

THE SOUTHERN PLANTER.

Devoted to Agriculture, Horticulture, and the Household Arts.

Agriculture is the nursing mother of the Arts.—
Xenophon.

Tillage and Pasturage are the two breasts of the
State.—*Sully.*

FRANK: G. RUFFIN, EDITOR AND PROPRIETOR.

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From the London Farmers Magazine.

ON INCREASING THE SUPPLY OF OUR RIDING-HORSES, AND THE ENCOURAGEMENT BREEDERS SHOULD RECEIVE FROM OUR AGRICULTURAL SOCIETIES.

It has been our duty frequently within the last two or three years to impress upon our agriculturists, or those whom they take as their leaders, the good policy of more directly recognizing and encouraging the breeds of our hunting and riding-horses. With the exception of the Yorkshire and Suffolk Societies, we do not know one in either England, Scotland, or Ireland that has given any thing like that attention it should to the merits of the well-bred horse. In fact, such associations but too commonly pass him over with the most studied indifference. It would almost appear, from their proceedings, that the breeding of good horses was not a matter of sufficient importance to command their countenance; or, at any rate, not a pursuit upon which the farmer should be expected to engage.

The grand object of course of an agricultural exhibition is mainly obtained by the force of example. That, then, which such a body does not invite to take a place at its meetings, we may justly enough conclude it indirectly tends to ignore. The effect, in fact, can scarcely be otherwise. Cattle, sheep, pigs, even poultry, and perhaps draught horses—but no further. Since, however, we first touched on this subject as a matter of policy, it has become one of necessity. Some would have it that our roadsters and hunters were sadly deteriorating; the more cause then for our looking to them. Thanks, though, to those too often maligned works—the Racing Calendar and the Stud Book—this was quickly seen to be but a false alarm. We may be short of horses, as little doubt we are; but never were there such opportunities for breeding good ones as we at present enjoy. Hunters, hacks and chargers are still rising in price; the very

government has had to spring a figure. Nothing, in a word, promises to pay, or has paid, better of late, than that constant desideratum, “a good sort of horse.”

And who, pray, should be the first to profit by this? From whom should we look chiefly for the supply to meet a demand so long growing upon us? The answer is self-evident. Who can breed him so cheaply, or rear him with so little inconvenience, as the farmer? It is his business in fact, we might almost say his pleasure. But it is a business he has sadly neglected, and one that few have cared to put him in the right way of proceeding with. They will tell him that he *must* have the best blood for a Shorthorn or a Devon, for a South-down sheep, or a Berkshire pig. They put the best sorts before him, and insist upon the absolute need for his using them. It will pay him to do so. At the same time they take no heed of the best blood for horses, but let him cross under-bred animals with perhaps worse, and hence the rips on the strength of which “our breed of horses is deteriorating.”

We introduce with this at a season but too opportune, a letter from our esteemed correspondent, Mr. Willoughby Wood. We trust that we shall not be accused of partiality when we pronounce it to be, in our opinion, one of the most valuable papers ever written on the subject to which it is devoted. Mr. Wood, it will be found, goes at once to the evil and the remedy. The former is the sheer neglect with which agriculturists have regarded the breeding of riding-horses. As he truly says—“Farmers who would not grudge trouble with regard to any other department of their business, are in this matter unaccountably remiss. They put their mare to the first horse which walks into their yard, having no knowledge whatever of him; while they are ignorant of the very existence of horses of first rate reputation standing a few miles from their own residence.” This is it. And yet our

country gentlemen, if they have pre-eminently a taste, it is for hunting, and the use of a good horse. So they assemble in committee, and start societies, and draw out prize lists, and invite their tenants to breed good oxen and sheep; but not a word about good horses. We don't want them; and they wouldn't pay perhaps. Unfortunately we do want them; and they would pay—hardly anything better.

But, then, as a rule they must be good. The means to ensure this are simple enough. It is but the same principle on which we obtain all other good stock—by the use of the best bred animals. Now, there is no animal in this country so purely bred, or none whose influence is so strong on what he may be crossed with, as the thorough-bred horse. Mr. Wood's receipt is what has always been our own; put your hackneys, and half-bred mares of all descriptions, to none but the thorough-bred horse. Considering the perfection to which we have brought him, it is astonishing to see how often we are urged to bring him down again. Mr. Wood refers to some of this nonsense—for it is really nothing more—which it seems was given some time since in "a highly popular publication." We do not ourselves remember to have seen it, but it can certainly have been no great loss. To improve our cavalry, the magnificent, powerful and high-couraged English race-horse is to be passed over, and we are to go back to the Arab, and breed weeds and palfreys. We fancy our contemporary, "the highly popular publication," whatever it may happen to be, did not gather its renown on the strength of such reasoning as this.

The proffered advice from Mr. Spooner to the Royal Agricultural Society, for crossing half-bred mares with half-bred horses, was so palpable a mistake that we took upon ourselves at once to show its fallacy. We have no doubt but Mr. Spooner wrote with the best intentions; we gave him every credit for doing so at the time we noticed his communication. Unfortunately, however, he took the fact of any one daring to differ in opinion with him as a mortal offence, and replied in a spirit that we should be very sorry to imitate. We can venture still to assure him that there are not ten men in England, who know anything about the breeding of a horse, that would be likely to back his theory.

We commend Mr. Wood's remarks on this point to his especial attention. We commend the whole letter to the several committees and managements of our agricultural societies, great and small. Honestly, it touches on a duty they have but so far neglected. Above

all, we would commend it to the farmer himself. It will be to his interest to study more carefully the subject of it. He has every means ready at hand for following out the advice here offered. If he so chooses, he may breed good horses even with the material he now has, and so, with far less expense than he would, or has, set about producing good beasts or sheep. Let him search out a thorough-bred stallion in his neighborhood. Let him run his eye over the list of stallions, as given each succeeding spring in the Farmer's Magazine—some hundred and fifty really well bred horses. There are many more, no doubt, never advertised at all; and we should so surmise there are few homesteads in England without one handy. What, then, is to prevent the farmer from rearing a colt or two annually, that it shall be his pride to show and his profit to sell.

We hear the Council of the Royal Agricultural Society had some intention of offering a series of such prizes as are here referred to, for the ensuing meeting at Carlisle. They, however, were ultimately induced to confine any thing extraordinary in this way to the classes of Clydesdales. We can only say that we are very sorry to find they cannot do more.

ON INCREASING OUR SUPPLIES OF CAVALRY HORSES.

Sir,—I address you once more on the subject of horses. My object in doing so is, the great importance to the country which an adequate supply of cavalry horses is beginning to assume. During the two last years, the demand for every description of useful horses has exceeded the supply. Agricultural horses never were known to be so scarce, nor to fetch such prices. Three year old fillies have in many districts fetched upwards of £50, and colts of the same age £60, while even foals have commonly been sold for £20 each—a price which, some years since, would have bought a colt of an age fit to work. The prices of hunters have been, and still are, enormous: indeed, of those which combined power with good looks, it may be said that the value is pretty nearly what the owner chooses to put upon them. Such being the case, it cannot excite surprise that it has lately been found necessary to raise the price given for cavalry horses which may be regarded as forming a class between those used in agriculture and those devoted to the chase. Of ordinary troop horses, indeed, a certain number would, if not purchased for the army, have been employed in farming operations, being the most

active and best breed of that class; while the remainder would have found work as low-priced hunters, as hacks, and carriage-horses. It is thus evident that an extraordinary demand for troop-horses must always, of itself, tend to diminish the supply and raise the price of the general stock of horses throughout the country. But at the present time, co-existently with such a demand, there is also a greater demand than usual for farm-horses, while the call for hunters does not appear to diminish, and that for hacks and carriage-horses is probably also on the increase. Under these circumstances, the supply of horses is, for many years to come, likely to fall short of the general demand for them; and, as a natural consequence, their price will be higher than it has ever been.

It becomes, then, a question of importance alike to the community and to the agriculturist. How is the supply of horses fit for cavalry purposes to be increased? It is an anomaly which ought not to be borne by a nation so celebrated as ourselves for horses, that we are only able to send our cavalry by hundreds, when our enemy sends his by thousands into the field. If, therefore, we are to increase the force of our cavalry regiments, as not only patriotism but common prudence calls upon us to do, it follows that the agriculturist will find highly remunerative employment for his capital in the breeding of horses.

To point out the manner in which he must proceed in order to produce the best animals, and thus to realize the highest prices of the market, has been the object of the letters which I have already addressed to you. In the present communication I propose to confine my remarks to one point—viz., the choice of a sire.

A paper appeared a few months back, in a highly popular publication, on the subject of cavalry horses, in which the writer assumed that the bulk of those at present used in our army were too large; that to cross our ordinary breeds with thorough bred horses would only add to the evil, inasmuch as it would add upright shoulders and washy constitutions to overgrown size; and suggested as a remedy the cross with Arabian sires. The assertions of the writer with regard to thorough-bred horses I shall at present pass over, with the remark that they can only have been made by one practically unacquainted with the noble breed which he libels. But are our cavalry horses too large for their work? Certainly, not those of the ordinary regiments. With regard to those of the Life Guards, the Blues, and other heavy regiments, the answer may be

doubtful; but, at any rate, the weight they have to carry must be lessened before the horses themselves can be reduced in size and substance. The work which a troop horse has to do much resembles that of a weight-carrying hunter, with the proviso that it is more severe, and that speed is not so primary an object. Now the best size for a hunter is from fifteen hands two inches to sixteen hands, both inclusive. A horse below the former height seldom fetches more than a moderate price for this purpose; and a tolerably long experience in the hunting-field convinces me that this is not a prejudice, for, although I have possessed many excellent horses of small size, not one of them was entitled to the appellation of a first-rate hunter. That is to say, whatever might be their speed, however extraordinary might be their powers of fencing, they were unable to go through a severe day, in which both endurance and speed were required in the highest degree, without exhibiting undue signs of distress. On the contrary, I have had several horses above the size which I prefer—that is, more than sixteen hands, which were able to go through runs of more than ordinary severity, with ease at the time, and without requiring a longer rest than usual to recruit them. I conclude, therefore, that from fifteen hands two inches to sixteen hands is the best size for cavalry horses, as for hunters.

With regard to the use of Arabs as sires for cavalry horses, I wish to speak with considerable diffidence, because my own personal experience of them is but limited. As far, however, as it extends, it is decidedly adverse to their employment, unless in exceptional cases. The few Arabs I have seen were characterized by the upright shoulders which the writer to whom I have alluded attributed to our thorough bred horses. They were, moreover, low in the forehead (an unpleasant conformation for the rider,) and apt to be too drooping at the pastern. The progeny of Arabian sires, out of English mares, is usually small and light of bone, though pretty, and possessed of showy action. Their character is that of park-hacks or of ladies' horses; and they would at once be rejected by any officer purchasing troop-horses, as unfit to carry even the lightest of our so called "light-cavalry troopers. Unless, then, for the exceptional case of an over-sized or enormously powerful mare, it is useless to expect cavalry remounts from the use of Arab sires.

A much higher authority has recommended that recourse should be had to sires like the weight-carrying hunter, with the view of perpetuating the breed of horses under consid-

ration. I am convinced that such advice, if largely carried out, would lead to the most fatal results. Your readers may perhaps recollect that I have always strongly insisted upon the necessity of purity of race on the part of the sire, whatever may be the class of animal which it is desired to produce. That the male ought to be thorough bred, or of an accredited pedigree, and of a higher caste if possible than the female, is a maxim I believe unanimously upheld alike by the highest theoretical and practical authorities in breeding. For my own part, I never knew it departed from without signal failure. Taking only one or two of the more obvious considerations connected with such a course into account, it is obvious that such must be the almost inevitable consequence. On what ground does any man, who reflects at all, select a sire? Why, that he wishes her offspring to resemble him. But it is well known that the power possessed by either parent of imprinting their own type upon their offspring depends upon the purity of blood and antiquity of race of each. Thus the offspring of a thorough bred short-horn bull and a common cow will frequently resemble very closely the character of the pure short-horn. In like manner, when a hackney mare or a Welsh poney is put to a thorough bred horse, the offspring shows indications of being much more than half-bred, or in other mares it resembles its high bred sire more closely than its low bred dam. Supposing then that a person wishes to have a horse resembling a three parts bred weight-carrying hunter, the most unlikely method which he can take to gratify his desire is to put a mare to a stallion so bred. Like effects are produced by like causes, and by no other. His weight-carrying hunter having been produced not thus, but quite otherwise, so he may be assured that only as it was produced, and in no other way, has he any chance of obtaining its like again. A three parts bred sire, let his individual excellence be what it may, is a mongrel and nothing else; and it is against every calculation of probability to assume that he will perpetuate his own good qualities to the exclusion of the baser elements which exist in his pedigree.

