SHEEP IN IOWA.

BY DR. J. M. SHAFFER, OF FAIRFIELD,
Secretary of Iowa State Board of Agriculture.

The Hon. J. B. Grinnell, of Poweshiek county, Iowa, has written an excellent treatise on "Sheep on the Prairies," which may be consulted with profit by every man that owns a sheep in the northwest. Being a practical wool-grower, his instructions are of incalculable benefit. He does not indulge in fanciful speculations, but details experiences, summons figures, and makes deductions which a wayfaring man need not misunderstand. Samuel P. Boardman, of Lincoln, Illinois, has also prepared a valuable paper on "Sheep-husbandry in the West" that is well worthy of careful perusal. Many of his experiences in Illinois are doubtless similar to those of Iowa farmers; many of his suggestions will apply forcibly here, as there, and may be read with benefit. J. R. Dodg has given a splendid review of the "Condition and prospects of sheep-husbandry in the United States." This treatise exhibits a vast amount of industrious research, and, on account of its statistical tables, directions as to management, profits, varieties of breeds of sheep, &c., worthy of very careful

study and examination. All these papers may be found, thoroughly illustrated, in the Report of the Commissioner of Agriculture for 1862. It is proposed in this place to discuss the question of *Sheep in Iowa*, and to note the peculiarities of the condition of wool-growing in this particular region. In order to bring the several points considered more clearly before the mind, the subject is divided as follows:

1. Statistics of sheep, and manufactures of textile fabrics.
2. The history of legislation in Iowa as to sheep.
3. Shelter, and how it may be procured.
4. Pasturage and grasses.
5. Some evidences of progress in sheep-growing in Iowa.
6. Manufactures, facilities for.
7. Profits.

Details as to management, breeding, varieties of sheep, mutton, &c., are left to persons of practical experience. Many questions legitimately connected with wool-growing are exhausted in the papers above referred to, and in sundry valuable books devoted to sheep, and anything written here would be little more than repetition.

In 1850 there were in Iowa, according to the United States census, 149,960 sheep; in 1860, by same authority, 280,495; in 1863, by State census, 599,938. During 1863 the different railroads brought in 63,819. This is but a small portion of the actual number imported; and it will be safe to put down the number of sheep at the close of 1863 at 800,000. This should be regarded as a liberal estimate, though some persons place the figures 100,000 higher. Since January 1, 1864, the Burlington and Missouri railroad, running from Burlington to Ottumna, a distance of seventy-five miles in the southern part of the State, carried west 35,031, and carried east 9,119 sheep, being a gain of 25,912. The Chicago, Burlington, and Quincy railroad, from Chicago to Burlington, shipped for Iowa, during the same period, 40,257 sheep, showing that about 5,000 head reached Burlington that were driven west, instead of being again put in the cars. This road also carried east, from Iowa, 10,825 sheep, showing a further increase from this point by exportation of 1,706. On the Mississippi and Missouri railroad, running from Davenport to Grinnell, through the central part of Iowa, a distance of about 125 miles, were carried west into Iowa 52,450 sheep, and east, 5,760, giving a balance in favor of Iowa of 46,690. Thus:

1863.		1864.	
By B. & M. R. R.....	17,948	By B. & M. R. R.....	35,031
By M. & M. R. R.....	36,620	By M. & M. R. R.....	52,450
Total.....	54,568	Total.....	87,481

Or showing an excess of 32,913 sheep by importation, over those two roads alone, for 1864. At the McGregor ferry, running in connexion with the Milwaukie and Prairie du Chien railroad, there were carried west 25,000 head of sheep. Through these avenues alone, then, the importations in 1864 are 112,481. This number, added to the natural increase of the flock, will show that at this writing our sheep will not fall short of a million and a quarter. In 1863, from the limited sources already mentioned, there were exported 6,289 sheep; in 1864 there were exported 25,704, or more than four hundred per cent. of an increase. (Let it be remembered most distinctly that these figures are only partial returns, and make no pretensions whatever to show the *whole amount* of exportations and importations of sheep.) It is one of the most difficult tasks to collect agricultural statistics that will embrace the production of a whole State, and particularly in Iowa, where the public avenues of trade are as yet limited, and where, in many instances, no reliable data have been preserved to

MERINO RAM "BOLD BOY."

Hammond Stock, ten months old, weighs 107 pounds, bred by A. S. Farr, owned by Grinnell & Chatterton, Grinnell, Iowa.

exhibit the minutiæ of business. In 1850 the proportion of sheep to population was less than one; and there was about one sheep to every six acres of improved land to the farm. The following tables will illustrate the progress of sheep-husbandry in Iowa, and will, better than any other way, show the immense strides which this interest has made the past few years. In fact, we are only surpassed by our sister Minnesota, which, in 1850, claimed but 50 sheep; and in 1863 reached the surprising aggregate of 175,000, or a multiplication of nearly 2,200, while Iowa multiplied her sheep by less than six in the same period. Would space permit, it would be pleasant to make comparative tables; but this paper is already assuming unexpected dimensions, and the absolute tables are presented for what they are worth.

Year.	Population.	No. of sheep.	Proportion.
1850	192,214	149,960	Less than 1 to each person.
1860	674,913	258,228	Less than ½ to each person.
1863	702,162	800,000	More than 1 to each person.
1864	715,000	1,250,000	Nearly 2 to each person.

	Acres of land improved.	Proportion of sheep.
1850	824,682	1 sheep to every 6 acres.
1860	3,780,253	1 sheep to every 13 acres.
1863	4,784,886	1 sheep to every 6 acres.
1864	4,800,000	1 sheep to every 4 acres.

In 1850 the whole product of wool is 373,898 pounds; and in 1860, 653,036 pounds; showing in 1862, 1,429,209 pounds; and the exports by the Chicago, Burlington, and Quincy railroad, and the Mississippi and Missouri railroad, reach, in 1864, 943,193 pounds, or the exports by only two of our main lines of communication with the east, within a half million pounds of the entire product of 1862. Here is a picture upon which the wool-grower of Iowa may look with a very great degree of complacency. He can see in these figures the vast wealth in store for him, and the sure reward he shall secure for his intelligent effort. It cannot fail to encourage him to look well to this great interest; to see that his flocks receive careful attention, and his fields, for their sake, more enlightened cultivation. Already almost a million of dollars have come to our State in 1864, through but two single avenues of trade; and he should take courage, and assist to swell the current until his brightest dreams are more than realized.

The value of home-made manufactures in Iowa in 1850 is placed at $1,631,039; in 1860, $847,251; and in 1863, $967,979. These figures are supposed to include only those articles of wearing apparel, blankets, linens, &c., made in the family. If the enumeration has been carefully preserved and the distinction marked, it shows a falling off of seven hundred thousand dollars in thirteen years. In the United States census there are separate columns for products of industry and agriculture; and in the State census all these products are included, under the general heading, "Value of domestic manufactures not included under previous headings." If it be true that Iowa manufactured in the family but $967,979 worth of clothing and textile fabrics, it presents no very flattering compliment to the industry and skill of the wives and daughters in this direction. It shows that in 1863, when the necessities of a terrible civil war call for retrenchment, less than a dollar and a half's worth of clothing material was made by each inhabitant; while in 1850, by the pioneers, who were just redeeming the State from the solitude of nature, nine dollars' worth were manufactured by each person. If "domestic manufactures" mean cloths, jeans, linsey, socks, blankets, sheets, linens, &c., it is not such a showing as we should expect at a time like the present. In fact, under this general heading for the whole United States, there was a decrease, even after adding products of Kentucky, Wisconsin, and Oregon, of nearly three millions of dollars in the

decade ending 1860. In 1850 the number of pounds of flax in Iowa reached 62,660, and ten years later it dwindled down to 28,888 pounds; but in 1863 reached 158,918 pounds, or multiplied itself by nearly six in the space of three years.

