteristics of the general purpose cow, and this quality cannot yet be ignored in discussing the question from a universal standpoint.

Now therefore the general purpose beast, in the widest sense of the term, must be profitable in all the following essentials: It must lay on a huge batch of tallow when fed for the Xmas fat stock show, and when fed for family consumption, it must lay on an abundance of muscular tissue, deliciously interspersed with fat cells. It must put on profitable layers of young beef during old age. It must give immense quantities of milk of poor quality, when the milk is delivered at cheese factories, or is consumed by the inhabitants of towns and cities, and when the milk inspector comes round, or when the milk is paid for according to quality, as in Europe, the milk must suddenly change into that of a first-class quality. When the milk is delivered at the cheese-factory, it must make large percentages of cheese, and when delivered at the creamery, it must make large percentages of golden butter; in other words, the cow must let down milk rich in casein for the cheese-factory, and milk rich in butter-fat for the creamery. She must convert all her food, and most of her flesh and bones, into milk during the milking season, and after a while, she must convert all her food and milk into tallow. If she is to be sold to the city dairyman, she is called upon to convert half of her food into milk and the other half into flesh or blubber, to be fit for the block when the snow begins to fall. When the plowing time arrives, the poor creature is asked to convert her food, milk, and tallow into plow-force. If the fertilizer man is the highest bidder, she is to convert her food into bone, horn, hoof, flesh, blood, hair, &c., for fertilizing material of the highest chemical analysis; and above all, if her natural destiny is in the hands of the theoretic soil restorer, she must convert her food, bone, muscle, milk, hide, &c., into a manure heap.

After all these recommendations and qualifications on behalf of our general purpose cow, some people still maintain that our farmers are poor. Seriously, it is time that some experimenting was done in this line of investigation. Authenticated proofs of material value there are few or none, but the general purpose theorists have the worst of the arguments. Given that milk and beef standards are once established, we have then only to deal with the beefing and milking qualities of the general purpose cow, and it is contended that such an animal may profitably exist. There are two phases to this question: (1) The animal or breed that produces milk and beef from the same food and at the same time; (2) the animal or breed that produces milk during the milking season, and can lay on beef readily and profitably after the milking season is over, possibly also at an old age. The Shorthorn is taken as an apt illustration of the principles upon which the general purpose cow may be defended; but the arguments are

fallacious. It may be quite true that a certain Shorthorn cow gives *as much* milk as that of any other breed, and may give a more profitable carcass afterwards, but this is not what the farmer wants to know. He asks, How much milk would the Shorthorn give if the breed were converted into milkers exclusively? Certainly *much more* milk than any other breed, and it is quite probable that this extra quantity may more than pay for the whole carcass. This question cannot be decided without considering the quantity and quality of the food consumed. It is unreasonable to compare a heavy Shorthorn with a light dairy breed, and it is well known that, as an approximate rule, animals consume in proportion to their weight.

With reference to the other phase of the question, viz., the profitable production of beef and milk at intervals, there is no scope for argument. A cow that is a special milker in summer and a special beefier in winter is to be classed as two separate breeds, and may be treated as such in every respect. However, the existence of these two divergent qualities requires proof, and from a physiological standpoint is an impossibility. No animal can be changed from the vital to the nervous temperament, and so long as nature prohibits such a metamorphosis, the height of perfection cannot be attained in both the beefing and the milking qualities of the same animal.

Hairy Legged Horses.

Judging from the prevailing fashion amongst some of our cart horse breeders, it would almost seem as if hairy legs or feather were sought after as indicative of weight and strength of bone, says a correspondent of the Farmers' Gazette. This, it will presently be seen, does not necessarily follow. Size of bone is very desirable in a heavy draught horse, but the quality of the same is of far greater moment than the quantity. That thickness of bone does not denote strength can be proved by comparing the small bones of the thorough-bred with those of the ordinary cart horse. The amount of strain which the bone can stand depends far less on its size than on its texture. It is also well to remember that development of the tendons and ligaments of the leg is subject to the construction of the bone, and whether it be flat or round, of good or bad quality. A broad, flat cannon bone is usually associated with muscles freely co-operating with the other aids to locomotion and power, and is less liable to suffer from ligamentous and joint lesions than a round cannon bone, the latter also a prolific source of contracted and deformed limbs.