Or, to view the subject for a moment under another aspect. It is quite possible that the great grandsire of the three parts bred stallion may have been a cart-horse. It is notorious that in numerous cases the offspring partakes less of the character of its immediate parents than of its remoter ancestors. Who then shall guarantee the offspring of such a sire from exhibiting one or more of the undesirable qualities of such a cross, either the

heavy shoulder, or the deficient courage of the cart-horse? Let no authority then, however high, tempt the farmers of England so far to depart from sound principle as thus to breed; for they may be assured that by so doing they are, in a matter sufficiently dark and intricate, throwing away every guide and landmark which might otherwise aid them in their course.

The only method of increasing the number of really valuable horses which can be depended upon, is for every man who has a good mare, of whatever breed, (always excepting those only adapted for the dray) to send them to the best thorough-bred stallion within his reach. If a mare is worth breeding from at all, she will in this manner produce a better foal than any other. Suppose, for instance, that she is a cart-mare, at once powerful and active, a good bay or brown, quick stepping, and with a roomy frame; it is highly probable that her offspring by a well-selected thorough bred horse will turn out a handsome carriage-horse, or one well adapted for artillery service. Suppose, however, that her owner does not desire to sell her for either purpose, and only wishes to breed for the purpose of recruiting his team. Well, in that case he will obtain an animal which will accomplish, if well kept, at least one-third more work than an ordinary farm-horse. Were the teams of my Staffordshire and Derbyshire neighbors thus bred, they might diminish their number by one-third without impairing their real strength. The old-fashioned prejudice that because a horse is fit for a higher occupation than drawing the plough, therefore he is not fit for that, is deeply rooted over a large portion of the kingdom; but it must yield at last to the force of truth, and ocular demonstration of the contrary. Or take the ease of a mare of somewhat inferior grade—such, for instance, as the farmer drives in his trap, or the tradesman in his light cart; what useful and valuable horses might we not expect from their union with a thorough bred horse? It is from animals so bred, that horses for almost any conceivable purpose are furnished. According to individual peculiarities exhibited by each, will one colt make a hunter, another a light or heavy cavalry-horse, another a hack, or another still a brougham or cabriolet-horse. In one, power may predominate; in another, action; of some, their figure may be the chief recommendation; while a fortunate few will possess all three in due and happy combination. These are the high-priced hunters or the guardsman's chargers.

Of mares more highly bred than the two classes I have alluded to, I shall not here speak, since they are certain, if used for stud

purposes at all, to be put to thorough bred horses. I wish to impress upon agriculturists, and to induce land owners to impress upon their tenants, the expediency, under present circumstance, almost amounting to a duty, of providing an increased supply of horses, available for the military service of their country. The course which I recommend is one, which, so far from causing them extra expense, will, if properly carried out, bring them in as large a share of profit as the rearing of any other kind of stock. The real state of the case is this: In every district there are to be found numerous mares with abundant strength, and with many other good points, but wanting that one quality, (without which the horse ever remains the pariah of his tribe,) viz. the power to move with speed and ease. Put such mares to a stallion no better bred than themselves, and you perpetuate the disqualification in their offspring. Such is the parentage of the hundreds of low priced brutes which disfigure our fields, and are a drug in our fairs. It seems as though some evil-disposed enchanter had cast his spell upon them, and condemned them for the term of their existence to the slavery of the higgler's cart, since for lighter labor they are utterly unfit. No effort of their own, no external persuasion, could take them over four miles in half an hour. A horse which cannot on a pinch do thus much is worthless indeed. But put the mare which I have described to a thorough bred horse, with good action, and the spell of immobility is removed as regards the foal. He will pick up his feet freely, and set them down in front of him; his muscles will be supple, his bone flat, and his gait easy; and all this without the sacrifice of power or substance. Indeed I would caution the inexperienced breeder who has such a mare, not to select too large a stallion, for the offspring of such a union is apt to err rather in over-size and in clumsiness than in deficient power.

In former letters I have adverted to the strange mistake so commonly made, of connecting the idea of high breeding with want of substance. It may suffice here to repeat, that by no other means than by those I am now recommending, is so much *efficient power* to be obtained. If, indeed, you want a "stand still horse" for show, there is nothing like a dray horse; but if you required one to carry from fourteen to seventeen stone on his back at a moderate pace, or to draw a heavy carriage, or to assist in moving a gun, depend upon it there is nothing superior to the offspring of a useful, clean-limbed, working mare by a thorough bred horse.

It is an important matter to be certain that the stallion you employ is actually thorough bred. Many horses travel up and down the country with long and showy pedigrees, professing to be thorough bred, which are not so. I last summer, in Yorkshire, saw in the same field two mares, one the daughter of the other. The elder mare was not only the better shaped of the two, but gave tokens of being better bred. I inquired of the owner whether the sire of the younger was a thorough bred horse? He answered that his owner asserted him to be so; but that he suspected this was not the case. On looking at the horse's pedigree I found that he could not be thorough bred. Such I believe to be a by no means uncommon case, even in Yorkshire. But farmers who would not grudge trouble with regard to any other department of their business, are in this matter unaccountably remiss. They put their mare to the first horse which walks into their yard, having no knowledge whatever of him; while they are ignorant of the very existence of horses of first rate reputation standing a few miles from their own residence, perhaps in the very town whose market they weekly frequent. The only proof of a horse being thorough bred, which ought to be relied on, is the fact of his being in the Stud Book. It is a great advantage if he is also to be found in the Racing Calendar. It is by no means necessary for ordinary purposes that a horse should have been a brilliant winner; but a preference ought certainly to be given to one who has done something. For my own part I would far rather pay £5 for putting a mare to a horse whose speed and bottom had been proved by frequent victories, than £2 for the services of one who, never having tried, might be a worthless brute.

Of the other essentials of a stallion, next to high pedigree and proved prowess, I would place the formation of the shoulders, the position and conformation of the fore-legs, and the shape of the neck and head. On these, space not permitting me to dilate, I must condense my meaning by saying that no horse ought to be used for the class of mares I am speaking of, which has not shoulders well receding, a good fore-hand, a refined head, and a neck long enough, yet with sufficient substance; above all, his action must be as good as possible, as much of the value of his stock will depend upon their inheriting this quality.

The convictions which I hold on this subject are the result of no brief experience, and of no cursory observation. Since, however, I have been the owner of Red Deer, they have received additional strength from the opportu-

nities which I have possessed of watching the progress of his progeny from the mares which have been sent to him by other persons. I must say that in numerous instances in which I have prognosticated failure, I have been agreeably mistaken, and that mares whose exterior was of the most unpromising kind, have produced excellent foals by him. In point of size and substance especially, his stock more than bear out what I have always maintained on this subject. I will quote one or two instances. A farmer put two mares of his team, the one to Red Deer, the other to a cart-horse. The difference in size is so striking between the two foals, that persons at a distance always mistake in guessing which is the son of the thorough bred horse. Another farmer put an insignificant looking little mare, about fifteen hands high, to Red Deer. The foal promises to obtain great size, while his action and general appearance seem well suited for making him a hunter. I have two foals of my own out of thorough bred mares, one by Red Deer, enormously lengthy, and of great strength; the other by a Yorkshire coach-horse, (the mare having belonged to a farmer previous to my purchasing her,) which is small and insignificant, compared with the first. It is probable that the coach-horse might weigh half as much again as Red Deer, and therefore to the inexperienced would seem to possess more substance. The surplus, however, being chiefly made up of fat and "offal," is not transmitted to another generation. I attach next to no importance to the size of the sire, provided he does not come of an under sized family. Gameboy is a small, mean horse in appearance, yet is the sire of several winners at the Yorkshire agricultural shows. His blood, that of Tomboy, when I have already eulogised, is sufficient guarantee for the excellence of his stock. Red Deer, standing sixteen hands high, is rather above than under the medium size; while his blood, being that of Venison on one side and of The Colonel on the other, cannot be surpassed either for endurance or for speed, nor have his achievements on the course often been exceeded. Such are the sires likely to beget stock suitable for every purpose for which they may be required.

On another occasion I may, perhaps, enter into details connected with the mutual relations both of form and blood between sire and dam calculated to ensure the most successful results as regards the offspring. At present, both time and space forbid me to say more than that, as a general rule, a better foal will be obtained from a useful but somewhat under bred mare, by putting her to a good thorough

bred horse, than by resorting to any other cross.

I remain, your obedient servant,
WILLOUGHBY WOOD.

From the N. Y. Banker's Magazine, Sept.

GRAIN CROP OF 1855.

- I. Growth of Wheat in each State, 1847, - '50, -'55. II. States in which there is a deficiency of production when compared with consumption. III. Export from the U. States, 1847, -'54. IV. Average production per acre, and period of harvesting. V. States producing surplus beyond consumption. VI. European Wheat Crop.*

The importance of the grain crops is such to every class of the community, that we have taken pains to form reliable estimates from the most available sources, as to the production of the present year throughout the United States. The general result, so far as the wheat crop is concerned, will be highly satisfactory to the whole country; and will show that while we have the greatest abundance for our population for the next twelve months, we have a liberal surplus for export to Europe and South America.

Some of the States show a product of from one hundred to five hundred per cent. beyond that of 1847, the Irish famine year. This increase is almost incredible, but we think the returns for the current year will fully bear us out in our estimates, namely:

Estimated production of wheat in some of the old as well as new States and Territories in 1855, compared with 1847 and 1850, showing the vast increase in the supply:

	1847. Bushels.	1850. Bushels.	1855. Bushels.
N. Carolina,	2,350,000	2,130,102	4,000,000
S. Carolina,	1,300,000	1,066,277	3,000,000
Georgia,	1,950,000	1,088,534	4,000,000
Tennessee,	8,750,000	1,619,386	8,000,000
Missouri,	1,750,000	2,966,928	7,000,000
Illinois,	4,900,000	9,414,575	16,000,000
Indiana,	7,500,000	6,214,458	12,000,000
Iowa,	1,000,000	1,530,581	8,000,000
Wisconsin,	1,200,000	4,286,131	7,000,000
California,	-	17,328	3,000,000
Minnesota,	-	1,401	8,000,000
Kansas,	-	-	1,000,000
Oregon,	50,000	211,943	1,500,000
	30,750,000	30,457,044	77,500,000

1847 to 1850, no increase.

1850 to 1855, increase 120 per cent.

In the following tables, to which we direct the careful attention of the reader, it will be found that we differ materially from the calculations or estimates of some of our contem-

poraries. The latter were prepared without full research into the probable production of each State. The estimates were upon crude materials.

Nothing can demonstrate more strongly the present productive power and the prospective wealth of the *Great West*, than the official tables of the grain crop of that region. From reliable data we show that Illinois alone will produce this year 6,000,000 of bushels of wheat, or nearly one-tenth of the whole crop of the country. Ohio, 20,000,000; Indiana, 12,000,000; these three States producing more than one-fourth of the whole.

Although the States west of the Mississippi do not at present make much show in the cereal crops, they will soon exhibit a stronger position. Missouri, Iowa, and Minnesota will, in a few years, produce as largely as Indiana, Illinois and Michigan.

Our first table is a comparative exhibit of the product of the years 1847, 1850 and 1855, namely:

I. Estimate of the growth of wheat in the different Territories in 1855, as compared with the production of 1847, as per Patent Office Report; and 1850, by Census returns, viz:

	1847.	1850.	1855.
	Bushels.	Bushels.	Bushels.
Maine,	890,000	236,259	400,000
N. Hampshire,	610,000	185,658	250,000
Vermont,	664,000	525,925	700,000
Massachusetts,	256,000	31,221	100,000
Rhode Island,	4,500	42	
Connecticut,	125,000	41,762	30,000
New York,	14,500,000	13,121,498	15,000,000
New Jersey,	1,100,000	1,601,190	2,500,000
Pennsylvania,	14,150,000	15,367,691	18,000,000
Delaware,	410,000	482,511	500,000
Maryland,	4,960,000	4,494,680	6,000,000
Dist. Columbia,	-	17,370	20,000
Virginia,	12,000,000	11,232,616	15,000,000
N Carolina,	2,350,000	2,130,102	4,000,000
S. Carolina,	1,300,000	1,066,277	3,000,000
Georgia,	1,950,000	1,088,534	4,000,000
Florida,	-	1,027	150,000
Alabama,	1,200,000	294,044	2,000,000
Mississippi,	500,000	137,990	1,000,000
Louisiana,	-	417	
Texas,	1,110,000	41,689	1,000,000
Arkansas,	200,000	199,639	1,000,000
Tennessee,	8,750,000	1,619,386	8,000,000
Kentucky,	6,000,000	2,140,822	5,000,000
Ohio,	16,800,000	14,487,351	20,000,000
Michigan,	8,000,000	4,925,889	7,000,000
Indiana,	7,500,000	6,214,458	12,000,000
Illinois,	4,900,000	9,414,575	16,000,000
Missouri,	1,750,000	2,966,928	7,000,000
Iowa,	1,000,000	1,530,581	8,000,000
Wisconsin,	1,200,000	4,286,131	7,000,000
Minnesota,	-	1,401	3,000,000
Kansas,	-	-	1,000,000
New Mexico,	-	196,516	500,000
Utah,	-	107,702	1,500,000

Oregon,	50,000	211,043	1,500,000
California,	-	17,328	3,000,000
	114,245,500	100,479,150	175,200,000

These estimates indicate a product of seventy-five per cent. beyond that of 1850, and one hundred and seventy-five millions in the aggregate. If we allow three and a half bushels of wheat per head annually, or one hundred millions of bushels for home consumption, we shall then have on hand, for export or future stock, about seventy five million bushels.

