mink feeds largely on marsh birds, and is also an active depredator in the poultry-yard. When in them, naturalists discover virtues enough to over-balance such tricks, mercy will become our duty, though what contributes to warmth and comfort can ever take precedence of that which is decorative only. There are numerous substitutes for birds in millinery. Silk pommpons and ostrich plumes are graceful. Ostriches are carefully and tenderly reared. Their plucking is probably no more painful than the shoeing of a horse. The beautiful feather bands, manufactured from poultry down, involve no additional loss of life, but utilize another product of creatures destined for food.

To save and restore our birds, concert of action is needed. They will be relieved from long flights under a midday sun, if some trees are left when clearing land, and others set along streets and line fences. The chokecherry and black cherry are especially beloved. Wild animals go with the soil. A farmer can claim as his property, the birds nesting on his trees, and obtain legal redress from hunters who, without permission, start and catch, within his domain, other game than noxious beasts of prey, like wolves and foxes. At least Iowa, New York, and New Jersey have new and special laws for bird protection. More stringent regulations are proposed in Wisconsin. A list, distinguishing valuable from injurious birds, is conspicuously posted in each French commune, as a guide to sportsmen, and the rudiments of zoology are required taught by her primary schools. Parents and instructors everywhere have a duty and an opportunity to educate children in gentleness and refinement. The American press is doing a gratuitous and noble work for birds. The Anti-Plumage League of London, and Audubon Society, in New York are active. Branch organizations are multiplying, a recent addition to their number being at Des Moines, and headed by the governor's wife. Queen Victoria, Princess Christian and Lady Mount Temple frown upon the use of bird plumage. On woman, indeed, as chief cause of bird destruction, rests the duty of righting this wrong. As long as demand continues for bird wings, law will be evaded, and supplies will come. Only fashion's disapproval can save our birds.

As the same poetess entreats—

"O sisters, let our protest ring
Through all the saddened, songless land,
Lest He who notes the sparrow's fall
Shall ask the slain birds at our hands."

Progress in Agriculture.
[By A. Barkhausen, Theinville.]

Most of us that are assembled here to-day, I presume are aware of and familiar with the aim and object of this present gathering, yet I may be allowed to add a few words for explanation, in order to preclude any possible high expectations, to fulfill which was originally never intended.

For several years past movements have been afoot in this state to secure to young, incipient and inexperienced farmers a better agricultural education. In the last legislature our law makers could not come to an agreement on this point, yet they felt that they had to do something for us farmers, and appropriated a sum of money, for the purpose of holding a number of farmers' meetings in the state (these so-called Farmers' Institute), the expenses of which are to be covered by the sum appropriated.

Already more than forty years ago, similar agricultural meetings were called into life by the governments of some countries in Europe; they however were by no means considered and calculated to serve as substitutes for institutions of learning, in which young farmers are to be trained and educated; but some competent person, well versed in higher agriculture (called also an agricultural missionary) was sent to various parts of the state, for the purpose of holding discussions and consultations on such topics in which the farmers of that special locality needed enlightenment and instruction. A great deal of benefit to those farmers has been derived from such meetings. Now it cannot be denied, that for our young, inexperienced farmers the instructive influence of our Farmers' Institutes is of comparatively little value, inasmuch as their ideas of rational farming as a whole, are necessarily as yet very loose, vague and incoherent. On the other side, however, these Farmers' Institutes are well adapted to awaken with us older farmers thoughts and ideas which perhaps have long been slumbering in our minds, and which are aroused into active execution by these occasions.

Notwithstanding the fact that the majority of our farmers have an invincible
dread and aversion to all innovations, and although there is much truth in the old adage: "What little Hans has not learned, big Hans will learn nevermore:" yet this should not deter us from bringing before them by word and deed, such things as have been acknowledged good and useful, and for this our Farmers' Institutes offer an admirable opportunity. And if it is only one little grain that finds a fruitful soil with the one or the other, in the course of time, with profitable application, more and more grains will begin to take root, and you know many grains in due time make bushels.