All the household manufactures of wool and flax, from this showing, will not furnish a tithe of the wearing apparel of the people. In fact, the experience is that homespun is the exception to our rule of clothing, and sheets, table-cloths, and other articles that could and should be made of flax in our own homes have been entirely supplanted by cotton. So the piano has supplanted the spinning-wheel, and innocent, yet unprofitable, parlor amusements the hum of the reel. Education has taught physics, philosophy, grammar, mathematics, and has forgotten economy, frugality, self-reliance, and patient industry. These ought it to have done, and not to have left the other undone.

With a gigantic civil war, calling upon all the resources of the nation, involving the people in a debt of nearly two billions of dollars, requiring unheard-of personal sacrifices, fixing a system of taxation that promises to continue a long time, it becomes not only sound economy, but the dictate of an enlightened patriotism, to increase the home manufacture of textile fabrics. The increase of six times the quantity of flax fibre in Iowa in three years, ending in 1863, is an encouraging omen, a healthy sign; and there was also an increase of $120,228 in the value of domestic manufactures. This is a most excellent beginning; let the figures be multiplied indefinitely; let every farmer have his flock, every family its loom and spinning-wheel, every county its machine for carding and manufacturing, and it is a giant step towards the preservation of our nation. This state of things would bring with it a return to the habits of simplicity of the fathers, and would do immense good, socially, politically, and morally.

The importation of woollen goods and fine fabrics into the United States assumes such immense proportions that the credulity of the student of the history of this time will be staggered. He will not credit the figures, when he reflects that a million of men have been called from the field and workshop; that a war prevailed four years; that a huge debt overhung the people; that thousands of persons, stripped of property and driven from home by the perils of war, depended upon charity for bread; and still this nation imported millions of dollars' worth of idle luxuries. When our fathers fought to found this government they refused to wear foreign goods; they organized societies which every way encouraged wool-growing, and stimulated the manufacture of woollens in the homes of the people; they denied themselves many comforts even, and were content to wear sackcloth, if need be, with the hope of building up a republican government, and giving freedom of speech, of conscience, and the press to their posterity. They have fallen asleep; they have committed to us the preservation of that government and those rights, and, instead of following their noble example, we have plunged into a system of extravagance that is absolutely dishonoring to their memory. "Money is plenty;" "we have made fortunes out of the war;" "our trade was never so prosperous;" "prices were never so high; "labor on the farm and in the workshop, everywhere, was never so remunerative:" let us, therefore, "eat, drink, and be merry." We cannot penetrate the veil which hides the future of our country, but it may be declared, with reason, that this folly and extravagance cannot continue without great peril to our free institutions. It will require many years of industry and many years of taxation to pay the national debt. This generation will not see the end; and, for the sake of posterity, it becomes us to return to the simple, frugal habits of the fathers, and abandon our present reckless waste of money, and to cultivate with energy all our advantages to become really independent. Instead of paying enormous sums for foreign articles of clothing with corn, wheat, and provisions, only in part, and the balance in gold, at a

ruinous rate of premium, it behooves us to compel other countries, by manufacturing for ourselves, to buy our produce with gold. Instead of importing annually millions of pounds of wool to feed our machinery, it becomes us to make adequate preparation to increase our flocks, and grow wool enough for our people and a balance for exportation to clothe the other nations of the earth. The following table is copied from the very able address to the Ohio Wool Growers' Association, by Henry S. Randall, LL.D., January 6, 1864, showing imports of wool in 1863:

From whence exported.	Pounds fine.	Pounds coarse.	Total.
Europe	11,000,000	10,000,000	21,000,000
Cape of Good Hope	11,000,000	----------	11,000,000
Buenos Ayres, &c.	15,000,000	6,000,000	21,000,000
Russia	----------	2,000,000	2,000,000
East Indies and China	----------	750,000	750,000
Spain and Portugal	----------	750,000	750,000
Turkey	500,000	3,000,000	3,500,000
Mexico	----------	1,500,000	1,500,000
Chili	----------	2,500,000	2,500,000
Various places, in small parcels	----------	1,000,000	1,000,000
Total	37,500,000	27,500,000	65,000,000

From the same high authority the following table is taken:

The value of wool imports into the United States for the last four fiscal years has been as follows:

Years ending—	Value.
June 30, 1860	$4,842,152
June 30, 1861	4,717,350
June 30, 1862	7,370,667
June 30, 1863	11,060,062

Does the wool-grower in Iowa need further argument than this solid phalanx of figures to induce him to look well to his flocks? The most obtuse in perception cannot but observe that there is no danger of a glut in the wool market just at present. The marvellous increase in importations shows the steadily increasing demand for woollen goods. The army of the Union absorbs an unusual quantity in blankets, shirts, drawers, &c., and when this cause of consumption is removed, it will probably lessen the price a little, but not enough to frighten even the most timid out of his confidence in the profits of the flock. Instead, then, of following the practice of continued importations, it becomes us to increase the flock, enlarge our manufacturing interests, establish factories all over the land, and clothe our own people more cheaply—because the expense of transportation is avoided—boastfully and thankfully, because our enterprise and industry are sustaining the best government under the sun. We may even allow the unhappy votaries of fashion to dress extravagantly, and the so-called rich to live luxuriously; but the millions who earn their bread by the sweat of the face may clothe themselves with home-made manufacture, and feel a pride that not the highest fashion or greatest wealth can purchase or enjoy. The hardy, trusty millions, who till the soil, dig our minerals, man our vessels, fight our battles, make our laws—these love liberty; these are men who perform the duties of an American citizen, and support with dignity the life of an American freeman; these are the men upon whom we must depend for reformation from the unparalleled extravagance of the present time. We must manufacture at the fireside all those fabrics which are so necessary to comfort, and the importation of which is so heavy a drain upon our finances. If every

family in our State had a spinning-wheel among its household gods, the effect would soon become visible, not only on our foreign trade, but in securing us that independence which is so comforting an element in our being. From all this, learn the profit of sheep-husbandry. Let us grow our own wool; let us manufacture it for our own use; let us become independent of foreign governments and sister States, and we add at once to our power, wealth, and comfort.

LEGISLATION.