The New England States and some of the Southern States are indebted to the West for their wheat and flour; and here the "harmony of interests" is beautifully demonstrated. The cotton of the south and southwest, and the cotton fabrics of New England, go far to compensate the west for this indebtedness. The deficiency in these few States we estimate at about twelve million bushels, namely:

II. States in which there is a deficiency in the quantity produced for consumption, allowing three and a half bushels to each inhabitant in the manufacturing, and three bushels in other States:

	Quantity produced.	Consumed.	Deficiency.
	Bushels.	Bushels.	Bushels.
Maine,	400,000	2,100,000	1,700,000
N. Hampshire,	250,000	1,225,000	975,000
Vermont,	700,000	1,200,000	500,000
Massachusetts,	100,000	3,850,000	3,750,000
Rhode Island,	-	800,000	800,000
Connecticut,	80,000	1,500,000	1,420,000
Deficiency N. E. States,		bushels,	9,145,000
Dist. Columbia,	2,000	250,000	230,000
Florida,	150,000	325,000	175,000
Alabama,	2,000,000	2,400,000	400,000
Mississippi,	1,000,000	1,500,000	500,000
Louisiana,	-	2,000,000	2,000,000
Total deficiency in ten States,			12,450,000

III. As a vast source of income, and as a means of paying a heavy indebtedness to Europe, let us look at the aggregate value of our export of bread tariffs. And in this exhibit, we certainly have cause for congratulation, namely:

Exports of breadstuffs and provisions from the United States to foreign countries, for each fiscal year from 1846 to 1854, namely:

1846,	\$27,701,121	1851,	\$21,948,651
1847,	68,701,921	1852,	25,857,027
1848,	37,472,751	1853,	32,985,322
1849,	38,155,507	1854,	65,901,241
1850,	26,051,373		

IV. We must look to the Mississippi valley, and to the really far west, (Texas and Oregon,) for prolific soils. In order to show the rela-

tive productiveness of the several States, we have examined the subject carefully, and we think the following conclusions are very near the truth :

Tables showing the average number of bushels per acre, and the time of harvesting in each of the principal wheat growing States :

States.	Average per acre.	Time of harvesting.
Maine,	7 to 12 bushels.	Aug. 10 to Aug. 20.
N. Hampshire,	12 to 20 do	Aug. 1 to Aug. 10.
Massachusetts,	10 to 20 do	July 25 to Aug. 10.
Vermont,	15 to 25 do	Aug. 10 to Aug. 20.
New York,	10 to 20 do	July 15 to Aug. 20.
New Jersey,	15 to 25 do	July 1 to July 10.
Pennsylvania,	12 to 25 do	June 20 to July 10.
Delaware,	12 to 20 do	June.
Maryland,	10 to 20 do	June to July 1.
Virginia,	10 to 20 do	June 15 to July 10.
N. Carolina,	8 to 15 do	June 10 to June 25.
S. Carolina,	8 to 12 do	June 1.
Georgia,	8 to 12 do	June 1.
Alabama,	8 to 15 do	June 1 to June 20.
Tennessee,	8 to 12 do	June 10 to June 20.
Kentucky,	12 to 15 do	July 1.
Ohio,	10 to 20 do	July 1 to Aug. 1.
Indiana,	12 to 30 do	June 20 to July 20.
Illinois,	12 to 25 do	June 1 to July 25.
Michigan,	15 to 25 do	July 10 to July 30.
Iowa,	19 to 30 do	July 10 to July 25.
Wisconsin,	15 to 25 do	July 15 to July 30.
Texas,	20 to 30 do	May 15 to June 15.
Oregon,	20 to 25 do	Aug. 1 to Sept. 1.

Many of our readers live "from hand to mouth," and few take the pains to collect, compare, and preserve the current statistics of the day—those that have an important bearing upon the vital interests of society. Hence we shall find that few persons can recollect the famine or short years, or the surplus years. To refresh the memories of our readers, we will recur to the leading features of the past few years, as to the grain crops.

The spring of 1846 was remarkable for wheat and all cereals. The supply for 1846-'47 was extraordinary, and enabled us to export largely to Great Britain. Many cargoes were sent to relieve the suffering Irish.

In 1848 and 1849 the foreign export of breadstuffs declined, and in the latter year our agricultural interests were neglected; thousands rushed to California, forgetting that our wheat and corn, our iron and coal, were and still are of more value to us than the gold crop. Hence the product of cereals was barely sufficient for our own uses: and the year 1850 revealed the fact that the production of wheat had actually fallen off, as compared with 1847.

The winter wheat of 1854 was nearly half destroyed by the weevil in Ohio, Pennsylvania, Illinois, Indiana, and northwest Virginia, both before and after being harvested. The drought injured the late crops, and thus caused a heavy demand upon wheat *as food*. The aggregate product was within nine millions of bushels.

The year 1855 has exhibited remarkable weather—no previous season has been more propitious—and we think we have a grand result of *one hundred and seventy-five millions* of bushels for consumption, export, and for seed.

V. In a small number of States the product and consumption of wheat are nearly equal; but with the majority there is a large surplus; These latter we enumerate in the annexed summary, with a resulting excess of ninety-five millions of bushels, namely :

States and Territories where there is surplus produced beyond the consumption required for each :

	Quantity produced. Bushels.	Consumed. Bushels.	Excess. Bushels.
New York,	14,500,000	12,200,000	2,300,000
New Jersey,	2,500,000	1,800,000	700,000
Pennsylvania,	18,000,000	9,000,000	9,000,000
Delaware and Maryland,	6,500,000	2,500,000	4,000,000
Virginia,	15,000,000	4,500,000	10,500,000
N. Carolina, S. Carolina and Georgia,	11,000,000	7,700,900	3,300,000
Texas and Arkansas,	2,000,000	1,300,000	700,000
Tennessee,	8,000,000	3,000,000	4,700,000
Kentucky,	5,000,000	3,000,000	2,000,000
Ohio,	20,000,000	9,000,000	11,000,000
Michigan and Wisconsin,	14,000,000	2,800,000	11,200,000
Illinois,	16,000,000	4,000,000	12,000,000
Indiana,	12,000,000	3,800,000	8,200,000
Iowa and Minnesota,	11,000,000	2,000,000	9,000,000
Missouri,	7,000,000	2,500,000	4,500,000
Kansas, New Mexico and Utah,	3,000,000	700,000	2,300,000
California and Oregon,	3,000,000	1,800,000	1,200,000
		Total,	96,600,000
Deduct :			
Deficiency in ten States,		12,450,000	
For seed and stock,		20,000,000	
			32,450,000
Surplus for export, bushels			64,150,000

VI. We must not lose sight, however, of the fact that the harvest in Europe is very flattering. In Austria the harvesting of the grain crops commenced about the middle of July, and, with the exception of a few localities, the yield will be abundant.

Up to the last two weeks no signs of the potato disease have appeared in any of the German States.

The Prussian government has recently made inquiries in relation to the crops in all the districts of the provinces; the result promises an abundant yield of wheat, while rye will scarcely be an average yield.

In Egypt the fields promise a highly abundant crop, and the only fear latterly expressed was an overflow of the Nile and the damage of their harvests.

We defer until another day any calculations as to the demand abroad for American bread-stuffs, and as to the home value of flour for some months to come. The European demand will be in some measure contingent upon the duration of the war.

We see nothing now to dampen the hopes of the product of this year in the United States, and we have abundant grounds for congratulation, north, east, south and west.

ANIMAL REFUSE AS MANURE.

Blood is a powerful fertilizer, both from the amount of nitrogen and phosphate of soda which it contains. The dry matter of lean flesh and of blood are nearly similar in composition, as will be exhibited in the following table by Dr. Playfair:—

	Dry ox-blood.	Dry ox-flesh.
Carbon,	54.35	54.12
Hydrogen,	7.50	7.89
Nitrogen,	15.76	15.67
Oxygen,	22.39	22.32
	100.00	100.00

The per-centage of ash in dry flesh is 4.23, and in dry blood 4.43; the ashes of ox-blood, according to Ederlin, contains the following ingredients:—

Phosphate of soda,	16.77
Chloride of sodium (common salt),	59.34
Chloride potassium,	6.12
Sulphate of soda,	3.85
Phosphate of lime and magnesia,	4.19
Oxide and phosphate of iron,	8.28
Gypsum and loss,	1.45

From the quantity of ammonia which is liberated during the decomposition of blood, it should not be applied to the land as it comes from the shambles. The best way to preserve the whole fertilizing ingredients is to mix it with soil, clay, peat, and similar matters. By Professor Way's investigation, relative to the absorbing power of soils, we know that, theoretically, this is the safest way to obtain all the fertilizing substances present; and practically, such conclusions have been repeatedly corroborated. The only drawback is, that, as the blood contains from 72 to 89 per cent. of water, the removal of larger quantities from the shambles to a distance of several miles may appear more expensive than would in many instances be remunerative. The profitableness of such undertakings must, of course, depend very much upon circumstances; but in general, if the blood is got within four or five miles, at a trifling cost, it may be used in compost-heaps with as great profit as any other kind of refuse matter. Applied to cruciferous plants, almost no other description of composts will yield such fine crops. I have also often used a compound manure of this nature for fruit trees and gooseberry bushes, and have found it unequalled by any other substance.

Professor Johnston tells us that in Northamptonshire, composts are made by mixing about fifty

gallons of blood with eight bushels of peat-ashes and charcoal powder. The mixture is then allowed to stand for a year or two, and when applied to light soils, greatly improves the crops. If properly managed, there is no need of so much time being lost; but our remarks on the preparation of such composts will be made after noticing the other refuse matters of the shambles. A portable manure made from blood is used in France and some parts of England. The blood is evaporated to dryness, and then mixed with some pulverulent substance and sown with a drill. In this dry condition it was sold in Paris at 8s. per cwt. In London samples containing 22 per cent. of water have been valued £8 or £9 a ton.

(2.) *Flesh and other refuse matters of slaughter-houses* are fertilizers of the first order. The ingredients present in the offal of the shambles cannot be completely represented by the analyses of flesh, but the nitrogenous compounds will be nearly similar. According to Dr. Playfair, we have seen that ox-flesh contains 15.67 per cent. of nitrogen; and Liebig has shown that flesh contains a much larger quantity of potash than blood and consequently it deserves especial attention as a manure. Turnbull & Co.'s prepared ground-flesh manure, in a gritty state, usually contained, according to Dr. Anderson:—

Water,	12 17
Organic matter,	78.44
Phosphates,	3.82
Alkaline salts,	3.64
Sand,	1.93
	100.00

Ammonia, 11.20

From this analysis it is evident that refuse fleshy matters are of great value as fertilizers.

In 1852, turnips were raised under my charge with Turnbull & Co.'s flesh manure; and, in contrast to such as were grown with Peruvian guano, they were certainly in no respect inferior though produced at a fully less cost. The great matter in the preparation of fleshy tissues for use in the field as manure is to putrify them with substances capable of absorbing the large amount of ammonia given off. If the prepared compost is to be sown with the drill, it is necessary to use only such matters as will readily become pulverulent. In other cases, any sort of earthly matters, clay, or road-scraperings, will be suitable for securing economical decomposition. In speaking of flesh manures, I may notice the offal of the Edinburg slaughter-houses. According to the annual returns up to 1st August 1853, it appears that, during the year ending at the date, there were slaughtered of—

Cattle,	20,321
Swine,	2,970
Calves,	5,763
Sheep,	97,280

In all, 126,334

animals, from which, in the form of manure, the following sums were realized:—

To manure sold, 1338 tons, 16 cwt.,	
3qrs., at 4s. 8d.,	£312 7 4
"Liquid manure for nine months,	7 10 0
"Blood 401 puncheons of 150 gallons each at about 1 1-7d. per gallon,	287 2 0
	£606 19 4

By the number of animals slaughtered during the year, the above sum yields only about one penny and two-thirtieths per head, a sum which, even considering the large number of sheep included, is very small indeed. To such manures the attention of the farmer cannot be too frequently directed; and though it is his interest to buy as cheap as possible, still it is often bad policy to allow valuable fertilizers, like the refuse matters of slaughter-houses, to slip out of his hand for the sake of a few pence on the ton. It is quite evident that the 1338 tons of solid manure, disposed of at the Edinburg slaughter-houses last year, might have been used on the farm with nearly an equal quantity of earth, peat, or similar matters; and if the mixture had been saturated with blood and liquid manure, it would have been of as great value as the solid offal used alone. Much loss is suffered by the farmer decomposing slaughter-house manure by itself, or even in conjunction with farm-yard dung, as it is only when in contact with absorbent substances such as soil that its volatised ingredients can be secured for use in the field.