In many of the Farmers' Institutes held heretofore, as well as in many agricultural periodicals, we have been accustomed to hear glowing accounts of extraordinary crops, yielded by one product or the other, of fabulous results obtained in one branch of stock-raising or the other, of wonderfully remunerative products of the dairy, etc. But what factors and circumstances have contributed to bring about such most favorable results, we are informed in but too small a degree, as to render immediate imitation recommendable. I am of the opinion that certain doubts are not unjustifiable, whether a person that reports such prodigious results, is in fact a good farmer. We all know that instances are by no means rare, where a farmer comes home from an agricultural fair, richly rewarded with prizes, because he has exhibited some big potatoes and turnips, or a bushel of well cleansed, perhaps hand-picked grain; while his fields at home present a scanty, poor appearance. Perhaps he has also exhibited a few heads of well-kept and well-cared-for animals, while at home the rest of his live stock is half starving and not worth looking at.

Such a farmer does not deserve prizes, on the contrary he should be punished for such malpractices. It would not be amiss perhaps, in order to prevent such humbug, to have in every county a committee of competent men examine the farms, and the best kept and best regulated ones to be awarded with premiums out of the state treasury.

A proper, judicious tillage of the soil is one of the foremost requirements to secure a good crop, of whatever name and nature it may be.

Therefore we should above all devote our first attention to this matter, and in the following I will proceed to give some practical hints to those who may not be quite familiar with them. The most important instrument in tilling the soil is the plow; and those constructed in this country are as yet unsurpassed by any manufactured in foreign countries. But I am positive in my belief, that there is many a farmer who still lacks the knowledge and skill of properly and correctly applying it. To be able to plow a uniform, perfectly straight furrow is only a mechanical accomplishment, which every one who has a little spunk in him, can easily acquire. But whether he that is able to do this can be called a good ploughman and whether he has a correct understanding of the work of ploughing, is very questionable. How many nicely plowed fields do we see, that are afterward covered with the poorest of crops, choked by weeds and speckled by stagnant water. He who makes a claim to be a good plowman, and to have a correct understanding of the work, must be able to judge of the physical properties of the soil, he must know how and when the plow must be applied; he has to take into consideration the proper time and weather; he must know how to treat the manure in its different forms with the plow, so as to make it easily accessible to the plants and to secure an even uniform growth of the crops. Some of the most important rules for plowing are as follows: Immediately before seeding never plow deep. Soil brought up from deep down is not congenial to young plants; they grow and are developed only scantily for a long time, and recuperate only when it is too late for the formation of kernels. Rust and rare-ripe kernels are not infrequently the result. In the shallow furrow however the young plants enjoy themselves better, develop quicker, and are better able to keep down the weeds; and if by this means the time for an early harvest is accelerated only for a few days, much is gained already. If time and circumstances permit, the surface of the newly sown field should be pressed together with a roller that is not too heavy; the seed will then sprout sooner and stand more uniform. Manure should be plowed under as shallow as possible, especially on porous, pervious subsoil. He who wishes to deepen the surface mould, should do this before winter, but never in the spring. Should a field after plowing become hard and compact through length of time or weather it
cannot absorb the fertilizing substances contained in the atmosphere; therefore it is well in such cases to render the soil again susceptible for them either by the plow or some other instrument.

A plow which lays down the furrows too level is objectionable. The furrows should have a ribbed form. If it can be done, the furrows should be given such a direction, as to prevent the gathering of water in the field, without however allowing ditches to be torn by it; and where it is possible let the plowing be so arranged, that no water can enter the field from outside. A field can always be kept cleaner from weeds, if no water is allowed to stagnate on it, and the less weeds there are we know the easier and quicker the harvesting can be done; and the more paying is the yield.

If grain crops are to follow on clover or grass land, it should be plowed shallow in the fall, in order to quicken the decomposition of the clover or grass sward in the shallow furrow.

The fertilizing substances produced thereby are of easier access to the young plants next spring and favor a more rapid development. For hectarows, clover and grass land must be plowed deeper, and an additional thorough manuring is very desirable.

Immediately after harvest a field can be plowed easier, than if allowed some time to dry out. If we wish to destroy weeds, we must plow as shallow as possible, but only at such times, when the sun has sufficient power thoroughly to pervade and to dry up the shallow furrow. But some time before plowing for seeding, the surface should be well dragged. He who wishes to plow the stubble field but once before winter, should plow under the weeds as deep as possible, for then they can make their appearance when the young, growing crops of next spring are already well started and able to check the growth of weeds. I take occasion here, again to advise another sure method for the destruction of weeds, which is, to bring the fields to such a state of fertility that the growing crops choke the weeds. But time does not allow me further to discourse on this subject. I therefore refer to your kind consideration my former correspondences on plowing and application of manure, that were published last spring in several periodicals. A fit place for a more detailed discussion on these subjects are the smaller farmers' clubs and meetings.