The great sheep-growing interest received no special protection by law in the early history of the State. To be sure, a law was enacted paying a bounty for the scalp of certain harmful wild animals, as the wolf, lynx, &c., which, being numerous, committed depredations upon the flocks and domestic animals of the pioneer. A law of similar character is still on the statute-book. In 1861, however, a very stringent law was enacted against the importation and sale of diseased sheep. It provides that any person who should import, or suffer to run at large on any common, highway, or unenclosed lands, or should sell or dispose of any diseased sheep, should be punished by a fine of not less than fifty dollars. This act was deemed necessary because at that time many persons were beginning to realize the adaptability of this State to sheep-raising; and some unprincipled parties from other States, taking advantage of the desire of our people to purchase, and presuming something, perhaps, on their want of enlightenment on the subject, attempted, and in several instances are said to have succeeded, in selling flocks of diseased animals. These flocks were not merely a loss to the purchaser, but to the neighborhood, by the spread of the contagion. No prosecution has taken place under this law; but so great is the interest connected with the whole question of sheep, that an offender would meet with summary punishment at the hands of the authorities and people. It is believed that the prompt enactment of the law put an effectual stop to any future attempt to perpetrate so great an outrage and swindle as the sale of sheep affected with contagious disease. In 1859 many persons petitioned for a law to protect sheep from the ravages of dogs; but the bill was ridiculed beyond measure, made sport of, and finally defeated. Soon after the close of the eighth general assembly, the State Agricultural Society distributed throughout the State blank forms of petitions to the legislature to enact a law against the worthless curs that infested the country. A circular was also issued, under the same auspices, setting forth that a bill had been presented to the previous legislature; that it had been made the butt of brainless lawyers, and had been literally laughed out of the house; and calling upon the farmers to rise in their majesty, overwhelm the legislature with petitions, and compel them to protect this growing interest from the ravages of dogs. The petitions fell thick and fast upon the ninth general assembly, representing fifty-three counties, thirteen agricultural associations, and over three thousand people. Upon no other subject were so numerous petitions presented, and, in obedience to the apparently expressed will of the farmers, a law was enacted, of which the following are the principal features: To register every dog before May 15, 1862, with the township clerk; to pay one dollar for every male, and three dollars for every female dog; to post up a list of registered dogs in each township; to put a leathern or metallic collar on every dog, with the number; all dogs without such collar, a nuisance; fine not exceeding fifty dollars to maliciously kill or entice away any collared dog; lawful for any person, and made the duty of every police officer, constable, &c., to kill any dog not registered; lawful to kill any dog worrying any sheep or other domestic animal; fine any officer neglecting to enforce the law, ten dollars; all funds accruing to be set apart as a school fund, to be paid to the township district treasury; took effect by publication, being deemed of immediate importance.

The petitions out of which grew this enactment, as already intimated, set forth that hordes of worthless curs infested the country, to the serious detriment of the wool-grower, and prayed for a law to protect sheep against them. The dog-law, while it does not mention sheep, would undoubtedly have proved an immense protection to them, if executed. The tendency of the law was to diminish the number of dogs, and the less the number of dogs, the less the injury to sheep by dogs. During the few months the law was in force, many an uncollared dog met an untimely death; and school districts that were short of funds became suddenly plethoric in their treasury. The towns and cities did not hesitate to enforce the law; while the agricultural districts, for which the law was especially made, treated it with magnificent scorn and indifference. In 1862 a special session of the legislature was called, for the express purpose of enacting a law to enable our brave soldiers in the field to vote, and to adopt measures that would strengthen their hands and hearts, and give moral and material support to the government. It is humiliating to record, that the very first thing done when that body was convened was to introduce a bill to repeal the dog-law. And the law was repealed.

The history of this legislation is a remarkably curious and a very ludicrous and amusing one; and these few facts are detailed now, because the day is not distant when our farmers will again become clamorous for some such protection or will be a "law unto themselves" and will kill every dog that is found ten feet away from home. The following are some of the more potent objections to the law as expressed by many persons: it did not provide a fund to indemnify the owners of sheep from losses by the ravages of dogs; it was humiliating that our children should be educated by a dog-tax; it was unconstitutional, depriving a man of property without due process of law; if dogs were killed off, the wolves would so increase upon us that no domestic animals could be reared; it did not allow every farmer to have *one* dog free of taxation—and much more of that kind.

In Ohio, in 1863, there were 174,404 dogs. Sheep killed by dogs, 36,778; injured, 24,972. Value of sheep killed and injured, $136,347 28. The whole number of sheep 4,448,227, valued at $7,339,041. The entire population of the State, in 1860, 2,302,838—say, in round numbers, in 1864, 2,500,000. This would allow one dog to every 14 persons, and less than two sheep to the individual. Proportion of dogs to sheep as 1 to 26. The population of Iowa, in 1863, is 702,162; and taking the same ratio as obtains in Ohio, it will give a grand aggregate of 50,155 dogs in Iowa. There are not less than 900,000 sheep, or a little more than one sheep to the individual; and the proportion of dogs to sheep foots up the alarming ratio of 1 to 18. In Ohio each dog was nearly 80 cents damage to the flocks of the State; taking the same proportion, our losses in the past year will reach $40,124. In the absence of statistics, this may be considered a fair approximation. Scarcely a week passes but a newspaper paragraph gives intelligence of loss to sheep, by dogs, in some part of the State; and not a hundredth part of these ravages finds its way to the press. Says Colonel Johnson, secretary of the New York State Agricultural Society, (Trans. 1862, page 710,) "We have received, for the first time, the number of sheep killed by dogs—5,503 sheep in twenty-two counties, as reported, and from the remaining districts in those counties not returned would have increased the number to at least 8,000, and for the whole State probably 50,000; valued at present prices for sheep would make for the whole State at least $175,000. We ask the farmers of the State if they can afford to supply with choice mutton (sheep) these worthless curs roving over their fields every year."

From this showing it is evident that there was, and still remains, a necessity for legislation on this subject; and how much opposed soever the farmers, as a class, may be to the taxation of dogs, or to their destruction, the fact is patent that their losses are annually very great from this cause. Should a legislature

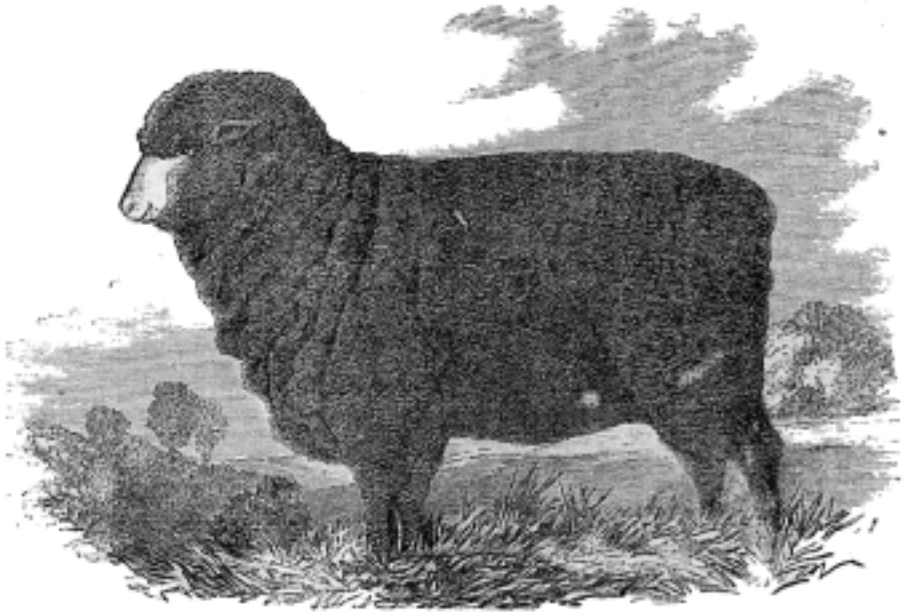
refuse to remove any other nuisance from which the agriculturists suffered half so much damage, they would very reasonably complain of a want of protection to their interests.