(3.) *Fishery refuse*.—In some sea-coast districts, the refuse of fishing stations is of considerable value as manure. Sometimes when shoals of sprats are caught, large quantities are applied to the land. By bad management they are occasionally spread on the surface of fields, and not immediately plowed in—a system, in warm weather, as injurious to the health of the neighborhood as it is wasteful on the part of the farmer. If immediately plowed in, scattering the fish over the surface may do very well, but in ordinary circumstances it is much safer to use them in compost-heaps. The following is the average of two analyses of sprats by Professor Way:—

Water,	64.125
Oil,	19.050
Dry nitrogenous matter,	16.825
	100.000

The dry nitrogenous matter contains, on an average 11.53 per cent. of nitrogen. The mean of two analyses gave 42 parts of phosphoric acid and 19.56 of potash in the 100 parts of ash. A very instructive fact has been mentioned by Mr. Way, namely, that the proportion of nitrogen in fish is nearly the same as in wheat, each having about 2 per cent. He observes: "We know that wheat contains everything that is necessary to support life and increase the animal frame; in other words, is identical, or nearly identical in composition with the body which it nourishes. Sprats, then, may be taken as the type of the animal, wheat as that of the vegetable life: and there can be no doubt of their mutual convertibility when placed in the proper circumstances. At Queensferry, sprats have been sold for manure at from 3s. to 6s. a cart-load.

But however valuable they are as a manure, it is questionable whether sprats ought to be caught merely to serve this purpose, as the ultimate effect must be prejudicial to the fisheries. Herring gut, and the offal of cod, ling, and saith fish are used as manure in many districts in Scotland. On the south side of the Moray Firth, the fish-curers get about 2s. a barrel, or 12s. a cart-load for the refuse. At Wick the price is 1s., and at Hemsdale from 3d. to 6d. a barrel. In other instances, the proprietor of the estate on which the fishing station is situated claims the refuse without price. The way to

prepare such fish-refuse in the field, is to form a layer of earth, peat, or other bibulous matter, 6 or 8 inches thick, as a beginning to a compost-heap. Over this should then be spread a layer of the refuse about 2 inches thick, and above it another coating of earthy or peaty matter from 4 to 6 inches in thickness, then over the mass a suitable quantity of fish-brine or dissolved salt should be poured. Another layer of fish, earth and brine follows in regular alternation till the heap is of sufficient height. After being allowed to putrify for a month or six weeks, more or less according to the nature of the weather, the compound should be turned, and in a week or two applied to the land. Of course, while salt is necessary to prevent the fish-refuse from being entirely consumed by maggots, care must also be taken not to use more than is necessary to serve this purpose. It has been said that sometimes heaps of fishery-refuse have literally run away through the millions of maggots that have been bred in them. In numerous instances, however, by an over-abundant use of brine, cereals have refused to grow the first application. When properly prepared, fish-composts are pre-eminently adapted for promoting the growth of cereals. Mr. Methven, the fish-curer in Leith, mentions a case which came under his notice in the year 1820, at one of the northern fishery stations. A poor piece of land, which never produced oats more than from 18 to 20 inches in height, was dressed with some sort of compost containing a considerable proportion of putrid fish: matter the following year the crop was uniformly from 4 to 4½ feet in height, and the yield was highly remunerative. Composts prepared in the way already mentioned, and used in conjunction with farm-yard dung, are all well adapted for the production of turnips or other green crops on ordinary soils, but applied alone the action is too evanescent to serve a whole rotation.—From the fact that guano is only the digested dried remains of fish, we may at once see the propriety of carefully saving every description of fishery refuse for use on our fields.

PERFORMANCE OF THE STEAM PLOUGH IN ENGLAND.

As we were coming away from the trial field, impressed with the sentiment that "the steam cultivators were a failure," and soaked with rain, old Aquarius having turned on his taps, as if to give old Walter Scott the lie for saying the "sun shines bright on Carlisle wall," the stewards, Mr. Amos, and some few other lucky individuals, received intelligence that another steam plow had started in a field half a mile off. Making the best of our way to the light land trial field, there sure enough, stood a portable engine in one corner, with ropes and pulleys, and a plowing machine all in action. The engine was that belonging to Mr. Lee, of Wisall, and the plow and tackles are the invention of Messrs. Fisker, of Stamfordsham, manufactured by Roger, of Stockton-on-Tees. It has been tried at Perthshire, last winter, being actuated by a water-wheel: this being the first day of its trial with steam power. The whole apparatus is novel, and we may say, uncommonly promising. Instead of a heavy wire rope to drag the plow frame by main force, a light endless hemp rope, only three-eighths of an inch thick, communicates power to the plow carriage, which we may call locomotive, as it propels itself in the following manner:—a grooved

wheel set in motion by proper spur wheels from the rigger actuated by the hemp rope, winds, as it were, along a strong wire rope laid upon the ground; and the frame being thus carried slowly forward, drags plows or other implements after it. The hemp cord does not touch the ground, but is held up at every 40 yards distance by a "horse," or small friction pulley frame, about $3\frac{1}{2}$ feet high. This cord travels at the rate of 20 miles per hour; but the speed being reduced by the wheel work upon the plow carriage, the latter travels only 2 miles per hour. When two plows are in work at once having the draught of four horses, the strain upon the rapidly running cord will thus be less than half a horse's draught. We were informed by the exhibitor that a 4-horse engine is sufficiently powerful to work two plows, and that with 4 cwt. of coal it will plow 4 acres in a day, the expense for labor being only that of two men and a boy.—If this be strictly the fact, we have a complete invention able to plow light land at a cost of say 3s. per acre. That it is not far from the truth we are sure, for we ourselves saw one plow drawn at the rate of at least two miles per hour when the engine had only 7 lbs. or 8 lbs. pressure upon the square inch, and this was an engine of 6-horse power at 40 lbs. pressure. To be sure, the land had been previously plowed, pulverized, subjected to the trial of all sorts of drills, and been afterwards well trampled by hundreds of people, and consolidated with rain, so that the possible quantity and quality of the work could not well be ascertained. The ploughing we saw was respectably though roughly done, but there was one point really performed—the furrows were well turned. If a steam cultivator can invert the soil thoroughly and cheaply we may put up with a little imperfection in the straightness of cutting and evenness of laying.—The method of anchoring the pulleys, and the arrangement of the pulleys and ropes, is very ingenious; and can hardly be explained with brevity. The anchorage consists of a plate or plow, a few feet in length, and 8 inches only in depth; this can be easily drawn forward in the ground without the trouble of digging holes, taking up, setting down again, &c., and yet it presents a sufficient resistance sideways to the pull of the ropes. A wheel, pinion and crank, on each anchor is used to draw it by means of a rope towards a fixed post, when it is required to be shifted. The arrangement of the ropes about the anchored pulleys is like that of the chains in a travelling crane, the anchorage being shifted forwards at intervals without altering the length of the rope. The plows are not rigidly attached to the travelling frame, but are hung by short iron beams, which form levers, having a slight degree of play up and down. There are four plows—two before and two behind the carriage pointing opposite ways, a neat lever movement lifting two out of work and dropping the other pair of plows in; so that the machine can plow both ways without having to turn round at the land's end.—*London Ag Gazette.*

To CLEAN PAINT.—Smear a piece of flannel with common whiting, mixed to the consistency of common paste, in warm weather. Rub the surface to be cleaned quite briskly, and wash off with pure cold water. Grease spots will in this way be almost instantly removed, as well as other filth, and the paint will retain its brilliancy and beauty unimpaired.

ORNAMENTAL PLANTING.

The term Ornamental Planting, will be employed as a generic distinction, comprehending the forming of avenues, drives or walks, combining the ornamental of natural and external scenery.

Our observations will have reference to grounds around the dwelling-house of the proprietor of an extensive estate. As a rule, the site of the mansion should be the centre from which all ornamentation should radiate, having reference to the front of the house.—The nature of the ground may not always admit of this, but it should be kept in view as far as practicable. No trees should shade the house, and none should stand nearer the front of the mansion than one hundred yards, always excepting fine grown trees of great beauty and above medium size. These are generally regarded as relics of the past, and always possess more or less interest even to a stranger. A free circulation of air, with the admission of a full breadth of light, is always desirable. The ground around, and especially in front of the house, may be laid out either as a smooth lawn with walks, or as a flower garden. Those who have seen the garden in front of the Tuilleries, and the garden at the Luxembourg in Paris, can judge of the fine effect which is produced from the combining of shrubs and flowers with well arranged walks. Several seats in Scotland have also this design of a flower garden in front and partially around the house. In forming such, however, considerable judgment and taste are required, especially in avoiding geometric forms, and the mad attempt to convert shrubs by clipping and training to resemble animate objects.—Uniformity and variety should rule the minutest parts, as well as the whole combined. Harmony of parts, with beauties single and combined, should be, therefore, the object kept in view in forming flower gardens.

In all operations connected with ornamentation, plans should first be made, and these subjected to a severe scrutiny upon the ground. This is more especially necessary, where disturbing the surface is proposed. If the intention is to open up to view a distant object of beauty, or by planting, to conceal an object which is offensive, the plan should always undergo the ordeal of careful examination, and without this, nothing should be attempted.—Where trees are to be introduced either for effect, or to exclude the sight of any object, poles of certain heights, corresponding in part to the supposed height of the trees, should be placed, so as to judge of the probable effect. On the other hand, in cutting down trees to

exhibit some object which has hitherto been concealed, the removing of the trees should proceed with extreme caution. If these important rules were kept always in view, the purpose intended would be of much easier and of more certain attainment, and failures would very rarely follow such alterations.

Water is always an important element in rural scenery, and where its presence can be taken advantage of, it seldom fails in improving the natural characteristic beauties of the locality. But there is no more frequent or greater mistake made than in the forming of ponds and artificial lakes, where the supply of water, such as a running stream, does not admit of the whole being kept in a state of purity. Stagnant waters are offensive to the sense of smell, and injurious to the health of animal life, and health is or ought to be, more important than ornamentation. But even in the absence of the sanitary view of the question, the introducing of water where nature forbids it, has hitherto been the most common mistake in ancient and modern ornamentation. When water is present or can be produced, it should be so arranged as to appear to occupy a hollow. Studying nature in this, as in every other detail, will produce harmony. Violence to nature can only provoke aversion in the minds of those of cultivated tastes. Where water with sufficient fall exists for forming a *jet d'eau*, such can be placed with advantage on the lawn fronting the house, and this falling into a pond surrounded with flowering shrubs has a fine effect. Where water is introduced to the house, a *jet d'eau* can generally be obtained, at least when the supply is abundant. We will however take occasion in a future article, to allude more particularly to the introduction of the *jet d'eau* into ornamental grounds.

The planting of trees on the banks of a pond, lake, canal, or river, should be so arranged as to give the appearance of a greater breadth and extent of water than what exists; and the trees should be so selected as to harmonize in part with the locality. Various willows and plane trees can be so arranged as to add to and heighten the effect by their coloring and the variety of their forms. It is only in certain situations that water-falls can be formed; where these exist naturally, their effect can often be considerably heightened by planting. The nature of the soil and the amount of shading requisite, must determine in part the character of the trees. Those having pendulous branches generally harmonize well with and heighten the effect of water descending from a height. The mountain ash,

the birch, the hazle, most of the pines, with the beech, the oak and the lime tree, where the soil admits of their growth, are well adapted for the top of the fall; the willows, the birch, and the hazle for the bottom. If the study is to allow the fall to be seen from a distance, trees must be introduced very sparingly, particularly below. The attempts to create or heighten the effect of water-falls by any other means than planting are almost invariably failures, calculated only to excite the risibility of those who are familiar with nature. Where a view of the sea, a lake or a river, however distant can be obtained, such should always be taken advantage of; no object in nature is more sublime than the ocean. Those who in their youth have been accustomed to the sight of large bodies of water, feel an inexpressible pleasure in looking upon them.