On the Institutes held heretofore a number of farmers have advanced the opinion, that mixed farming is the most recommendable, and I fully agree with them. But what is mixed farming? As far as I understand it, it means: To draw the greatest possible profits from all branches of agriculture and stock raising. But all this requires a much greater knowledge, skill and science in farmers, than where farming embraces only a few single specialties. For our farms that are yet in the first stages of development and culture (and the greater part of our state can be included in them) mixed farming has so far been the system best adapted to them. But it now becomes our task to subject to a closer examination all the experiences which we have made in the past, and to adopt into our system, what is most suitable and adequate to our condition, climate, weather, and soil. And since many of our farmers still lack the requisite knowledge of the soils, and are sadly ignorant of the proper mode of preparing the different varieties, and besides do not have a rotation of crops suitable to their soil, or none at all; this all has contributed that the greatest possible yields of their farms have not been reached by a great many, and yet none of them will admit to have made mistakes. All failures are ascribed to other causes, except to ones' self, for everybody claims to be the infallible prophet. A great part of our present farmer generation has grown up, imbued with the good old customs; and to satisfy the self-interestfulness of parents the sons were never allowed to leave the home clod; hence he must be a bright, clever boy, who will ever succeed in acquiring a knowledge of his vocation, superior to that of his father.

For several years past, the prices of our farm products have not only been deteriorating to an alarming extent, but the prospects are such, as to warrant no expectation of a bettering up for the near future. Exceptions will be only transient and of short duration. But what shall we do meanwhile, in order that our income may afford us some degree of satisfaction? In the first place, we must learn more and more, as above stated, to draw the greatest possible profits from every branch of mixed farming, and secondly to limit those of our wants, that are not absolutely nec-
ecessary for life. For us farmers there is no use in striking, and the strikes in other occupations only help much to make our own situation still worse. Even our government treats us in a step-motherly way. Now and then a crumb is thrown to us, to stop our clamor, but that there is need of broadening the knowledge of our vocation nobody seems to comprehend or care about.

The smaller a farm the less advisable it is for its owner to expend considerable means for the acquirement of additional agricultural knowledge. But the larger the farm, the greater are the opportunities for a farmer of more than ordinary agricultural education, to turn into use his higher knowledge, and derive the greater profit from it. For the former it must be sufficient once in awhile to look over the fence into the doings of an intelligent neighbor; but for the latter, the knowledge acquired beyond the mere practical, will certainly be a source of much profit. For this purpose we must provide an education for our young generation of farmers by which theoretical and practical agricultural knowledge can be gained, and it is the duty of the state to provide for it. And thirdly, while we have to depend upon our soil, we must also take the greatest care that our soil can depend upon us. The science of the soils is therefore of the utmost importance to a farmer. The different kinds of soil need a different mode of cultivation and tillage. If a certain crop does especially well on one kind of soil, we may give to that crop the preference on it, but we must not expect the same good results from a soil which is less congenial to that crop. But let no farmer be tempted by the good looks of a crop while growing, continually repeat to raise it on the same field; for the good condition may have been the result of other favorable influences; it may have a biding appearance and yet not unfrequently will yield much straw and few kernels. The strength of the soil is wasted by too frequent repetition of crops, without any profit whatever. It is a mistake to raise a crop on a soil, which it can produce only with abundant manure. It is also wrong in farmers to apply abundant manure to one part of the fields, and let the other part starve. It not unfrequently happens that the one field, from its exuberance, yields much straw and few kernels, while the other one, which is treated step-motherly, brings neither straw nor kernels.

The farmer himself can help a great deal toward securing a uniform and even standing of his crops, especially when he understands it to bring the grain crops, food crops and stock raising into proper relative proportions. But above all it is enhanced by a regular rotation of crops. But what is a change or rotation of crops? It is a period of time comprising the number of years that must elapse before clover is to be sown again on the same field. One and the same rotation is not suitable to the same kind of soil; but the circuit must be adapted to the soil and the marketing facilities. The more capable a soil is for clover, the narrower may be the limits of the circuit; but with less capability for clover the stages of the circuit must increase in time.