Says Governor Kirkwood, in his message, 1861, "This great interest of our State (agriculture) may, in my judgment, be aided by legislation in a new direction. Hitherto our great staples for export have been wheat, corn, cattle and hogs. The prices paid for their transportation to New York form a large portion of their value at that point. Indeed, wheat and corn will not bear transportation to that market during the season when the navigation of the lakes is closed. Experience has, I think, conclusively shown that our State is admirably adapted to sheep-grazing; and the value of wool in proportion to its bulk and weight is much greater, and the price of its transportation to New York in proportion to its value much less than that of our present staples. A great drawback upon the growing of wool is that large numbers of sheep are annually killed by dogs. I therefore recommend that a tax be levied on all dogs in the State, and that the proceeds of the tax be applied to paying to owners of sheep killed by dogs the value of the sheep thus killed. I would go further than this—I would exempt from taxation for a period of five years all sheep, not exceeding fifty, owned by any resident of the State, and would also exempt from taxation, for the same time, all capital invested in the State in the manufacture of woollen goods."

The former recommendation has already been fully considered; the latter, in the house of representatives, took the form of a bill; but it was defeated, and no exemption from taxation was made.

Shelter.—The want of adequate shelter is by some persons considered a serious impediment to the success of the wool-grower. The prairies are very extensive, and the cold winds of winter sweep over them with merciless energy—the heats of summer pour down upon them with parching violence. Warm and convenient sheep cotes in winter, and cool and refreshing shade in the hot months, are a most important auxiliary to success. Lambs must be carefully protected in the cold and wet days of early spring, and at every season there is necessity for some sort of protection against the vicissitudes of climate. Not every farmer is able to purchase lumber for sheds and folds; having paid for the land and indispensable improvements, and the effort to purchase stock being fairly made, the state of his finances will hardly ever allow him to make specific outlays in this direction. Railroad communications greatly reduced the price of pine lumber, within seventy-five miles of the Mississippi, until the p esent season, when, on account of the low stage of water, it was difficult to procure enough to supply the demand made for building, &c., and prices, even on the line of the roads, reached fabulous figures. To cut and carry to mill logs to be sawed is, on account of the distance to timber, a herculean task. When the house and fence, and some kind of outbuilding for horses are erected, the farmer is loth to add greatly to his building by this process. A rise in the river would greatly aid all persons in this respect. There are thousands of acres of logs cut in Wisconsin and ready to be floated down whenever the stage of water will render it admissible. The enormous prices of pine lumber cause a man to hesitate before he makes purchases that are not indispensable. This drawback is only temporary, and it is hoped the snow and rain of this winter will enable the lumbermen to supply all that may be demanded in the spring. Temporary sheds or pens constructed of rails and covered with brush and straw are of great utility, and may supply the place of better protection until circumstances enable the farmer to add elegance to use in the erection of buildings, furnished with troughs for grain, racks for hay, and all the appliances that insure economy in food, healthfulness, and comfort.

But there is another species of protection which will never fail, and which should be a part of every wool-grower's stock in trade. We allude to artificial



MERINO EWE "PRAIRIE QUEEN."

Hammond Stock, bred and owned by J. B. Grinnell, Grinnell, Iowa.

groves of timber. These afford lumber, fuel, and protection from winds, and cool and refreshing shade. There are already planted and matured, and maturing, 8,361 acres of timber, mostly of locust, maple, cottonwood, and walnut, all which grow with great rapidity on the prairies. A few statements are introduced here to show with what facility a farmer can produce his own timber. Says Hon. O. Whittemore, of Jones county, "The prairie soil is will adapted to the growth of all the forest trees that are found in this latitude; and when transplanted upon the prairie flourish and grow more rapidly than trees planted upon the timber soil, and are sure to live if properly put out. The black locust, planted from the seed, grows as prolific as the Canada thistle. It makes in a short time timber sufficient for fence posts, ranking next the red cedar for durability. Black and white walnut grow rapidly upon the prairie, and will produce nuts from four to seven years from the time of planting. There is no improvement that can be made upon our open praries, with the same expense, that will so enhance the true value of a prairie residence as ornamental shade trees." Says Hon. Suel Foster, president of the Iowa Agricultural College, "Let us plant trees that we may have them to look upon for their beauty, to eat the fruit, sit in their shade and breathe their fragrance, to raise orchards, shade trees, and groves, to break the wind of the bleak prairies, to modify the climate and make it much more comfortable for man and beast, and for the great utility of the wood and timber. It is generally thought to be easier to raise an acre of timber on our prairie lands than it is to clear an acre of heavy timber of the timber country." Here is something tangible from the pen of Samuel Bower, of Benton county: "Now we have upon ten acres, at six feet apart, twelve thousand (black locust) trees, and at what cost? Two days gathering and cleaning seed, two dollars; two days sowing seed and preparing land, two dollars; two days hoeing the first season, two dollars; one day digging up trees, one dollar; half day with team hauling trees to planting ground, one dollar; eight days ploughing ten acres, sixteen dollars; ten days man and boy planting trees, fifteen dollars; fifteen days cultivating second season, twenty dollars; total cost, fifty-nine dollars." A further statement shows that ten acres of maple, producing thirty-six thousand rails, can be grown in ten years at a cost of sixty-two dollars and fifty cents. To persons living in a timbered country these long extracts may appear irrelevant; but to the wool-grower of Iowa the culture of artificial groves is a matter of prime importance, and those who live on a prairie will not fail to appreciate all that is written on the subject. Such groves insure shade in summer, protection in winter, and afford the means for dividing the large fields into conveniently sized pasture lots. Could strangers see the panting flocks and herds escape during the heat of the day to the cooling shade, or could they see them hiding from the chilling winds in the calm and still air of the grove, they could realize at once the necessity of such protection. Sheep, in order to flourish, *must have protection* from the elements; the lack of it in former years caused disease and deterioration, produced a fatal discouragement, and finally was a principal element in giving credence to the absurd and hurtful belief that Iowa was no wool-growing State. The pioneer removed from Pennsylvania or Ohio; he brought his flocks with him; he left behind him tame grasses, small pasture fields highly cultivated, "babbling brooks;" the cool shade of the woods, the sheep cote, built regardless of expense, and with wise reference to the health and comfort of his sheep. He reaches Iowa and finds acres of tall waving grass; no shade from sun or protection from cold. Of course his sheep deteriorate; naturally his flock would decrease; for there was no care bestowed upon it, such as had been practiced in the old home. Forgetting all the influences he had left, and not appreciating the deprivations to which his flock was being subjected, he rashly concluded that Iowa was no place for the wool-grower. Finding, also, a munificent return for his labor in grain-growing, converted into hogs and cattle, he remained satisfied with his full crib and broad acres, and

abandoned his dwindling flock. Had the pioneer possessed the advantages of shelter that he had at home, in spite of all other drawbacks, he might have rejoiced in the abundance of his success in raising sheep.