Avenues are often so formed as to make a long circuit before reaching the house. This practice is becoming somewhat obsolete. The road should be, as far as possible, neither a straight line, nor a circuitous one. In every case it should be subservient to the nature of the ground, and should so approach the house as not to expose the offices and out buildings. Where water exists, advantage should be taken to bring it partially into view, by running the line of road so as to present a glimpse at more than one point. If a large lake exists, this can be easily obtained. If a river passes through the grounds, this can also be easily accomplished, by forming the road for a part of the way along its banks; when the banks are shaded with trees, this is productive of a fine effect. Keeping the avenue as near a level with the public road and the situation of the house as is convenient is always deserving of study; not but that a little variation in the level is very desirable, but utility should never be sacrificed to effect. There is a general desire to have in the avenue many of the characteristics of antiquity, and with this view, avenues are frequently formed by cutting a way through plantations which have already attained a considerable growth. In this manner, some of the finest approaches have been formed. Such avenues should be made to wind in a gradual curve, care being taken to spare the finest specimens of trees not directly in the proposed line. The avenue should rather be narrow than wide. Passing underneath large trees has a fine effect. The edge of the avenue should be the natural turf. No attempt should be made to introduce evergreens or shrubs. The shading of the trees invariably spoils the free growth of such, and their stunted appearance mars the general effect.

Where avenues are planted, evergreens of various orders and shrubs can be introduced into the foreground with excellent effect, the nature of the ground regulating, in part, the character of both tree and shrubs. In forming avenues, combining shade with magnificence of form, the rows of trees on each side may be all of one species; or two or more species may alternate with one another. The former, from exhibiting more of majestic uniformity, has advantages, especially where the trees attain full size; while the latter, from combining, in part, uniformity with variety, secures diversified beauty in form, magnitude and coloring. The oak, the Spanish chestnut, the lime-tree, the horse chestnut, the beech, the plane-tree, native and American, the accacia, the English and wych elm, with several of the pines, &c., are all suitable. Of these, the oak, the lime, Spanish chestnut, and the beech, form the most beautiful avenues, especially if they are of sufficient width to correspond in part with the height of the trees. For effect, the width of the avenue should exceed the height of the trees. Where shrubs are to be introduced into the foreground, this width should be still further increased. Of all plants introduced into such avenues, none exceed in beauty and effect the rhododendrons and azaleas; but they require a soft moist soil, approaching somewhat to peat. Next to these, but of higher growth, are the holly, laurel, and laurustinas. Next, for the effect, especially in summer, are the thorn and briar. Near the house, the cedar, the oak, the Spanish chestnut, and the lime tree, should be introduced, if the soil is deep, fresh and somewhat rich; if gravelly, the beech; and, if rocky, the sycamore, the birch, and the ash.

Where the vista is intended for a drive or walk, and shade is required, the Spanish chestnut, the sycamore, and lime tree are very suitable. In forming such roads, variety of trees should be introduced. This variety imparts additional charms to the drive or walk. Drives through plantations should be without any attempts to introduce other than the trees which go to form the whole. Where the whin and broom will take, these may be introduced sparingly. Both are objects of great beauty when in flower.

The avenues, alleys and vistas diverging from the house should point to objects of beauty beyond their termination, and where these stop short for producing the full effect, planting in stripes should be extended in the direction. Single or scattered trees will frequently produce the desired effect. Design should be

always apparent, but should be so subdued as not to obtrude upon the attention of the observer.

Where the nature of the soil and situation do not admit of the introduction of the oak, chestnut, &c., the beech, the Scotch pine, the larch, the mountain-ash, and birch may take their place. To produce a healthy growth, freeing the ground of water, and in the first stages of growth, keep them free from weeds, and protecting them from injury from game, will generally prove sufficient. Where economizing expense is less an object than to form a beautiful place, besides the above precautions, rich earth, or even manure, may be employed to place at the roots of the young trees. Some trees, such as the chestnut, in a deep calcareous soil. Several other trees also thrive where lime is in abundance,—the lime tree, all the poplars, the beech, &c.

Different avenues, clumps, and more minute parts, should be formed of different species, and some of the rarer or more beautiful trees placed in the foreground. Among the dwarf trees, for effect, none exceed the alburnum. This should always be introduced into the skirts of clumps or masses. Where trees of considerable magnitude stand unconnected, no other trees of medium height should be introduced close to them. Nothing can be finer in effect than to see full grown trees standing alone, dotting a green sward, which undulates with the nature of the ground. In forming such parks, trees of different forms of growth as to magnitude, form of head, branches, whether upright or drooping, and shade of color, should be introduced. If water is present, the weeping willow produces a pleasing contrast to the oak, sycamore, &c. The thorn, from its fragrance when in blossom, and also from its peculiarity of growing, should be always present. Where the land is intended to be cultivated, few trees should be introduced, and, when introduced, should be in clumps rather than as standing apart. Where a road, public or private, passes through the grounds, a single or double row of trees planted on each side of it generally produces a fine effect, particularly when the road passes at or near to a right angle. The trees by partly concealing what is passing, heighten the interest. Where the view of a line of railway can be obtained, concealment is now not generally desirable. The rapidity with which the trains move does not admit of the eye being satiated before they are lost in sight. Some proprietors have, however, rather hostile feelings towards the innovations caused by the line of railway, and to such, these are objects of annoyance. The

banks can be planted, or trees can be otherwise introduced to partially or wholly exclude the sight of the passing trains. This prejudice, however, is rapidly giving way, and the economic advantages resulting from the contiguity of such a means of transit will dissipate the remnant feeling.—*North British Agriculturist*.

A NEW SHADE TREE.

A celebrated writer has lately issued a work to show who was, or who was not, the writer of the world-famed "*Letters of Junius*;" I wish some one equally anxious to display the acuteness of their logical powers would undertake to show us whether the ancient Job was, or was not, a gardener or arboriculturist. In the absence of all positive proof to the contrary, I venture to offer a presumptive one that he was not. He never could have sustained his patience under the numerous tempting circumstances which crowd on the gardener. Or, had he the heart of an arboriculturist, he could not have stood unmoved when told "that his Elms were smitten with grubs and borers; his Lindens bore wreaths and festoons of insects, and were rotten at the ground; his Ailantus had become the pests of his country; and his Maples the food of drop-worms and aphides." Job could not have been a gardener, and it is well he was not, or he would have lost his character and the world its model; and we have gained him as a precedent in the inquiry, "how to stop this plague;" for trees are essential to our existence. If one kind *wont* do, we must find a substitute.

I am going to propose that we introduce a *new shade tree!* Start not, good reader, the "vast and lofty" Himalayas have not been ransacked to present you with another "curious and rare" specimen of abstract beauty; nor has China or Japan been made to lay before you another object of a nine days wonder. Our subject has got no claims of kindred with either the "Tree of Heaven," or the "Deodar," but is one "to the manor born," in which you all, either by birth or adoption, claim an inheritance. But its country must not depreciate its value. *It is American!* It is *Liquidamber styraciflua*, LIN., better known as the Sweet Gum. But the Sweet Gum I allude to is not the "Sweet Gum" as we find it in densely crowded woods, with its stem as slender and as straight as a stud-sail boom; nor the "Sweet Gum" as we frequently see it in damp, half swampy places, with shoots as weak and delicate as a card-basket osier; but the Sweet Gum sometimes seen growing by itself, unsurrounded by other

rtrees, and with its roots free to extend themselves unchecked in a cool, deep, and rich loam. In such situations it has not, perhaps the rural grandeur of the Oak, or the graceful elegance of a Weeping Willow—not, probably, the stiff, majestic foliage of the Magnolias, or the lightness and ease of the "gentle" Birch; but yet a claim to picturesque and simple beauty which no other can eclipse, besides combining many other traits of interest separate in other trees. It is a very rapid grower, will attain a height of eighty feet, and a circumference of seven, under favorable circumstances, and has a widely spreading, roundish, conical head. The branches have a rigid, though much divaricating mode of growth, and are covered with that corky barked appearance so much sought after and admired in some varieties of Elms, Maples and Nettle trees. The leaves and fruit resemble the Buttonwood in all except size and hue, and there is, indeed, a sort of distant relationship between the two families. The leaves are not one-third the size of the Button-wood, deeply lobed—star-like, and produced in abundance. The upper surface shines as if varnished; and as the foliage moves with the slightest summer breeze, gives the tree a playful and pleasing character in its frequent successions of light and shade. This pleasing character of the foliage is heightened at the approach of fall by its brilliant colors. It has no compeer in this character. The leaves change to every describable shade of orange, yellow and red.

But beautiful as the tree really is, I would not recommend it as a shade tree solely on that account. It abounds with a resinous principle apparently obnoxious to insects. Extended observation has led me to believe that not a species attacks it. This property alone is worth a "plum" to the planter.

Having stated its merits as a faithful historian, I must narrate its short-comings. I do not believe it is adapted to a great diversity of soil, or to a high northern latitude. In poor, dry soils, it is of slow growth and short duration; and it may not probably do well in the dry and confined air of a densely built city; but what does *well* in such extremes?

It is easily propagated. Seed should be sown as soon as ripe, or early in the spring, in a loose, loamy soil, somewhat shaded. Plants will appear in a few weeks in the spring, and grow over a foot the first season. The seed vessels do not ripen till late in the fall, but should be gathered before the first severe frost, which is apt to split open the capsules and suffer the seed to escape.

It is singular that so handsome and useful

a tree should be so long neglected; and the only explanation probably is, that it did not come to us with a recommendation from some one of "the ends of the earth."—*Thomas Meehan, in Horticulturist.*

USE OF LIME.

We have found on inquiring of farmers, both in this country and in England, a great diversity of opinion as to the action of lime upon the soil. While in England in 1851, we were presented at a lecture before the Royal Agricultural Society, on the uses of lime, by Prof. Way, and gave the substance of the lecture, with the remarks of several practical farmers, who were present, on the subject in a letter published in our Journal. It was also mentioned, that Prof. Way was making investigations, which would, in due time, be given to the public. By the annexed notice, from the *Mark-Lane Express* of the 24th of June it will be seen that Prof. Way has given the subject a most careful and thorough examination. As soon as the details alluded to in the close of the article shall be received, we shall publish them—believing that they will be found of the greatest importance to the agricultural interest.

"ACTION OF LIME. At a Weekly Council of the Royal Agricultural Society, Professor Way delivered before the members a lecture on the results of nine months' investigation into the condition under which lime affects the absorbent powers of soils in reference to ammonia. These rules were numerically represented in a small table, containing only four vertical columns, intersected by as many horizontal spaces; but would prove, as Professor Way remarked, of a permanent value, worth all the time and labor bestowed upon their production, if they should be found to lead to the establishment of any new principle in agriculture. His lecture was chiefly occupied in the discussion of these results and of the clue they might possibly give to explanations of the mode in which lime acted upon soils as a manure. The two principal facts ascertained by those experiments appeared to be the following: 1. That all clay soils, more or less, even beyond the depth of twenty feet, are found to possess a certain quantity of ammonia, derived, as Professor Way supposes, from the fishy and vegetable matter of beds of lakes or rivers, no bed of clay whatever, he thought, being entirely free from ammonia. 2. That the addition of lime to a soil set free one-half the ammonia it contained; thus acting,

in the first instance, as a "stimulant" to vegetation, but as an exhauster of the stock of ammonia already in the soil or to be slowly derived from the atmosphere, if applied in large quantities. The principal recommendations were: 1. That liming should take place periodically at short intervals, not more than 8 to 10 bushels per acre being used every year, or every two years: lime would, under such circumstances, he thought, be found to be one of the most useful adjuncts of the farm. 2. That lime when slacked and mixed with water, forming what was known as "milk lime" should be added to tank-water, and distributed by means of piping as in the case of Mr. Mechi's operations at Tiptree or Mr. Kennedy's at Myre Mill. Professor Way, in the course of his lecture, entered into the chemical machinery of the double silicates in the soil, by which the action of lime was regulated; and with the experiments he had instituted for showing, in strong comparative contrasts, the results he had obtained. He also pointed out the great importance of giving to land, by means of suitable cultivation, that condition under which it would best act as an absorbent of ammonia from the atmosphere. He has drawn up a complete statement of these details, which will be submitted in due course to the members."

PEA WEEVILS.—Few persons, (says Dr. Harris,) while indulging in early green peas, are aware how many of these insects they swallow. When the pods are examined, small discolored spots may be seen with them, each corresponding with a similar spot on the opposite pea. On this spot a minute whitish grub, without feet, will be found therein; it is the weevil in its larva form; it lives upon the marrow of the pea, and arrives at its full size by the time the pea is dry. This larva then bores a round hole, from the hollow in the centre of the pea, quite to the hull, but leaves the germ of the future sprout untouched. This insect is limited to a certain period for disposing its eggs. Late sown peas escape its attacks. Those sown after the 10th of June are generally safe.

