out a good supply of corn ensilage sufficient to carry cows through two hundred days of stall feeding, or from the last day of October till the first day of June, all hope of work on summer stall feeding had better be abandoned. As so much has been said and written for and against ensilage of late years, it may be well to notice briefly the causes of failures and the conditions which influence the relative values of the corn ensilage. As I tried to point out in the March number, there is a great difference between the silo and the ensilage of four to eight years ago, as compared with that produced by the best experience of to-day. As in all other departments of farm work, the difference consists in the varying degrees of intelligence and prejudice with which men set out at the beginning of their experiments with this crop. Just as there is a wide difference in food value and flavor between straw fed beef and that ripened off on grain, cake and roots or ensilage, or between the razor backed hog of two or three years, and the barley, peas, oats and clover hog made in two hundred days, or between the straw fed butter or anything else, and the butter made from cows fed clover, corn ensilage, bran, oats and peas, with a dust of oil meal or cotton seed meal; so there is a vast difference in the amount and value of food produced from an acre of ensilage corn according to the method of seeding, the kind of seed used, the mode of cultivating it, the time required to grow it, the condition of the plant when cut, and the amount of water it contains when put into the silo. In the early history of the silo, some men used any corn they could reach, sowed it thick as wheat and cut it as they would cut a cereal. The product was, in the majority of cases, a rank, watery, miniature crop of low nutritive value. With such miniature growths it would be impossible to obtain sound, healthy ensilage. Close planting, even with the proper seed, will not give the same weight of dry matter per acre, nor will the dry matter be as valuable for feeding pound for pound, as that obtained from mature stacks fully developed in the wide rows of forty two inches, and planted two grains to the foot. The men who started out ten years ago to cultivate the system have accumulated the greatest number of reliable facts. Among these were college professors and directors of experimental stations who were willing to acknowledge failure when the results were not what they anticipated, but they never abandoned their investigations, continuing to grow the crops year after year. Each season brought new facts and stronger light, and while these scientists were digging out the truth and analyzing their failures, commercial farmers in the various dairy districts held to their faith, grew rich on ensilage, and brought their experience to public meetings for biased and hostile pro fessors to explain. For a year or two, well known college men all over the land opposed, discouraged and condemned ensilage as " saurkraut," and appeal ed to their chemistry and physiology to support their untenable position. The whole trouble arose from an incomplete study of the facts of their experience, for, had they been less hasty in arriving at conclusions based on a 40 or 50 per cent. interpretation of the facts, they would not have demonstrated so completely their inability to guide and instruct those whose successes first confounded and then converted them. Because we cannot always understand the facts at short notice is surely no reason for treating them as value-

less. Happily some of these men are doing good work to-day as advocates of ensilage feeding, and not a few of those who were a year ago coldly neutral and half indifferent, are to-day using the ensilage corn growers.

The true physiology and chemistry of the whole

matter lies in the fact that ensilage or fodder corn, like all plants cultivated for their stalks, should be cut just when maturity is reached and not before, or when the seed is fully ripe. This may perhaps be best illustrated in tabular form. While visiting the Massachusetts State agricultural experiment station at Amherst, the courtesy of Dr. Gaessmann, the director, afforded the opportunity of discussing the whole question of fodders. For several years they have carefully determined the weight of dry matter per acre of the fodder corn crop at different stages of growth and the relative wood values, with the following results :

AT FIRST APPRARANCE OF TASSELS.		AT BEGINNING OF GLAZ- ING OF KERNELS.	
100	100	100	100

Not only did the latter corn give double the dry matter, but cut in this condition it contained more starch, sugar, gum and nitrogenous matter. It will be readily seen that if mature corn be allowed to wilt after it is cut down for about twenty-four hours, in a steady breeze, about 20 per cent. or more of its water will evaporate, and still further concentrate the solids. Twenty-one tons per acre would be 42,000 lbs., or on a basis of 30 per cent. of moisture, 12,500 lbs. dry matter. Thirty and thirty-five tons are not uncommon to old growers. In hay, if we get 4000 lbs., having 3,400 lbs. of dry matter, we do well. Some old breeders tell us that two tons of corn ensilage are equal to one of hay, and others, that 21/2 and 3 tons. We must therefore acknowledge that according to the oldest and best experience we have in corn ensilage 3½ to 5 times the food value that we get in hay per acre, or just double the yields of food from fodder corn per acre that we get from roots on a basis of 30 per cent. of dry matter in corn, and 15 per cent. in roots, and equal weights per acre, although roots have a slight advantage of about 3 or 4 per cent. in feeding value, weight for weight, of dry matter. I want to cite the experience of some New Yorkers and western men, who crop ensilage corn and dry it down to 38 per cent. of solids, when it goes into the silo.