Pasturage and Grasses.—Intimately associated with the wool-growing interest is the subject of grass and pasturage. The prairies yield an abundant and highly nutritious pasture during the summer; and the same grass, properly cured, makes excellent food for winter. There are in Iowa unimproved lands of the farm 4,135,613 acres, besides some millions more acres not of the farm. The greater part of this is covered with a luxuriant growth of grass, that affords almost unlimited range for flocks and herds. There are also 224,187 acres of tame grass for mowing, and 70,565 acres for pasture. There were cut in 1862 from tame grasses 328,042 tons of hay, and from wild grass 633,420 tons of hay. This enormous yield of wild hay, which is agreed upon by all experience to furnish a most suitable article of food for sheep during winter, and our millions of acres of free pasturage, are convincing evidence of the less cost of raising and feeding sheep here than in the older States. All the large expense of fencing, seeding, manuring, ploughing, and cultivation is avoided, and a bountiful nature spontaneously offers us an immense provision for the wants of those animals dependent upon us. It will be seen that the average yield of hay per acre of tame grass is nearly one and a half ton. Much of our meadow is made by hauling out and scattering the debris of the hay-mow; much by simply throwing out barn-yard manure; very little by a systematic and scientific effort to make a good stand of grass. Should our fields reach the degree of perfection in cultivation that have been expended upon the farms at the far east by deep ploughing, under-draining, fertilizing, and careful pasturage of stock, this average can be readily doubled. In the more thickly settled portions of the State the timber and brush lands are fast losing their coarse wild grass, and the surface is covered with a magnificent growth of blue grass and white clover, adding much to the beauty of the face of the country, and affording free pasturage for thousands of grazing animals. That Iowa is especially adapted to grass-growing, a few statements may prove beyond controversy. Says M. W. Robinson, writing from Des Moines county, near the southern border, and detailing an experience of twenty-five years: "I have been of the opinion for many years that, for the amount of labor and expense in producing, cutting, curing, and putting into market, it (hay) pays better than any other crop;" and then proceeds with minute directions, that will, if carefully observed, insure a never-failing yield. Says T. Wardall, writing from Mitchell county, the extreme northern part of the State, in an admirable essay on tame grasses: "By our State agricultural reports we find the grass crop of 1858 to exceed in value the grain and corn crops by $500,000; and the grazing interest is rapidly growing in importance as a well-established branch of agriculture, which promises to yield better returns for the labor expended than raising wheat or corn." Another sentiment: "It is known by observing farmers that a flock of sheep improves a field so much by being pastured on it for one season up to its capacity as to render the effect visible for ten years; and fields put down to grass properly will fatten more cattle per acre when five years old than when but two, which shows conclusively that the quality of grass improves proportionately with the increased richness of the soil on which it grows; and this result is best secured by grazing." Reports from many persons indicate that a greater attention has been paid within the past five years to tame grasses than ever before; and in no case has there been a failure to succeed when an intelligent effort has been made. Says N. Hamilton, of Clayton county: "We find that grain-raising involves us in a heavy outlay for seed, labor, and costly machinery; that it also reduces the productiveness, and, consequently, the value of our land. * * Not so with the tame grasses. The outlay is comparatively light, while the income is almost as great per acre as

with wheat; and if fed on the farm, the land is rather gaining than losing in value." Evidences from all parts of the State cannot fail to satisfy the inquirer that Iowa is entirely adapted to grazing purposes; that there are less failures in grasses than in the other crops; that the prices of hay are remunerative; that their cultivation is not exhaustive to the soil; that it can and does form a considerable element of our wealth; and that there is little danger of putting down too much land in grass, to the exclusion of grains.

But there is still another source of supply of food for stock. There are 1,733,503 acres of corn, and 1,522,936 acres of wheat, oats, and rye, making an aggregate of over three millions of acres, which yield an enormous quantity of coarse food that is very little regarded. The blades and tops of corn, and the straw of other grains, if husbanded with anything like care, to say nothing of economy, would feed thousands of horses and cattle during the winter, and leave the finer, but not more nutritious, products of the grasses for sheep. It is the custom with most farmers to turn hogs and cattle upon the corn-fields when the corn is gathered, and frequently before it is gathered, and give them "indiscriminate loot." Straw is left to rot at the place where the stack was threshed, cattle allowed to have free access, or it is hauled out to fill up some unsightly gulch, or burned to get it out of the way. The unusually large importations of sheep, with the regular increase of the flock, cannot fail to compel amendment in this respect. The 331,162 acres of Hungarian meadow and pasture for 1862 will not afford food enough for our 900,000 sheep. Giving the whole crop, including wild grass, at 1,000,000 tons, and the cattle numbering 1,245,868, horses 275,697, mules 12,032, or total live stock 2,433,597, and the necessity for economy is tolerably apparent. The tame grasses, which flourish luxuriantly, even under careless methods of culture, can be made to yield still larger returns as the fields grow older by careful admixture of seeds suited to the varied soil, by fertilization and pasturage. And there will soon be necessity for this; for the wild grass of the prairie, once destroyed, cannot be reproduced. The breadth of surface must be enlarged; pasture lands must be increased; the immense fields of hundreds of acres must be subdivided into small and conveniently sized lots, for the purpose of frequent exchange of the flock, and then, indeed, will be added an important element in making Iowa the paradise of the wool-grower.

It may be interesting to introduce here some evidences of the increased attention now being paid to sheep in Iowa; and could the pioneer who proclaimed that this was no country for sheep look upon the picture, he would doubtless be astonished "with a great astonishment." The exhibitions of the State Agricultural Society should be the just representative of the progress of the State in arts and agriculture. Particularly is this the case in the stock department. Men attend agricultural fairs to witness improvements, to study new inventions, to purchase implements and animals, as well as to make an interchange of thought and opinion upon all subjects connected with agricultural development. The interest manifested in any one direction can be measured with tolerable accuracy by the attention paid to it at the fair; as one index, then, of progress, let it be mentioned that, in 1856, there were 22 entries of sheep; in 1857, 10 entries; in 1858, 23 entries; in 1859, 37 entries; in 1863, 78 entries; in 1864, 107 entries. The committees speak in the highest terms of the quality of the animals, and declare that the exhibition was creditable to the State, and promised that Iowa should soon be second to no other in this particular. In 1864, also, an entirely new class of "pure Spanish merino" was formed, in which a complete pedigree was required as a qualification for competition. The effect was to call out an exhibition of very superior animals, that was highly commended by all who witnessed it. Feeling the great importance of concerted action, the wool-growers of southeastern Iowa, early in 1864, formed themselves into an association, adopted a constitution, elected

officers, and it is now in the full tide of successful operation. It numbers among its members many of the prominent wool-growers of the State, and bids fair to accomplish much good. The specific object of the organization was to petition Congress to protect the American wool-grower by fixing a tariff on all foreign wools imported. This object being achieved, it is the design to meet at convenient times and places, and by lectures, addresses, and discussions, to develop the wool-growing interest, and give it permanency and importance. These efforts cannot fail of producing good fruit. Mind will be brought into contact with mind, experience compared with experience, and the association will be a centre of light and knowledge.

A greatly condensed statement of replies of correspondents in 1863 will exhibit, with much clearness, the actual condition of sheep-raising at that date. It would occupy too much space to compare them with notes of the year previous. Let it be said, in general terms, that those statements are generally not adverse to the idea that sheep are a profitable stock, or are receiving special attention.

Audubon county.—There is a lack of interest on the part of farmers in sheep-raising.