When the peas are green, the Baltimore Oriole splits open the green pods, for the sake of the grubs contained in the peas, thereby greatly contributing to prevent the increase of these noxious insects. The instinct that enables this beautiful bird to detect the lurking grub, concealed as it is within the pod and hull of the pea, is worthy of admiration.

Harris's Insects, &c.



THE SOUTHERN PLANTER

RICHMOND, NOVEMBER, 1855.

TERMS.

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RIDING AND DRIVING MATCH BY LADIES!

Except the Baby Shows of Mr. P. T. Barnum, which are now imitated by free negroes both in New York and Philadelphia, we know nothing so intensely disgusting, as what are called equestrian exhibitions by the females of the hireling States at their shows and fairs; and we know few, if any thing, better calculated to make us agree with our friend Mr. Fitzhugh in the failure of "free"—he might have said free and easy—"society."

It is one of the greatest triumphs of Christianity that it has raised woman from the position which Heathenism had assigned her, and has transformed her from the slave of man's passions and domestic needs to his companion, his friend, his angel on earth. But this position can only be maintained on the conditions that produced it, of modesty, decorum, reserve, delicacy—not only of feeling but deportment—and an admission to the world by all her acts that she is his dependent help-mate, and not his impudent rival.

When women so far transgress the express commands of the Bible, that holy charter of their privileges, as to *exhibit* themselves in any such

public capacity, as many now assume, at the North, they may as well take leave of all the gentle attributes that attract men to them, and become once more as ferocious as Medusa, as cruel as Medea, as voluptuous as Sappho, as bibulous as Circe, as shameless as Lais. The woman of the Bible once thrown off and there is no stopping this side the nether regions. Wo betide the country whose women rise superior to the teachings of Paul.

If they choose in other lands to exhibit themselves in "lectures," or by beastly baby shows and an exposure of the most sacred mysteries of home to the rude gaze of ribaldry, to bring maternity into contempt, and by a series of such acts to degrade themselves and demoralize their male associates, we do not feel that it is any particular business of ours to castigate their folly and presumption. But when they invade catle shows, compete for premiums with cows and sows, and for "admiration" with bulls and rams, we have a right to protest, in the name of "man and *beast*," against such "entertainment," against the disrepute they reflect from themselves upon a noble festival, and against an abuse which does introduce, and has introduced, the worst form of rowdiness into what should be exclusively an area of quiet and respectable rural competition.

To presume the possibility of such innovations on the manners and morals of Virginia, would be to insult our women, and as absurd as to

"Suppose a painter to a human head
Should join a horse's neck,"

and we do not introduce the following, which we find in the Dispatch, from the New York Tribune, so much to warn us to enlighten us as to what is done in "the grandest product of free institutions," alias the State of New York:

RIDING AND DRIVING MATCH BY LADIES.

The great Agricultural Fair of the State of New York, at Elmira, closed with a grand floral ball on Friday evening, given beneath a mammoth tent, by the citizens, followed on Saturday by highly interesting equestrian performances, in which a number of ladies participated, in the presence of some 5,000 spectators. We give the following particulars from the N. Y. Tribune:

At 10 o'clock, A. M., the ladies who had entered for the prizes, convened at Haight's Hotel, where they formed in line. Fourteen of them were mounted on horses and four others in wagons, each lady being accompanied by one gentleman. The procession proceeded to the Fair ground, escorted by the committee and the gentlemen in waiting. Each lady was attired in a riding habit varying in color from the others and forming altogether, a very pleasing and attractive appearance. Arriving at the grounds they were warmly received by the assembled multitude. On assembling around the judges stand, and after answering to their names, received some instructions from the chairman of the judges, Col. S. G. Hathaway.

The Tribune here gives the names of fourteen la-

dies who were competitors for riding on horseback (one from England,) and eight for driving in open buggy. The account then says:

The ladies on horseback were first sent out in couples, and for more than an hour and a half the skilful and graceful management of the horses was witnessed by the multitude with intense interest and at times their approbation broke forth in enthusiastic applause. During the exercise, Mrs. Stephens while testing her horse at full speed, was precipitated over his head in consequence of the animal coming to a sudden halt. Mrs. S. landed on terra firma without injury, and in a moment after was making good time around the course. Her riding was admired by all. Miss A. M. Alexander, an excellent rider, was also thrown, in consequence of the breaking of the bridle, but was not injured.

An exciting trotting match came off between Mrs. C. M. Stephens and Mrs. M. Conover. The riding of the ladies and the speed of the horses was very nearly equal, and each temporary advantage one drew over the other gained forth the approbation of the audience.

Miss H. T. Chapman was fortunate in the possession of a very spirited and well trained animal, which enabled her to display superior skill in the management, and by many it was thought she had no equal present.

A contest took place between Mrs. Conover, Mrs. O. C. Childs and Miss E. Council. This was a close contest, but Miss Council bore off the palm; and received the approbation of the audience.

Little Miss Eliza Ann Taylor, of Ontario county, a slight-formed child, eight years of age—was the favorite. She sat upon a large iron-grey horse, with perfect ease and elegance, and as firm as though she had been fastened to the saddle. In one instance, where some five or six ladies in the course were striving to take the lead, little Miss Taylor's horse appeared to enter the contest, and as if conscious of his precious burden, steadily increased his speed, with an easy motion, passing one, then another, and another, until, on the third time round, the contest outs were all distanced, and then dashed up in front of the judges' stand amid the spontaneous cheers and applause of all who were witnesses,

In the driving, greater skill and management was shown than in the riding. Miss A. Finch, a little girl 10 years of age, surprised those present by driving a fine pair of prize horses. Mrs. F. S. Norton, of Onondaga county, in riding, could not display her skill to good advantage in consequence of having been provided with an inferior horse. In the driving match she was more fortunate in being provided with a very spirited horse. In driving around the ring, in company with others, the horse broke up, and showed a disposition to dash off, regardless of restraint, when a large number of spectators made a rush to stop him, but were kept back by the owner, and Mrs. Norton appeared to have perfect control. Shortly after the hind axle broke down, but by coolness and good management the horse was promptly stopped. An exciting trotting match came off, in which Miss Demarest and Mrs. Whitney drove, each lady availing herself of every advantage that offered. The first heat the horses continued neck and neck, but on the second and third time around Miss Demarest came in ahead. The driving of Mrs. P. Kinney, Miss Stephens and

Mrs. S. Miller was also excellent, and those ladies also received a portion of the applause.

About 1½ o'clock, Col. Hathaway came forward and complimented the ladies for the highly creditable manner in which they had acquitted themselves, and remarked that the duties of the Judges were delicate, and they would find it very difficult to award the premiums, there being so many who were certainly entitled to the first. He then closed by stating that the Judges would announce the premiums at the Haight House, at 4 o'clock, P. M., at which time there was a large gathering in the halls, and the following premiums were announced:

To the best Rider on Horseback.—1st, Mrs. M. Conover, Onondaga co., \$100; 2d, Mrs. H. T. Chapman, Yates co., \$50; 3d, Mrs. O. C. Childs, Onondaga co., \$25; 4th, Miss E. Council, Onondaga co., \$15; (and made up to 50 by the committee;) 5th, Mrs. J. B. Clark, Chemung co., \$10; 6th, Little Miss Taylor, Ontario co., (discretionary,) \$15.

To the best Driver in open Buggy.—1st, Miss E. Demarest, Chemung co., \$75; 2d, Mrs. F. S. Norton, Onondaga co., \$30; 3d, Mrs. V. Whiting, Pa., \$20; 4th, Miss C. M. Stephens, Cayuga co., \$15; 5th, Miss P. Kinney, Seneca co., \$10.

Discretionary Premiums.—Miss C. Wilcox, Chemung co., \$10; Mrs. J. H. Rodgers, Chemung co., \$10; Miss A. M. Alexander, Wilksbarre, Pa., \$10; Miss S. C. Rodgers, Livingston co., \$10; Miss Franky Weyburn, Ontario co., \$10; Mrs. S. Minier, Chemung co., \$10.

MIXED RYE AND OATS.

It is not too late now for those who have rye and winter oats to make the experiment of sowing them together for food, according to the following which we take from the Rural New Yorker. We think the proportions about right, but the quantity directed to be seeded rather larger than necessary.

Mixed crops are not unfrequently sowed in Europe, especially on the continent; and we have the authority of Von Thaer that they usually produce more thus mixed than either would have produced separately, though with somewhat more strain to the land. The precise mixture here spoken of is not mentioned by him, but there is no more reason why it should not do than any others. Try half an acre of it, and report results:

"I had," "a conversation with a man lately who was an experienced farmer, having farmed both in this State (N. Y.) and Ohio, and his manner of raising horse feed was this: I take about 2½ bushels of oats, and mix with them one bushel of rye, and sow this amount to the acre. The rye will support the oats in case of a heavy growth, and prevent lodging. In this manner I have raised sixty, seventy, and even eighty bushels per acre." The soil must have been very strong to do that, but the mixture is about in the right proportion.

It has been ascertained by experiment, that a cow will drink about eighty-seven pounds of water in twenty-four hours.

For the Southern Planter.

WHAT IS THE PROPER USE OF THE BACK BAND TO THE PLOUGHMAN?

This, it may be expected, will be regarded a very trifling and simple question by most persons: one which the most ignorant ploughman can readily answer. Simple as it may seem, I have often thought that no part of the fixtures appertaining to the plough and its gearing, is less understood. The ready reply of almost every ploughman will be, that by the position of the back-band, he regulates the depth of the furrow, and that therefore that is the appropriate use of the back-band.— This no more proves the true use and intent of the back-band, than if a drunkard should declare the proper use of ardent spirits to be, to make men drunk, because he so uses it, prove such to be its proper use. It is true that the depth of the furrow may be so regulated, but the enquiry is, is it proper and best to do so? It is objected to for the following reasons: It throws a portion of the draught on the horse's back, where there should be none, and by so doing causes the collar and hames to bear on the under part of the neck and unequally against the shoulder. This not only subjects the animal to present discomfort, but greatly increases the liability to galls, both of the back and shoulders. Whenever a portion of the draught is thrown on the horse's back, the trace chains (which should always be straight when the horse is drawing) necessarily make an angle between the swingle tree and hame-hook, the inevitable effect of which is to, more or less, raise the heel of the plough and throw it upon its point; this greatly increases the draught and causes the collar and hames to bear as above intimated. By a plough thus drawn the work is badly executed and the point is soon dubbed off and rendered unfit for work before it is half worn, whereas, made to run level, heel and point both gliding on the bottom of the furrow, the point will wear very nearly equally bottom and top, and keep sharp till worn out. If these things be true, it follows, that to undertake to regulate the depth of the furrow by the back-band is a diversion from its proper use. What, then, is its use? I answer, merely to suspend the traces and keep them from falling under the horse's feet when turning, or at rest; just the opposite of the use of the belly-baud to the wagon horse, which is to keep the traces from flying over his back. The wagon horse draws by his shoulders and so should the plough horse.

If the above objections to the back-baud as a regulator of the depth of the furrow, be ac-

knowledged as valid, the enquiry comes up, how then shall it be done? An answer to this may be attempted at some future and more convenient time. B.

BUCKWHEAT—ITS HISTORY AND USES.

The buckwheat crop of the United States, compared with most of the other grains, is of very insignificant account; and yet, its cultivation furnishes not only a very palatable, but also a very healthful article of diet. The great objection to its use lies chiefly in the too frequent unskilfulness manifested in its preparation for food. Properly cooked, it affords the best material for pancakes in the whole range of cereals; while, on the other hand, improperly prepared, it lies when eaten almost as heavy in the stomach, and is about as easily digested, as so much lead.

There have been great differences of opinion as to the nutritive qualities of buckwheat; it being supposed by many of little account on the score of economy, and that an individual using it as an article of diet, would require as large an amount of other food, as if the buckwheat cakes had not been placed upon the table. No doubt any person with a good appetite will eat more heartily at a table spread with palatable food, than at one of the opposite character, and on that account may make away with an extra plate of buckwheat cakes; but the analysis of the grain is conclusive evidence that this grain is highly nutritious.— Wheat, which is universally recognized as the most valuable grain raised, and the best adapted, all things considered, as an article of diet, contains, say twelve per cent. of gluten, sixty-eight per cent. of starch, and five per cent. each of sugar and gum in every hundred; while, at the same time, buckwheat contains over ten per cent. of gluten, fifty-two per cent. of starch, and eight per cent. of gum and sugar. This analysis shows buckwheat to compare quite favorable with wheat; and of course with corn, barley, or oats, the results will be still more favorable. In the above analysis of the *grain* of buckwheat, about twenty-seven per cent. of the residuum must be allowed for husk, while in wheat not over one-third of that amount is produced; and hence, in the comparison of flour for the two grains, instead of the grains themselves, that of the former will stand in a still more favorable light.

