suited. Then they should be fed liberally, even if a little food has to be purchased before spring. There is no economy in stinting animals. The grain portion of a ration should be mixed in large quantities to save weighing so often. The hay and other coarse fodder can be weighed a few times, and then any man with good judgment can guess near enough for all practical purposes. There will be less waste if the corn-stalks and straw are cut up than if they are fed whole. It is usually best, in figuring up a ration, to begin with the coarse fodder as a basis, and add the concentrated foods until the proper ratio is reached.

If A will feed his stock after the above plan, it is quite certain that they will be wintered cheaper and come out in better condition next spring than if he goes about it with no system, simply feeding his animals what they will eat without any reference to the elements it contains.

Summer Feeding of Stock.

BY W. A. COWIE, VALENS, ONT.

As circumstances compel us to turn our attention more and more to stock feeding or dairying, the question of a supply of summer food confronts us, especially when, as during the past summer, an extended drought adds to the natural difficulties.

We all know only too well what large breadths of pasture must be reserved for milch cows or young stock, through our inability to ascertain whether the season will or will not be favorable to a luxuriant growth, and in any case July and August generally bring even the most approved permanent pasture to such maturity that from lack of succulent properties diminished yields of milk inevitably result; while, even after this time, with our hot, dry, midsummer weather, common pastures rarely yield a remunerative return until late in the autumn. Under such conditions is it to be wondered at that many progressive farmers are beginning to wonder if grass pastures, except in limited areas, are not the most expensive food supplies provided for our stock, and are looking about for some cheaper and more reliable substance? Especially is this case, as year by year the wisdom of depending upon stock rather than upon grain products for sale is brought home to us, as we gradually realize that it is much more profitable to feed our *entire* grain product rather than to sell it. When we find that with a largely increased grain ration our supply of hay and straw will feed double the number of cattle it formerly did, with ensilage a tried and valued factor of the supply, and that in order to consume the increased stores we must winter more stock, with warm stables still further conserving the ration to a marked extent, we are forced to the point when the profitable summer rather than the winter's food becomes a source of anxiety, and yet how rarely do we make any preparation for ensuring such supplies. The system of soiling has many advantages, but it has one crowning disadvantage—the increased labor it entails of the carriage of the food to the stable, and that, too, when every energy is being strained to accomplish the summer's work.

The average Canadian farmer is very conservative, and to urge upon us to grow *special* crops other than grass for summer pasture is very apt to be disregarded.

Schemes such as that of "Rye and Rape" look well upon paper, but when the rank and file of Canadian farmers are found missing one year's staple crop to grow rye and rape for pasture, even with the self-evident advantage of cleaning the ground of foul weeds—well, we will be somewhat older than at present.

Catch crops which will not interfere with our established system of rotation, and with almost equal facilities of getting rid of weed pests, may succeed as an entering wedge, by means of which many of the Utopian schemes so urgently pressed upon us may be given a fair trial in the near future.

Although red clover can not be considered as a catch crop, yet it may be made to serve as a valued link in the system of summer feeding here proposed. If a field be seeded down moderately thickly with clover, to be plowed under, in addition to its value as a manure it may be made to furnish a large amount of pasture, if judiciously fed, during two to three weeks of June without interfering but little with its value as a green manure. Pasture it as soon as it fairly commences to blossom, and plow under about the last of June, harrow until a fine seed bed is obtained; then sow thickly with oats or barley and Hungarian or millet, and this may again be pastured until about 25th of August, when it should be plowed under. Apply from seven to ten loads of manure per acre, and when wheat is sown, a top-dressing of fifty to one hundred pounds of commercial fertilizer (bone or potash). Under such a treatment the land will rapidly gain in fertility, weeds will disappear as quickly as under any other method, and a valuable increase and change of food may be added to the menu of the milch cows.

The increase of milk and thriftiness will more than repay for the labor expended upon the fallow. When the wheat crop has been removed from a field treated as above, no matter how filthy with weeds it may have been, we will find a comparatively clean stubble; but if it lie until late autumn before plowing, numerous weeds will have succeeded in their mission of seeding down large areas. If, on the other hand, immediately after the field is cleared, we use the two-furrow gang plow, or even the spring tooth cultivator, with three horses attached, we can prepare for a catch crop of barley or oats with millet sown thickly, which during the latter part of September may be pastured off, when it will frequently be eight to twelve inches high. If the field has been unusually bad with weeds for years, we might use rye sown thickly, instead of the above mixture, which would furnish late fall and early spring feed until time to prepare the ground for ensilage, corn and roots.

Barley fields may be similarly treated. It is often urged that there is no time to prepare fields as above at the proper time, but the farmer who tries it for one year will devise ways and means afterwards by means of which it can be accomplished.

Oat fields may be sown with rape, which will furnish the sheep a welcome change in late autumn, and the plowing under of this may be delayed until all the other fall plowing is accomplished.

The bare fallow system should be relegated to its proper place, and instead of plowing or replowing four or five times after the sod field is turned over in early spring, sow with some mixture that will provide succulent food for the cows and other stock until time to prepare for wheat. It should also be urged strongly upon our farmers the advisability of providing ensilage for any breaks in the above system; if any are sceptical about ensilage being eaten in summer, it is because they have never tried it, or that the ensilage was improperly treated in the putting up.