Adair.—No very large flocks; farmers working into them as fast as their means will admit. Sheep do unusually well, are healthy, and with proper care little loss need be anticipated.

Blackhawk.—Increased 200 per cent.

Cedar Valley, (a large district.)—Sheep do well; imported over 40,000. Two years ago shipped from Cedar Falls 1,000 pounds of wool, last year 32,000.

Central Iowa district.—Much attention being paid.

Clinton.—Large numbers being brought from eastern States; business yet in its infancy.

Des Moines.—A decided improvement over previous years.

Dubuque.—Are engaging attention of agriculturists; 20,000 in the county; fleeces average 4 pounds.

Fayette.—Our wants partially supplied by importation of fine-wooled sheep.

Floyd.—Sheep have been sadly neglected; of late, number has been largely augmented.

Harrison.—Farmers who have had capital have turned their attention to wool-growing, regardless of price, paying $5 per head.

Jackson.—Have been introduced in large numbers the past two years; considered good paying stock.

Jasper.—Farmers are turning attention to sheep; county well adapted to sheep-grazing.

Jefferson.—Exported 219 mutton sheep.

Lee.—Numbers at the fair fully demonstrated the interest in wool-growing.

Mahaska.—Sheep increased sixteen-tenths, with a vigorous effort to increase both in numbers and quality.

Marshall.—Large importations of sheep; sheep-raising cannot fail of being a great source of profit.

Muscatine.—Just beginning to receive the attention that properly belongs to them.

Page.—Sheep-raising daily growing in favor.

Polk.—Becoming more and more satisfied, every year, that this climate is well adapted to wool-growing; raising of sheep becoming a prominent branch of agriculture.

Pottawatomie.—Generally improving the stock and increasing the numbers.

Scott.—Many large flocks of sheep have been introduced the past year, and the profits arising therefrom pay the entire outlay in a very short time; a new woollen mill lately started.

Union Agricultural Society, (a district.)—Sheep are beginning to be introduced by the more wealthy and enterprising.

Union, (a district.)—Sheep business has assumed huge dimensions.

Washington.—Wool-growing is fast becoming an important branch of husbandry.

Wayne.—Majority of the farmers have sheep sufficient to raise wool for the use of their families.

These brief notes indicate that though the interest is a new one, our farmers have taken advanced ground in this important branch of husbandry.

WOOLLEN MANUFACTURES.

While the evidences are abundant that Iowa can produce sheep and wool, it is not less clear that she possesses every facility for manufacturing purposes. Thirty millions of acres of uncultivated lands at prices ranging from $2 to $5 per acre; a healthy, salubrious climate; a soil unsurpassed for richness and fertility, and the variety of its productions; free schools, with a school fund amply sufficient to educate every child in the State; energy in projecting and completing railroads; agriculture receiving the patronage of the State; founding an agricultural college that promises the most important results; unflinching and unconquerable loyalty to the union of these States against all treason and rebellion—these invite hundreds to forsake the sterile fields of the country and seek home and employment in our midst. Particularly at this time is there room for the capitalist to invest in manufacturing woollen goods. Under a very large portion of the State lie inexhaustible beds of coal that afford a cheap and convenient fuel. Each year develops more and more this important element of wealth. In 1862 there were raised 901,858 tons of coal, which, at a fair estimate, will be doubled in 1864. The further these mines are worked, the better improved the machinery and appliances for mining, the more profitable does the business become. The supply of wood is by no means exhausted, and situations upon streams would be surrounded with a supply for many years to come. Streams of water likewise afford good water-power sites in almost every county; and upon the prairies water is abundant, and can be readily obtained by digging. Enterprising business men could, at this time, secure a monopoly in every neighborhood. In 1860 the whole number of manufacturing establishments producing over $500 was 1,790, and number employed 6,587. The State census of 1862 gives the value of general manufactures of all kinds at $2,950,805. We need one or two woollen mills and carding factories in every county of Iowa, of five thousand inhabitants. Here is a field for investment that will yield a handsome profit to the enterprising and intelligent capitalist—an investment that will pay a better percentage than any kind of stocks now for sale. Two millions of dollars would not establish mills and factories enough to work up the raw material produced on our soil. Our mills do not at present supply a sufficient amount of woollen yarn to make our stockings. We must commence the manufacture of woollen goods, or must continue to export wool to the east. And what is the result? We pay the transportation to the seaboard; pay the wages in part of the hands employed in the factories; pay the expense of freight back in the shape of cloths or goods in exchange; pay the jobber and dealer; and assist all these to amass a fortune at our cost. Were factories established here we would save all this vast expenditure; we would secure a better article of clothing; we would add to our wealth by giving employment to hundreds of operatives; the hum of business would resound gratefully to our ears; and above all, we would have a never-failing market for our wool at our own price, independent of dictation by the seaboard, and independent, too, of those damaging fluctuations that have been so remarkable in the history of the wool trade. Industry, skill, thrift, are the certain elements of success. Put these in active operation, assisted by capital judiciously invested and economically controlled,

and Iowa can, in this regard, be independent of the world. Let the question be asked, what shall we do with our three million pounds of wool? The present need compels us to send it to the eastern manufacturer. If this be unavoidable now, it may not so continue forever. We should, with our facilities for growing wool and manufacturing, consume it all at home, and save the enormous tax of transportation and manufacture abroad. In 1860 there were in Iowa twenty-three establishments for the manufacture of woollen goods; capital invested, $109,000; pounds of wool, 265,200; number of hands employed, 131; annual product, $167,960, (being an increase of only $55,506 in ten years.) The yield of wool in 1863, according to estimates carefully made by Gen. W. D. Wilson, at three and a half pounds to the fleece, was 2,099,783 pounds, or more than seven and a half times as much as was manufactured in mills in 1860. The number of pounds consumed in private families is inconsiderable in proportion to the whole quantity. The largest bulk of it has been exported to fatten transportation agents, eastern manufacturers, jobbers, and dealers. The remedy is to induce capitalists to invest in mills and machinery for manufacturing woollens, and to return to the simplicity of the fathers, and make our own clothing, blankets, and woollen goods in our own houses, and by our own firesides. Is sheep-raising in Iowa profitable? It has been already demonstrated that shelter, through the growth of artificial groves and the cultivation of timber on the prairies, can be readily produced. It has also been shown that the soil is admirably suited to the cultivation of the different tame grasses and pasturage which are so important an element in the successful growing of sheep. It could be shown, by a like accumulation of evidence, that no country in the world can produce corn, oats, root crops, &c., so readily and cheaply as Iowa. No one now doubts the fact that the climate is equally favorable with other localities to this interest; and it remains to inquire, will sheep-growing pay? Can the farmer convert a part of his grain fields into pasture? Can he divide his farm by fencing? Can he incur the necessary expenses of stock, shelter, &c., and at the end of a year or a series of years receive his own with usury? Some may ask the question in this wise: Shall Iowa abandon her immense hog and cattle product, and embark in the general rearing of sheep? These questions may not be answered, without becoming obsure, unless some space be allowed for comparison and analysis. It is hoped that what is here introduced may not be considered irrelevant, for these subjects are difficult to exclude in taking a careful view of the whole subject. In 1863 the different railroads in the State carried out 68,976 cattle and 518,049 hogs for the eastern market; and these constitute but a small portion of the exports, to say nothing of that raised for home consumption. Thousands of hogs and many head of cattle are slaughtered and packed at the numerous large establishments in this State, and are exported in marketable shape. This is and has been an immense source of revenue to our people that is by no means to be despised. Though much of the product is consumed in the carrying trade by reason of its relative bulk and value, and we cannot control our own prices, but are subject to all the fluctuations of the eastern market, still these exports have made us comparatively rich, and given us the comforts of substantial prosperity. The production of cattle and hogs, therefore, must not be abandoned; nay, more, it must not be diminished. An enormous quantity can be profitably reared without in the least degree affecting the wool-growing interest. Think for a moment of the millions of acres of unimproved land on which cattle may graze and thrive without a dollar of expenditure on the part of the grower; remember the immense surface—almost ready prepared for the husbandman by the beneficent hand of nature—annually planted in the different cereals; the vast quantity of the product, with even exhaustive modes of cultivation; remember that these are and have been for years our principal articles of export, and let no man in Iowa commit the suicidal act of diminishing her product under any circumstances.