Buckwheat was brought into Europe from the North of Asia, and was first cultivated in England about the year 1600, and is principally used in that country at the present time

as food for pigs and poultry. It is raised to a limited extent in most of our Northern States, but chiefly in New York and Pennsylvania; the latter State producing in 1850, according to the U. S. Census Report, 2,193,692 bushels and the former 3,183,955 bushels—the two together furnishing five-eighths of the whole amount raised in the country. When it is considered that in the same year there were provided about 600,000,000 bushels of corn, and other grains in proportion, the nine millions of buckwheat dwindles into comparative insignificance.

There are many good reasons for paying more attention to the raising of this grain, among which may be enumerated the following:—It will thrive on poor land, where other crops will fail; it is easily cultivated, can be sown after all other crops (except turnips) are in the ground, and before haying time comes on. June and July are the best months for seeding. The grain finds a quick sale at remunerating prices, and brought readily in this market last season one dollar per bushel. Portions of the grain come successively into blossom, and if the earlier should be blighted the succeeding flowers will still frequently produce a good crop; the straw is nutritious as an article of fodder, and when properly cured, sheep will eat it almost as readily as they will hay; the grain makes excellent feed for poultry, and other domestic animals are also very fond of it. It is stated that horses will fatten on it very rapidly when at rest, but that working or driving very soon reduces their flesh; and it is, therefore, not recommended as food for them. Buckwheat blossoms contain much saccharine matter, and bees extract large quantities of honey from it. The honey, however, is much inferior, both in taste and color, to that obtained from other sources. It is of a dark, smoky appearance, and possesses a strong and rather unpleasant flavor.

The green crop has been much used in some localities for plowing under as a manure, and possesses the advantage of producing a crop on land where clover would fail; and also of being sown and plowed under the same season. But, aside from these considerations, it is not equal to some of the grasses for this purpose. The principal value of buckwheat is for pancakes, of which great use is made throughout the Eastern and Middle States. It is usually packed in small cotton bags, containing from five to twenty-five pounds of flour each; and in this shape finds its way during the season of winter into most families of the above-named States. The manner of prepar-

ing it for food comes more properly under the head of "Domestic Economy;" but it will not be out of place here to say, that with very little pains, any housewife can make light, palatable and nutritious cakes. In the form of batter it is easily made light by the same appliances which render wheat flour fit for baking.

The price of buckwheat flour last year, bore the usual ratio to the price of wheat, and the flour sold in our market at times as high as five cents per pound. At such a figure, with the usual appliances of butter and syrup, of course pancakes could only be indulged in by the mass of men as an occasional luxury; but from present appearances the harvest will be more plentiful, and the price within reach of all who subscribe to the doctrine that warm buckwheat cakes and maple molasses are grateful to the palate, good for the stomach, and worthy to be reckoned among the best dishes of a luxurious table.

The former practice of threshing buckwheat in the open field and upon the bare ground, and then scraping up with it a quantity of *free soil*, is mostly abandoned at the present time. Such a practice is unworthy of a good farmer, and ought to render his grain unsaleable. We have very vivid recollections of a fine field of the grain threshed in this way in our youthful days, and of the gritty flour produced therefrom. Secured in such a way, it will do for poultry, because grit and gravel-stones are a necessary constituent of their food; but the functions of mastication in the human species, are performed in another manner, and without any necessity of the above concomitants.

ARE WE PROGRESSING?

During the months of September and October of this year, nearly all the Agricultural Fairs, both County and State, will be held.—Millions of people will have left their homes, and mingled together at these holiday gatherings. And all, it is to be hoped, will go home wiser, by reason of what they may see and hear.

Mechanics and manufacturers will have done their utmost to bring their various labor-saving machines in the most attractive form before the vast crowds that will examine them. The owners and breeders of fine animals will have them in their best condition for the exhibition, and the luscious products of the garden and orchard will also be among the coveted things to be gazed at.

But after the gay pageant has faded away like the "baseless fabric of a dream"—after

the crowd have dispersed, and nothing is left but the greensward upon which, fairy-like, it was shown, can the farmer who is really desirous for the progressive improvement of his business, of his profession, looking over all that has just been, say that there has been any marked improvement over the exhibition of the previous year? The same animals, a little better prepared, their horns scraped smoother, or their manes and tails combed with a little finer comb, or brushed with a more expensive brush, their progeny a little fatter and

ker,—a few more patches in the bed quilt, or a little more absurdity in the figures of the needle,—a larger pumpkin or a heavier squash—may have been seen, talked over and wondered at. But has anything been done to aid the farmer in making two blades grow where but one grew before, without its costing him double their value? Has anything been done by the farmers to give to their profession the advantages of science? Can their sons or their daughters obtain any where within their reach the means for a more thorough education, so that when they come upon the stage of active life they will have their minds expanded by high culture, and will bring to their business all the lights of modern science? If this has not been done, we have made little or no progress in the direction most important for us to go.

BLOOD STOCK, WHAT IS IT?

Many farmers have most curious notions in regard to the meaning of the phrase "Blood Stock." Many have an idea that it must be imported stock, and held at a high price, because it has been brought across the ocean.

But in England there is a wide distinction between what is called blood stock and the common stock of that country. Certain breeders of stock have been extremely nice in regard to breeding. They have selected from the common herds of cattle the very best they could find, and have kept them apart from the common run of cattle, casting off all the inferior individuals that often show themselves in the best herds.

By pursuing this course for years in succession a *race* is produced superior to the common run of cattle—and at length this race becomes so perfect that you can place much reliance on the progeny. Different courses have been pursued by stock breeders in England—but generally the aim has been to produce large animals, and such as will fatten early, regardless of their merits as milkers.

The short horn Durhams meet the views of

those who pride themselves in the growth of the largest animals, and such as will fatten at three or four years of age. These cattle are said to fatten at less expense also than the promiscuous herds of our country—but as reliable milkers the full blood Durhams have failed to give satisfaction to purchasers.

But a prejudice exists against what is called "blood stock" that is, imported stock, and the question is often asked, why is not our own native stock as good as any that can be imported? We have cows of no particular breed that will excel the general run of imported cows, and why shall we not rely on them in preference to what is termed "blood stock?"

Now we have no idea that the farmers of Britain are the only people capable of producing "blood stock." They have taken the lead in this business, and to them we look for information in regard to results—but we are not bound, hand and foot, to the opinions of foreign breeders.

Let us examine this subject fairly. Is it best to breed promiscuously and pick out of the mass production the best looking individuals—or is it better to endeavor to rear a *race* from the most noted milkers, and keep that race apart from the mean animals which are often reared as farm stock?

A drover who goes into the interior to buy cows will prefer such as are bred by an old farmer who has long been in the practice of raising his own calves, and breeding from the best of his cows. A farmer who has pursued this course for twenty years or more has now, in fact, "blood stock" of his own production, and can calculate with considerable confidence on the qualities of the calves or young cattle that he has produced.

By pursuing this mode we can rear as good blood stock as any foreigner who ever lived. Time, patience, and strict attention are needed to come to the result which foreign breeders have come to in the improvement of their herds. We can have as good cattle as any that have been produced in England if we will have patience and continue long in the right course.

It often happens that an individual cow, of no particular breed, will yield more milk and butter than the average of blood stock. What of it? Will her progeny do the like? If we cannot rely on her progeny we cannot account her as of any great advantage to the public, though her owner may have made profits out of her.

Drovers go annually into the interior to buy cows to supply a demand of people who live

on the sea board, or near large towns where young cattle cannot be raised without great cost. A shrewd drover picks up thirty or forty of the best cows that he can find in Vermont or in Canada.

Well, he sells to those who cannot afford to rear calves. The purchasers are benefited by this course of trade, but the State is not advancing by this course of traffic. The best lot of cows is transferred from Vermont to Rhode Island—but not the least advance is made in the improvement of stock. Rhode Island still continues to make veal of all the calves, and Vermont continues to rear all, good and bad.

And yet we hear croakers declaiming against blood stock, or select stock, because a bastard individual is sometimes found to prove superior to the average of blood stock or legitimate stock.

Imported stock, and all blood stock should be judged by its real merits. If Americans will pay the same attention to breeding which foreigners have done, they can, without doubt, rear as good animals as any of foreign production. Will they not make the trial?—*Massachusetts Ploughman*.

DAIRY STATISTICS.

How much milk does it take to make one pound of butter?

We have gathered answers to this question, from the correspondence of the London Agricultural Gazette, to the following purport:

In Blarney, Cork, Ireland, it takes "two gallons six and a half pints in summer, and two gallons three and a half pints in winter. Average two gallons five pints of milk, or two and a half pints of cream. This is the well bred Irish cow. Crosses of the Dutch and Durham produce good cows, but the Durham is better adapted to the butcher than to the dairy. The Ayrshire is not only good for the dairy, but has also every tendency to fatten, and is best adapted to light soils. Pure Devons are very pretty stock, and give milk rich in quality but much smaller in quantity than any of the others."

In Dorsetshire, it takes, for the season, "two gallons six and a half pints, or two pints of cream. The average produce of butter from a cow, in the course of a year, is about thirteen dozen (156) pounds. Some dairies have produced nineteen dozen (228) pounds per cow—but this is a rare occurrence."

In Cheshire, "in a general way, we have found, from the large Yorkshire cow, it takes three gallons for a pound of butter; Ayrshire less; and an Alderney still less. A cow gives

much more butter when she has calved three or four months, and the quantity of milk is diminished; also, a great deal will depend on the quality of the food. We churn by steam; and last summer we tried the shortest time we could do it in; it was a hot day, and we accomplished it in five minutes and a half—the engine making 300 revolutions per minute, and the quantity eighty gallons of milk. We have also found that it pays very well in hot weather to put American ice into the milk before churning, to reduce the temperature to get out more butter; the result of the same quantity of milk without ice, fifteen pounds of butter; with ice, twenty pounds."

In Suffolk, it takes "three gallons and three pints. Our cows were feeding in our best piece of pasture, so that I conclude we never make more butter from the same quantity of milk."

In Gloucestershire, it takes "three gallons and six pints, or about a quart of cream. It is certainly not a good time to make an average trial, as the weather has been so very warm during the past week, and the flies have been extremely troublesome to the cattle."

In Guernsey, "I have had that quantity from two gallons, and have been assured that one and a half gallons have sufficed in some cases. I believe about eleven quarts to be a fair average. Our pound is the old Norman, and with the over-weight with each pound prepared for market, I should think it was over eighteen ounces English weight."

"Additional returns, representing the produce of over 1000 cows, show a general average of 124-100 of an ounce of butter from one quart of milk.

How much do these quantities differ from those necessary to the same result in American dairies?

GREEN MANURING.

Vegetable substances, in their green and succulent state, are powerful fertilizers, when thoroughly incorporated with the soil. The most pertinent explanation of this fact is furnished by the consideration that they supply the identical elements that future crops require; in the same manner, that out of the materials of one house, another may be elaborated, and it is true that many of those materials exist in such union and affinity, as renders them especially adapted for the nutrition of the future crop, for it is a recognized truth in physiology, that both animals and plants take up and assimilate from their food a portion of their bulk in the precise form in which it exists in that food.

The practice of growing crops for the special purpose of ploughing in as a manure for succeeding crops, is not justified by this consideration merely. It would seem to be a waste of time and material, to convert the elements of vegetable growth into living forms twice before they are made profitable. Why grow a lupine or clover plant one season, to be buried, in order that from its remains, a cabbage or a turnip may be produced? Why, if you build a house, do you not fetch the materials direct from the quay? These questions would be unanswerable, did plants obtain all their food from the soil. But such is not the case, a great portion of the bulk of green crops is obtained from atmospheric sources; and after a green crop is ploughed in, the soil necessarily contains more of the organic elements essential to vegetable nutrition, than it did before the crop was grown; it is richer, in fact, by the carbon, oxygen, hydrogen, and nitrogen, which the green crop has obtained from sources independent of the soil. In like manner, the crop grown after a green crop has been ploughed in, has the advantage of a ready supply of mineral elements, which have been worked up by the roots of the fertilizing crop from the soil and sub-soil, and which in many instances, owing to their sparing solubility, are with difficulty obtained under ordinary circumstances.—*Progressive Farmer*.

NEWLY INVENTED STEAM PLOUGH BY A BALTIMOREAN.