The object of nearly every breeder of Clydesdale and Shire horses seems to be to secure a superabundant growth of hair on the lower parts of the limbs; but for what purpose has not yet been explained. The tastes of the early breeders would appear to have tended in this direction, until, doubtless, plenty of rough hair came to be considered indispensable. It is well, however, to inquire into the uses of such an appendage. There are, perhaps, many people who regard feather on the legs as an essential of beauty as well as of constitution in the draught horse. And we cannot deny that the appearance of a heavy, strong-boned draught horse is considerably improved by a fringe of hair on the legs; but this may only be a fancy we have acquired from long looking at that type. Breeders of the clean-legged Suffolk cart horse would at any rate say so. It would be difficult to name a single ad-

vantage in favor of long hair on our horses' legs, whereas the disadvantages of it are manifest. We must take the horse as we find him, toiling on the road or in the field, it may be in mud or in wet, and then ask ourselves whether the clean legged or the hairy-legged horse has the advantage. There is no need to recount the inconvenience of feather on such occasions, besides its evil effects in harboring dirt and scurf, and predisposing to irritation and sloughs on the pasterns and coronets.

The external influences of a profuse growth of hair on the legs are all bad, but they do not compare with those almost invariably present in its production. We cannot explain this more tersely or on better authority than to quote Professor Walley on the point. He says:—"A profusion of hair pre-supposes a coarse skin, and a coarse skin means a corresponding decrease in vitality, and consequently a greater liability to diseases such as grease, thick legs, and cracked heels. It further means a more highly lymphatic constitution, and, as a consequence, a greater tendency to such affections as 'weed.'"

That these diseases and affections are, then, the result of hair nobody can deny, and such being the case, it does seem strange that the patrons of the Clydesdale and Shire horses should go in so much for "feather." It is only a mistaken fancy, the same as color craze or something of that sort, and it would be better if breeders would disregard it altogether. Of course, fashion spreads wide, and even to foreign lands, but although some American buyers may still ask and pay for good feather on the Clydesdale and Shire horses they buy, we know from experience that on the farm, as a rule, they clip off all superfluous hair on the legs of their horses. In the winter the hair sometimes "balls" so with snow that the horses are not able to put one foot past another, and they are equally handicapped in deep mud. Many of the Americans prefer the bare-legged Suffolk or Percheron to the Clyde or Shire for this reason, so that while the home trade may still demand rough legs, a good deal of the foreign is lost through this cause.

In some of our show-yards, even, the judges pay so much attention to feather on the legs that they at times forget the horse in looking after the hair. A nice fringe, they tell us, is very becoming on a Clydesdale; but then in the majority of the cases it is overdone, and undue importance is attached to a full feather or the want of it. Indeed, a Clydesdale or Shire horse, however good it may be otherwise, has little chance in a show-ring if he is bare of hair; but there is one advantage attending this feature of the show-yard—it prevents over-feeding, which is generally attended by a casting of feather and a dreaded baldness of the legs.

Regarding the utility of heavy feathered or hairy-legged horses, let us hear what the great contractors and railway companies, who each employ hundreds of the heaviest class of van horses, have to say on the subject. Mr. Oakley, the general manager of the Great Northern Railway Company, London, says:—"For railway work, horses with long hair on their legs are very unsuitable, and we avoid purchasing them as much as possible. We find the long hair very difficult to cleanse effectually; and if carelessly done, the hair mats at the roots, and, in the opinion of our 'master of the horse,' provokes grease and other inconveniences. We have in London about 1,100 horses." Mr. Newcombe, of the Midland Railway Company, expresses himself as follows:—