Durham and Devon cattle are not an experiment in Iowa; they have been tried and are not found wanting, as can be abundantly proven. Writes Mr. Day, of Van Buren county: "I will here say for the benefit of those unacquainted with the Durham cattle, that I have had, until the last two years, the native cattle kept together with my Durhams on the same feed, summer and winter, and the Durhams have shown as great hardiness as the natives have through heat and cold; and further, quite as great a portion of the Durham cows have proven to be good milkers as the native stock." I have sold steers of such crosses (half-bloods) at thirty months old, off of grass, at $35 per head, when the native stock steers were bought at the same time, and by the same dealers, at four years old, for $20 per head. Writes my friend, C. D. Bent, of Johnson county, speaking of their adaptation to this stock: "The Devons are a hardy race; their energy and perseverance make them well adapted to the rough forage of winter pasture, as it is termed, or ranging in the stock-field, and while so doing, and while ranging on the prairie, they are found to thrive faster, and do much better than the other cattle upon the same range." Now, if thorough-bred cattle, which are generally supposed to require more attention as to shelter, feeding, &c., will thus thrive, much more will the common stock of the country flourish and be a source of revenue. Iowa cannot afford to lose a particle of her attention to the rearing of cattle, but her farmers must put forth every effort to improve the stock, and largely increase the annual product.

Already it has been observed that sheep-growing has become a mania in some localities; farmers, stimulated by the high price of wool, investing all their surplus capital in sheep to the almost entire neglect of other branches of stock-raising. *Sheep will pay;* but shall we run into the astounding folly of excluding well-tried sources of profit in husbandry for the sake of one promised, and as yet untried? Sheep will pay; but it is under certain inflexible conditions to which the grower must yield. Horace wrote—

> Est modus in rebus; sunt certi denique fines,
> Quis ultra citraque, nequit consistere rectum—

and happy and blessed is the man who can escape the extremes where lie ruin and disaster, and steer the middle course where dwell certain success and prosperity. Men to-day are bringing thousands of sheep into the State who are not only but very poorly, if at all, prepared for them, but who are ignorant of the first principles of their management; know nothing of their diseases and remedies; know nothing about feeding, breeding, sheltering, shearing, or marketing. Can these reasonably expect large profits? The experience of the past is against the expectation. It might be that fortuitous circumstances may surround them, and they may succeed; but the success will not be the result of the careful application of sound knowledge and discretion, but a stumbling fate which could as readily have brought loss and ruin. A specialty, if it were possible to reduce our agricultural resources to one branch, would ruin us beyond redemption; and the idea is by no means to be tolerated. The fact is, (and we can scarcely refer to it too frequently,) our people have endeavored to make hogs and cattle the specialty of our agriculture, and the result has been that other interests, among them sheep, have been greatly neglected. But, on this account, shall sheep take precedence of other stock? Shall we embrace the other extreme? A word of caution may not be amiss here. "Festina lente." Hasten slowly is a maxim of incalculable value to all who are embarking extensively in sheep-raising. Sheep will pay if you are ready to expend labor, time, and money, accompanied by a sound knowledge of the wants of the animal, and the application of that knowledge to those wants. If not, you must expect losses and discouragements. Above all things avoid the hurtful idea that a large flock of sheep is all an Iowa farmer needs. Get the flock, but neglect not the herd.

We cannot forbear to further illustrate the hurtful effects of avoiding sheep

altogether in the past and giving entire attention to hogs and cattle; and like effects will follow if sheep are made a specialty. Why are so many farms barren of the orchard? Because fruit does not pay, and it is neglected for cattle and hogs. Why is not more flax cultivated, both for the seed and fibre? No time to attend to such small matters. Why does not every farmer keep some good milkers, and raise butter and cheese enough for his family and a large surplus to sell? Because he regards it as trifling business. Why is there no time for adorning the home with lawn and shrubbery; to beautify the farm with hedging and groves; to add to the comfort and insure the health by a vegetable and fruit garden? Because the hogs must be fed and the cattle cared for. Let the corn crop fail, and what recourse has the farmer? Nothing to fatten hogs and cattle, and he goes into market with indifferent stock. But a mixed agriculture cannot fail to return a magnificent percentage on the labor and capital invested. Corn, wheat, oats may be a short crop from unavoidable causes, but our grasses never fail when properly set. A dry summer may parch them; a wet season may cause a too rank and luxurious growth; but should this occur, the labor of seeding and all the expenses of putting in the crop are avoided. And the revenue from the pasture and meadow is almost absolutely certain. To illustrate: Asa C. Bowen, of Jones county, sold, in 1863, one thousand dollars' worth of cheese from thirty cows, mostly native stock, and only a portion of them first-class cows. How is this result? From the fact that he pastured nineteen head of cattle and three horses on thirty acres, and the feed was all that could be desired until after harvest; and this, too, in 1863, a year that will long be remembered for its drought, from which all the crops suffered. Thus the dairy is a source of profit; fine blooded cattle flourish and maintain their superiority; hogs bring in an abundant income. What supreme folly, then, to abandon or diminish the numbers of these, and launch forth upon a sea that, to very many, is unexplored. Let Iowa continue her productions in these directions, and let her rear sheep and grow wool as an additional profitable element of husbandry; let her people be getting ready more and more every year for this great work; let associations be formed to discuss experiences and compare results; let all the tame grasses be cultivated with assiduity; let men import the very finest blood of sheep; let every farmer determine to raise sheep as a part, and only a part, of his profession, and there is every reason to anticipate an abundant ultimate success. But if she abandons her present unfailing sources of income, and madly, blindly, and foolishly turn her exclusive attention to sheep, her people cannot fail to be discomfited, and the old story will be repeated—"Iowa is no place for sheep," and our civilization will be set back at least a half score of years.