Whichever way we look at this vast subject we cannot help seeing an immense economy in it. Nothing resists drought like it. I am not one of those who think corn ensilage will entirely displace roots, but I cannot help thinking it must form the principal ingredient in a fodder ration-it is at least 60 per cent. cheaper than roots-and that it will be used at the rate of 25 to 30 lbs. per day, with a small allowance of clover and roots and enough grain to make a suitable nutritive ratio. I have always urged the use of various rather than few feeding materials, as giving greater variety of flavor and a fuller enjoyment of food and therefore greater activity and efficiency to the digestive organs. The actual food value of ensilage cannot at present be understood from the standpoint of a naked chemical analysis of its dry matter constituents. There is a physiological action on all the other materials forming part of the ration in which ensilage is the largest ingredient which we cannot yet bring into the test tube or place in a balance, but the standard of the bullock, cow, hen or pig can measure it in beef, milk, eggs or pork.

The Herd Book Controversy.

EDITOR CANADIAN LIVE-STOCK AND FARM JOURNAL.

SIR,—I and in your June number letters from Mr. McCormick, president, and Mr. Wade, secretary, of the Dominion Ayrshire Breeders' Association, containing malicious insinuations and statements as incorrect as they are unjust, evidently intended to mislead your readers to the prejudice of others, regardless of truthful and proper explanations of business they

have been party to. Too often men holding such sentiments lose their tempers and commit themselves to irregularities when they find they are discovered in their erroneous methods of transacting matters of public interest.

In my desire to faithfully discharge the duty assigned to me for the supervision of work for revising errors in Ayrshire herd records, I necessarily required them to make right what was wrong in their work and reports, and thus incurred unfair displeasure. Twice I had to require Mr. Wade to correct errors in his minutes of our meetings. I had to require him to abandon the practice of patching up pedigrees in his own way, instead of making a thorough investigation of facts concerning the breeding. I sent you one of several pedigrees in my possession, where the erron-cous alterations and additions were in his handwriting. In some cases I received two or three different versions of the same pedigrees in the endeavor to get me to pass them. I have been told I should pass a cow and her produce, said to be 15 heifer calves, and also 3 bull calves. Her first calf was dropped in December, 1858; her last calf in May, 1873. She had no twins; twice there was a year and a half between her calves, therefore, she could only have had 11, not 18. I mention this and could show several other errors of entries in Mr. Wright's books, quoted by Mr. Wade, while he should know the errors were made in writing up the books from memorandums long after the dates therein. Mr. Wade took improper liberties in his language

as well as in his acts, when, among other things, he did, without authority, use part of the members' fees to pay his travelling expenses, while we paid our own, and only knew it from accounts he gave at the annual meeting. Twice he expressed regret and asked to be excused for improper, unguarded remarks at meetings. These things, with Mr. McCormick's rudeness of Twice he expressed regret and asked to be speech in pressing to nave improper pedigrees adopted, made it extremely difficult to get anything properly done at committee meetings with them. During the eight months' work they only rejected one bad pedi-During aree-Queen 125, D.H.B., and ordered the accept-ance of two mixed breeds, bred by Mr. Ross, owned by Mr. Denison, and falsely stated in their book to have been from Mr. Dod's importation. Mr. McCormick went so far as to get a widow woman to make oath to a certain cow being the dam of certain others, he thinking I would accept that without examination, which, on being taken, resulted in their acknowledging their error. In addition to these difficulties to be on guard against they put on the committee other two, who were interested in animals having bad pedigrees. Therefore, it is not surprising that men of experience and good standing, long on our committee, should be disgusted, lose confidence in the parties, leave the meeting, not go to one in Kingston, refuse office, and finally desire to be relieved from connection with those who would not follow rules of order, were deficient in experience and whose whole aim seemed to be to get in their bad pedigrees by ignoring even their own profession to be aiming at importations.

I regret to be forced in self-defence to mention these things, as I could many others, to show their animus and object in the course taken by these your two correspondents, who so blindly attempt to claim that their pedigrees were purposely kept back, in the face of the fact that we entered over 300 pedigrees, for which we were not paid, to make good 70 of theirs that mostly (but for the trouble I took in searching and correspondence), could not have passed. Mr. McCormick had some of them and the copy I sent you was one his traced to. Mr. Wade had erroneously patched it up. Mr. Wade and Mr. McCormick must admit this, and cannot deny that when they sent good pedigrees they were promptly entered and returned, and that all fees were credited and disbursed as agreed for expense of work done per accounts rendered.

From the foregoing you will have some idea of the troublesome task it was to be thus occupied. I have no intention now of occupying valuable time and space to the extent needed in this number, and I will not condescend to notice in detail the contemptible part of their erroneous language.

Mr. McCornick writes 15 statements, 10 of which are incorrect fabrications of his personal opinions and misconstructions, and the other five are wilful misrepresentations of occurrences, meetings and resolutions, which he either does not understand or did not want to allow to take effect. Let me advise him to have the minutes carefully read and explained to him, then