With some such system modified to suit each farmer's individual requirements, a supply of food is obtained that will not only dispense with two-thirds of the pasture lands usually kept, but will increase by at least one-half the yields obtained by the old method. Such pastures might be made to produce grain instead, but if the grain product is not fed entirely upon the farm, it will only hasten the starvation process which is rapidly impoverishing many farms to-day.

If, however, we are not only endeavoring to increase our live stock, but our grain products as well to feed the former with, as year by year goes by witnessing an improvement in each department, an enthusiasm, a love for our profession is kindled that the era of low prices now inaugurated can not depress.

Report of Secretary S. E. Prather,

At meeting of American Southdown Breeders' Association, held at World's Columbian Exposition, Chicago, Ill., Sept. 27, 1893.

The American Southdown Breeders' Association was organized at a meeting of the breeders of this popular mutton breed of sheep that was held in Springfield, Illinois, May 1, 1882. The object for which the organization was formed was "The collection, revision, preservation and publication of the history and pedigrees of pure-bred Southdown sheep."

On June 23, 1882, the organization was incorporated under the laws of the State of Illinois as the American Southdown Breeders' Association. A constitution and rules of entry were adopted, and a co-operation of all feeling an interest in maintaining the purity of these sheep was solicited.

The leading breeders of Southdowns in America early accepted the invitation of the Association, and promptly gave to it encouragement by becoming members thereof, or by recording their flocks.

When it is remembered that for the purpose of making the registry of individual sheep, male and female alike, the whole system of breeding then in general use had to be changed, it is not strange that some breeders failed to see that the benefits to be derived would outbalance the extra trouble and care that would be required. The usefulness of such registry was, however, early acknowledged by breeders who had large flocks of the very best type of these sheep, and who, like General C. M. Clay, of Kentucky, the oldest living breeder, realized that this effort was for the best interests of the breed. At the present time almost every American breeder of repute is using the American Southdown record for the registry of their flocks. This work will not, however, be entirely satisfactory until every reputable breeder of Southdowns in this country has allied himself with this Association, and is using his efforts for the advancement of the interests it represents.

The matter of practicability of the registry of ewes as well as of rams has been so successfully demonstrated by breeders in America, and the desirability of the registry of all breeding animals is so apparent, that this Association will not seem to be asking too much if it insists that Southdown sheep, imported from England, shall for legibility in our record be recorded in the flock book of that country or shall comply with the same rules required for the registry of American-bred animals. The special premiums—a set of the volumes of the American Southdown Record—offered at State Fairs, in 1893, have accomplished good, and it would seem that a similar offering should be made for 1894.

Animals now entered for Volume V. of the Record number 1,000.

Since our meeting in May last the names of Thomas P. Hamilton, Mexico, Mo., Robt. Marsh & Sons, Richmond Hill, Ontario, Can., Bickford & Hoit, Dicksmont Center, Me., and A. P. Booth, Hematite, Mo., have been entered on our roll of members.

The breed of sheep in which we are interested is increasing in public favor; it remains for us as an Association, and as individuals, to push the claims of this incomparable mutton breed by every consistent means.

An Essay on Horse Breeding.

BY JOHN DUFF, ROCKWOOD, ONT.

In opening the subject for discussion at this time, I do not intend going any further into the history of the different breeds of horses than may closely pertain to the subject in hand. In opening the discussion we had better first consider what kind of horses is likely to be the most suitable to our purpose as farmers, and in what way we may best succeed in obtaining such. I am of the opinion that the most of us will agree in favor of the agricultural or general purpose horse as the most suitable for all farming purposes. A difference of opinion, however, may arise as to what constitutes a general purpose horse, as some may think that a horse that will weigh from nine to ten hundredweight is a general purpose horse. Now, my own opinion is that we require a horse that will weigh from twelve to fourteen hundredweight, with good action, compactness, strength of constitution, well sprung ribs, and large, flat bones. A horse of such weight and other qualities as I have just named will be able to draw a plow or wagon with the greatest ease, and trot six or seven miles an hour.

As we are now surrounded with railroads, and can get a market for all our produce within a few miles, we do not require horses to go as fast as when the country was new and markets a long distance off. Then again, as our soil is becoming worn out, and deeper and better cultivation will be found necessary, heavier horses must be employed. I may say to those who think a lighter and faster class of horses more suitable for our purpose, that whenever we attempt to add to the general purpose horse those qualities which make him serviceable on the road, except to a heavy load, we detract from his utility as a farm horse. If we are to aim at perfection in the farm horse, let us cease trying to engraft upon him those qualities that destroy his value on the farm. Speed goes with the form of the greyhound order—tall, long and slender, but these are the qualities we do not want in a farm horse. It seems to be essential that there should be two or three distinct breeds of horses, each bred with a special reference to its particular work. If we want to breed such horses as at present command the highest prices in the market, we should breed heavy draft and a certain style of coach horses; but if to obtain the requisite qualities for a general purpose horse, I see no need of going beyond the two breeds—the English and the Clydesdale draft horses, for I think the effect of crossing upon any other stock would only produce the qualities we do not want. I have now come to the second part of the discussion. I may ask, by what means or from what class of horses can we obtain a general purpose or agricultural horse? Stonehenge, one of the best authorities on this subject, says that "most farmers who are particular about their horses use either the pure Suffolk or Clydesdale stallion for