This State is so new in its intelligent experiences of sheep-husbandry that reliable data are difficult to obtain. The exact effect of our peculiar climate on the fibre is not determined. The general fact of health and disease is not established. The wool-grower of Iowa has no past, for the earlier attempts are but a series of loss and discouragement. It is asserted by Hon. J. B. Grinnell, an accomplished scholar, and a man, perhaps, better versed in sheep on the prairies than any other in the northwest, that foot-rot will not abide with us; that flocks driven into this country with the disease recover from it without attention. This is a most encouraging statement. The other diseases mentioned by Mr. G. are attributed mostly to some species of mismanagement, and have nothing peculiar. Mr. H. B. Hoyt, of Fayette county, (to whom reference will be made again,) says: "Our flocks are subject to no disease; the scab, foot-rot, and grub in the head have never made their appearance in this locality; whether it is owing to the healthiness of our climate, or that no such disease has ever been contracted by our flocks, is a matter not thoroughly demonstrated." The early wool-growers lost many of their sheep by foot-rot. The family of Johnson Pierson brought with them from Virginia, in 1837, fifteen hundred

sheep; the disease decimated his flock, and so discouraged him that he abandoned the enterprise. Mr. Brownlee, at the same time, brought five thousand head from Pennsylvania, and had a similar experience. It will take a series of years and much recorded testimony to settle the questions now under consideration. No one can assert positively that there will not be necessity for the farmer to make occasional pilgrimages to Vermont to procure some different blood in order to preserve the fineness and other qualities of the flock.

COMPARATIVE PROFITS.

The following lengthy quotation from Mr. Hoyt will be read with interest:

"An estimate of the profits of sheep-raising could not be easier arrived at than by the usual custom of letting sheep in Iowa. Take, for example, one hundred head of ewes, to be let for one year—the owner to receive one-half the wool and one-half the increase, the original flock to be returned, and we have the following figures: 500 pounds of wool, at sixty cents per pound, $300; 80 lambs, at $2 50 per head, $200; total, $500; the owner's half, $250, which would be fifty per cent. on $500, a fair valuation for a flock of one hundred ewes.

"For a more accurate estimate on the profits of wool-growing, the writer has given below a true statement of his own flock of 300 Spanish merino sheep, the hay and grain estimated as accurately as possible without weighing; other figures are exact:

Forty tons of hay, at $5 per ton	$200 00
Five hundred bushels of oats, at 25 cents per bushel	125 00
One hundred bushels of corn, at 30 cents per bushel	30 00
Washing and shearing	20 00
Herding on prairie with another flock	40 00
Man feeding six months through winter	60 00
Interest on fifteen hundred dollars, value of flock	150 00
Total cost	625 00
Seventeen hundred and eighty-eight pounds of wool, at 63 cents	1,126 44
One hundred and eight lambs, worth $3 per head	324 00
	1,450 44
Less the cost	625 00
Total profit	825 44

In the report of the Commissioner of Agriculture for 1862 are found some interesting statements as to profits of sheep-raising. Reducing the number of ewes to the same as Mr. Hoyt's flock, we have the following:

Name.	Residence.	Kind of sheep.	Profit.
James E. Bonine	Vandalia, Michigan	Merinos	$1,103 44
W. H. Ladd	Richmond, Ohio	Silesian merinos	1,455 00
G. F. Quimby	West Salisbury, N.H.	Spanish merinos	309 00
Samuel McFarland	Washington, Pa	Saxon merinos	351 00
John S. Goe	Brownsville, Pa	Spanish merinos	3,042 00
J. B. Hoyt	West Union, Iowa	Spanish merinos	825 44
B. W. Couch	Warner, N. H	Atwood merinos	972 00

Number of pounds of wool by each person: Mr. Bonine, 1,822½ pounds; Mr. Ladd, 1,530 pounds; Mr. Quimby, 1,350 pounds; Mr. McFarland, 900 pounds; Mr. Goe, 1,650 pounds; Mr. Hoyt, 1,788 pounds; Mr. Couch, 1,800 pounds.

It would be superfluous to enlarge and comment on these figures. They speak for themselves, and make a record of which Iowa may be proud, and which speaks a word of encouragement to every man who has invested capital in sheep. It is hoped that other growers will follow the example of Mr. Hoyt, and preserve data, from which the profits of wool-growing may be determined with precision.

Thomas McGiffin, esq., president of the Wool-growers' Association of south-eastern Iowa, writes thus: "There is no such great art in the management of sheep that any man of ordinary capacity cannot become a good shepherd in a short time. Patience and good feeding have often done more for the animals than theories and experiments, though tried by intelligent men. A patient, quiet man will become rich by the side of a scientific gentleman, who can scarcely make his income meet his wants. Sheep will do well where the land is very flat, by having drains to lead off surface water. Wherever cattle and horses and hogs live and thrive, sheep also will live and thrive, and, taking any given number of years, will prove the most profitable to the owner. Sheep have done finely in Iowa the past year, notwithstanding the severe winter and the backward spring. My ewes yielded as much wool as in Washington county, Pennsylvania, and came from thence in the fall, out of short pasture, carried through, and with little time to recuperate before the cold set in. They raised eighty per cent. of lambs; and they are equal, in carcass and wool, to the average production of that famous sheep county. The wool has not been one particle injured by the change, and never will be, with judicious selections of bucks and prudent management. Whenever we have good tame grasses for spring and fall pasture, and plenty of tame hay to feed *under cover*, when the wind blows too keen for out-door foddering, and the necessary shelters, no portion of this land will raise better sheep or finer wool. If the sheep in the east received no more attention than some do here, their losses would be as great—in fact they are as great, to my own knowledge. The great trouble with almost all stock men west is the idea, that unless they move by the thousand they do not move at all, and, consequently, gather up all sorts of sheep in large flocks, herd them, and pound them to death. The same treatment would ruin all the flocks in the United States. Large droves have been brought into Iowa that were raised by the kindest of owners, under shelter of the best kind, and no sooner landed here than they are compelled to breast the storm of wind, rain, sleet, and snow, until nature can endure no more, and the poor things die, to leave their pelts, if the owner takes care of them, to pay for such bad treatment.

"What is to be done? Get material for some kind of shelter against the fiercer elements, and the milder ones will not hurt the flock. Divide your flocks, so that the weak can get a full, fair bite, without being run over by the strong. Keep cattle, colts, hogs, and mules *out* of the sheep-houses and *in* their own, and many deaths, uncertain as to cause, but certain as to loss to the owner, will be very often prevented. When spring comes, do not turn the ewes out in the bleak prairie to lamb and the offspring to perish. No one has ever succeeded who neglects his flock, in any state or climate. Storms occur everywhere at times, and kill as often in Vermont as in Iowa."

Wool traders have paid very good prices for "western wool," known heretofore as such from the amount of dirt, burrs, &c.; and the wool-grower is looking forward to still better prices for the coming clip. If it is well cleaned, there is no doubt but that his expectations will be realized; but eastern prices cannot be had until the sheep are kept on good sod or in well-littered shelter. The "unsightly" appearance complained of by the buyers is caused by the filthy pens and pounds, and often by the black water of the washing stream. Let western men learn how to keep sheep, through as many years of patience and devotion as eastern men, and they will gain equally in purse and reputation.

Let farmers sow more grass-seed, have more pasture and meadow, clean out the burrs, and make a good home market, and they cannot fail to become independent through their flocks. Then, again, the influence of sheep husbandry will soften down the rough points of the boys, make home attractive to them, and increase the desire for education, books, and the more gentle pleasures of life. Feed well, shelter well, have a well of patience as well as of water, and no man need fail of success in raising sheep in Iowa.

Thus in sheep-growing, as in every other branch of industry, "there can be no excellence without labor." Skill, management, energy, *preparedness*, are all required by the farmer in Iowa who ventures upon the raising of sheep.