For the purpose of giving a presentation of a regular rotation of crops, I have exhibited here the map of a farm, accompanied by schedule and statistical tables belonging thereto. This seven-field or seven-year circuit has been executed with success since the year 1869, and has given no cause of making essential alterations, as the yield of the fields for a number of years has been greater than at the time when the soil was still in its original freshness. In examining the statistical tables of the map, it may perhaps appear to you that too little has been harvested; but this is not the case. The crops show a more uniform yield and satisfy pretty high claims; the soil has become less and less weeded, and as, in this case, it has become more productive, crops requiring greater strength of soil may yet be inserted into the circuit with impunity. Such a regulated rotation nevertheless allows a great deal of play room, which gives to the farmer ample opportunity to utilize his knowledge and heighten the yields. Each kind of crop has, as it were, its own peculiar soil, in which it can be brought to its highest state of perfection without great exertions. Just so each crop has a soil not at all adapted to it, in which it can be produced only under the most favorable circumstances and with more than due application of manure. From this we are to draw some most important conclusions: 1st. A crop needs more or less manure in proportion as the soil in which it grows is more or less congenial to it. 2d. Its yield is less in proportion
as it is raised in places unfavorable to its nature, or where it does not belong, and that are not congenial to it. This is a rule of utmost importance to us farmers.

It is true that in agriculture much can be accomplished by forcible means and great expense, that nature in itself does not favor, but this is seldom done with profit and impunity.

If we follow the course indicated by nature as near as possible, and evince as little as possible desire of deviating from it, or mastering nature, we sail with the wind, and beat the surest, easiest and shortest way to success.

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Dairying Made Successful.
[By Mrs. E. S. Robinson, Viroqua.]

Dairying as carried on at the present day is one of the most important and successful branches of farming. By the system of cropping without fertilizing, as pursued on most grain farms, the robbery is very apparent to the beholder in every thing—in the fields, the buildings and fences—even the man himself has a "don't you come near me" air, while the poor, half-frightened cow who stealthily makes her way over, under or through the apologetic fences, is ever on the alert for the dog or beating that is sure to follow her every attempt to get a fresh bite of the growing grain or her living in anything but a starved pasture. Contrast her with your dairy neighbor's cows, that stand knee deep in clover lazily chewing their ends in a "don't care whether school keeps or not" manner. You approach them, put your hand on one, she turns her great eyes toward you and seems to say, "If you want to go by me you must turn out yourself I am immovable. I am petted, caressed and catered to like the very queen. I am of this domain at least, and for all this I give you in return real, butter and cheese, and I finally yield up my whole body for beef. The result of her work is everywhere visible. In the rich fields, the substantial buildings and fences. She supports a home wherein her owner, as a practical farmer has expressed it, "takes more comfort to the square inch than any Wall Street operator or bloated bond-holder." A home where, if his heart is in his work, the man with a trained mind and skilled hands will banish all drudgery, one whose enthusiasm will surmount all difficulties and who will inspire his help and all that come in contact with him, to work with a will, producing very different results from the same work done by compulsion while, in constant companionship with his faithful friends (the older ones winning added respect as their value is realized, the young ones, from the very care they make him, becoming objects of tender interest) the years devoted to dairy farming will pass more rapidly than those of any other years of his life and he will find himself asking for more time and strength to devote to it, his great danger lying in the fact that his ambition carries him unconsciously into excessive labor that numbs his thinking faculties, forgetting until reminded by an ace here and there, that he cannot make brains and hands work successfully at the same time. Work, steady faithful work, with head and hands and heart, is the key to success in dairying. We must throw ourselves into the fight with well-considered judgment. We must know that why those in other kinds of business succeed is that they take advantage of every circumstance that can be brought to favor them. We know that it is only in excessive production, in the greatest economy and in the utmost activity of exchange that the possibility of great success lies and the farmer must not only work with all his mind and all his strength, but he must work for the love of money and as only the love of money can make him work. In manufactures the helpless men have become the operatives, in trade they are the broken down clerks, in farming they are the hand to mouth farmers who count for just so much as their labor is worth and no more. We can do nothing for them but try to help them to sufficient energy to wake up and help themselves. The time is not far distant I hope when those women who are now suffering from wasted energies by monotonous toil at the needle will awake to the fact that they should have just as good an education for the practical affairs of life as a man has and will take up this work of dairying as the most profitable and and healthful of any they can engage in. The history of nearly every patriotic state in the Union abound in incidents of young women who during the rebellion usurped by necessity the rights of fathers, husbands or brothers who were at the front, and not only directed the operations of the farm but carried on the various processes in person, and the