We have been aware, for some time, that Mr. Hussey, of this city, the inventor of the Reaping and Mowing Machine, was engaged in constructing a Steam Plough, with the design to exhibit it in the French Exhibition in Paris. We learn that he has so far completed his invention as to get up steam on two different occasions, and steam along the streets, several squares in the neighborhood of his manufactory. The stone pavements did not, however, afford a good opportunity to test its ability to plough, but we understand that its manageable qualities were pretty clearly manifested. If we can credit our informant, the machine, by its own power, started from the manufactory, down a narrow passage, through the gateway, and along the streets, turning several corners, and into the yard of another manufactory, on to the scales, where it was weighed; weighing, with water and fuel on board, about six tons. It then backed itself off the scales, and returned to where it started from, steamed through the gateway, up the narrow passage and backed itself at right angles into a shed,

where it would have been difficult to have placed a two-horse wagon by the use of the horse.

The nature of the undertaking and the importance of having his invention in such an improved condition as not to hazard the credit of American Exhibitors in Paris, has subjected Mr. Hussey to unavoidable delays, yet he has not, until very recently, abandoned the prospect of getting his plough into the Exposition before its close; but it seems, the late edict of the Emperor, withdrawing the favor granted to American Exhibitors, of entering their articles at any time, has closed up Mr. Hussey's way in that quarter. This should not be so great a disappointment to him, considering the Maryland Agricultural Society's Annual Show is now so near at hand, where we hope to see him turn as good a furrow as he could turn in France.—*American Farmer*.

PRATT'S PATENT DITCH DIGGER.

A new era has dawned within a few years upon successful and profitable farming, by the introduction of a thorough system of underdraining. Crops are put in many days earlier in spring, drowning out is prevented, severe drought is unfelt, roots penetrate deeply the mellowed and porous soil, cold soils are made warmer, manure is made more accessible, and economy of labor promoted by admitting the easy working of the earth at all times.

But the *labor and cost* of underdraining have deterred many from availing themselves of these advantages. To apply the system thoroughly to an acre of land, by cutting ditches at regular intervals of two and a half rods, requires sixty-four rods of drain. At twenty cents per rod for cutting two and a half feet deep, twelve cents a rod for tile, and five cents and a half more for laying the tile and ploughing in the earth, the cost is twenty-four dollars per acre. This expense will doubtless be lessened in a few years by a reduction in the price of tile in consequence of the larger demand, but still more so, we think, by the use of Pratt's Ditch Digger, invented by R. C. Pratt, and manufactured by Pratt & Brothers, of Canandaigua, N. Y.

This machine is a new invention, and is not perhaps fully perfected in all its parts, yet it has already given experimental promise of great value. In a recent trial on the farm of the late John S. Bates, of Canandaigua, before a committee of the Ontario County Agricultural Society, and several distinguished agricultural gentlemen, among whom were John Johnston and R. J. Swan, of Geneva,

widely known for their success in extensive underdraining, its performance was eminently satisfactory. When we reached the ground, at half past eleven in the morning, a ditch forty-four rods in length had just been commenced, and after suspending operations an hour or two for dinner, we found the depth at half past three to be twenty-one to twenty-three inches, admitting of its easy completion before night. The two horses which drew the machine, worked very moderately; the soil was a hard and stiff brick clay. A portion was stony, and on this part a man was employed with a crow-bar to loosen and throw out the stones as they were successively laid bare.

We have also tried this machine on our own land, where the ground was quite stony, and have found it to succeed well, although the speed of its work was greatly impeded by the stones. In such ground two or three hands are needed to loosen stones, and to throw out those which are loosened by the plough-share.

The principle on which the machine operates is a simple one. A small plough-share runs along the bottom of the ditch and loosens up from one to three inches of the earth; the revolving shovels carry up the loosened earth, until it reaches the top of their revolution, when it falls by its weight on an inclined platform on each side, down which it rolls, and drops on each side of the ditch. Motion is given to the wheel of revolving shovels, simply by its running over the earth, and its motion is precisely similar to that of a carriage wheel over the surface of a road. When the soil is wet and adhesive, a small wheel is placed at the top of the machine which clears the shovels of the earth. It will cut from eight inches to one foot wide, and fully two and a half feet deep, and may be made to cut three feet deep if desired. It is mostly of iron, and is strong, and not liable to become injured by use. The price, we believe, is \$150.

From all the experiments we have witnessed, we have made the following estimate of its power of performing work:—In soil of medium hardness, and which is rarely or entirely free from stone, a good team without undue exertion, driven by one man, will cut from seventy-five to one hundred rods of ditch, two feet and a half deep, in a day. Where the ground is stony, the length will be reduced to fifty or even to thirty rods per day; and a very hard and dry soil will also lessen the speed of its work. In mucky or peaty land, free from large roots, and at a season of the year when dry enough to bear horses, one hundred and

fifty rods a day would be of easy accomplishment. In an actual experiment in such soil the ditch was cut by passing only seven times, after the first furrow was made with the common plough, or about four or five inches at each passage of the machine.

On the whole, we regard Pratt's Ditcher as now made, as standing high in the list of modern agricultural inventions; and at a time when labor is becoming scarce and high priced, likely to prove of immense advantage to improved farming.—*The Country Gentleman.*

FEEDING SHEEP.

It appears from experiments of the Leipsic Society, that sheep cannot be fed to their full extent on hay alone, and that those of a particular breed which, when fed on hay, reach a weight of 90 lbs, acquire an additional 10 lbs., by the use of concentrated food. Further, that hay is not favorable to the production of fat, but that the grains, especially rape and linseed cake, greatly surpass it. Experiments on cows have also shown that 1 lb. of rape-cake given in the food produces an increase of $\frac{3}{4}$ lb. of milk, and that with cows of high milk-producing powers it may produce double that quantity; or, on the average, rape-cake will produce its own weight of milk. The highest effect is produced by 2 lbs daily; but this quantity is too high, if butter is the object, as it acquires a disagreeable flavor; but when the milk is to be sold, this quantity may with safety be employed. In the production of milk, rape-cake cannot be replaced by double its weight of hay; and under favorable circumstances, when conjoined with food poor in nitrogen—such as straw, potatoes, or turnips—it will produce three times the nutritive effect of hay. Rape-cake is equally favorable to the production of flesh, and it appears that 1 lb. daily will increase the live weight of a cow by 15 lbs., and sustain it at the higher point. In one particular experiment the live weight of two cows was increased, in the course of fourteen days, by 62 lbs., and with the consumption in addition to their former food, of 66 lbs., rape-cake. This effect, however, was only produced under favorable circumstances; for when three or four pounds rape-cake *per diem* were used, the animal only reached a weight proportionate to this increase after the lapse of a very considerable time; and it appears that the more nearly the animals approach the fully fed condition, the more slowly do they increase in weight especially under the influence of the same food.

With sheep, one pound rape cake added to the daily food will gradually produce an increase of 20 lbs in their live weight, provided the composition of the total food be properly attended to. This, however, will only do in the early part of the feeding, its effect being somewhat diminished in the latter part of the process. The poorer the other nutritive matters supplied to the animal are in nitrogen, the larger is the quantity of rape-cake which may be advantageously employed. It is not found advantageous to give to each sheep a larger quantity of rape-cake than $\frac{3}{4}$ lb. daily. If the daily food of a sheep of medium weight consist of $\frac{1}{4}$ lbs. turnips, $1\frac{1}{2}$ lbs. hay and a quantity

of rape-cake be supplied in addition, commencing with a small quantity, and gradually increasing it to $\frac{3}{4}$ lb., the weight of the animal will increase in the course of six or eight weeks by about 13 lbs. and with the expenditure in all of from 28 to 30 lbs. of rape-cake. It thus appears that the effect of rape-cake on the sheep, though favorable, is not so striking as on the cow.

These experiments have been followed by an inquiry into the quality of the dung produced. To connect together the whole inquiry, it may be well to mention the principal points established. It appears that when rape-cake is given to sheep, not for the purpose of fattening but in small quantity, and a part of their winter food, not more than 1-6 of the original quantity of nitrogen disappears during the nutritive process and by decomposition and the other 5-6ths remain in the dung. The quality of the cow dung is similarly increased; for, as 1 lb. of rape-cake produces 1 lb. of milk, containing only $\frac{1}{3}$ of the nitrogen of the cake, the other $\frac{2}{3}$ must manifestly appear in the dung. When, however, a rapid increase is taking place in the weight of the animal, a smaller proportion of the nitrogen will pass into the dung, and a larger quantity be retained within the body of the animal. What proportion is thus retained for each 100 lbs. increase in the live weight cannot be accurately deduced from the experiments; at all events, it is clear that Boussingault's estimate of 366 lbs. of nitrogen is high; a result which is also brought out by Mr. Lawes' experiments. It may happen that, when a rapid increase in the weight of the animal occurs, the whole of the nitrogen of the concentrated food may be retained in the animal; and this actually occurred in one of the experiments where in fourteen days 56 lbs. of rape-cake gave an increase of 62 lbs. live weight, and at the same time 38 lb. of milk. In this case the rape-cake employed contained 28 lb. of nitrogen, and nutritive products 2.49; or very nearly as much; but this is so to speak a mere passing phenomenon: for so soon as the live weight corresponding to this mode of feeding is acquired, only that portion of nitrogen necessary for the milk is retained, and the remaining $\frac{2}{3}$ pass into the dung.—*Canadian Agriculture*, rist.

From the Southern Farmer.

TURNIPS.

Preservation through Winter until late Spring.

After the first heavy frost, and before we may expect a hard freeze, have your roots pulled up; and carefully handled so as not to bruise them; cut off the tops to within one inch of the root. If not provided with a root cellar, place them in piles or conical shaped mounds, containing from thirty to fifty bushels each. Around these mounds place corn stalks vertically, six inches thick; over them place dirt taken from the base of the mounds forming a compact covering one foot thick, and preventing the water from settling under the roots. In finishing the top insert a wisp of straw, to be removed for a short time after every wet spell, to allow the damp confined air to escape. When wanted for use, remove the whole mound opened to your barn, or place of consumption, to be kept dry. Unless this precaution is used, the turnips will speedily rot. By practising the same directions herein given, the ruta бага can be kept as

perfect, sweet, and tender, until April 10, as when they were taken up.

Manner of feeding.

Various and diversified are the opinions of farmers upon the subject of root feeding to stock. My opinion, founded upon practical experience, is that the most judicious and economical mode of using roots is to cook them well. My way of using them is this: to thirty gallons of water add one bushel ruta-baga, chopped fine; one bushel corn and cob meal; one quart salt; all intimately mixed and boiled till the whole make a thick soup; to be given to swine one gallon per feed; to cattle and horses, mixed with cut straw, shucks or chaff; and to poultry in small quantities, and warm, as a condiment to other food, particularly when sulphur be given them. The skeptics are invited to view my stock. They can then judge by their appearance of the nutritious qualities of ruta-baga, and corn and cob meal soup. J. G. T.

Cloverdale, near Petersburg, June 24th.

FATTENING ANIMALS.

There are certain principles which apply to the feeding of all animals, which we will shortly notice:—

1. The breed is of great importance. A well bred animal not only affords less waste, but has the meat in the right places, the fibre is tender and juicy and the fat is put on just where it is wanted. Compare the hind leg of a full blooded Durham ox, and a common one. The bone at the base of the tail extends much further in the former affording more room for flesh, and the thigh swells out of convex or circular shape; while in the common ox it falls in, dishing and hollow. Now the round is the most valuable cut, and is only found in perfection in high-bred stock. The same is the case over the whole body. So well do eastern butchers understand this, that their prices are regulated by the breed, even where two animals are equally fat. They know that in a Durham or Hereford ox, not only will there be less offal in proportion to weight, but the greatest quantity of meat will be where it brings the highest price when retailed, and will be of a richer flavor and more tender fibre. The same is the case with hogs. A large hog may chance to make more meat on a given quantity of food than a small one, but the meat of the first will be coarse and tasteless compared with the other; and in the east flavor and tenderness greatly regulate prices. Consequently moderate sized, short-legged, small headed hogs, always, in the long run, beat large breeds out of flavor. In preparing for market, "fashion and taste" must be as much considered by the farmer as by the tailor. This one fact is at present revolutionizing the English breed of sheep. The aristocracy always paid high for small Welch and Scotch mutton; but the great consumers, the mechanics, preferred large fat joints. The taste is now changed. In Manchester and other such cities, these large joints have become unsalable; and all the efforts of the breeder are now turned towards small breeds maturing early, with comparatively little fat. According to late writers, the large Leicester and Cotswolds are going quite out of fashion. When we give three thousand dollars for a Durham bull it is not that his progeny are "intrinsically" more valuable to that amount,

but the increased value and the fashion together make up the difference. And it is thus that while Durhams and Herefords are preferred for ships and packing, Devons are high in repute for private families. The joints are smaller, but the meat has a peculiar richness, probably found in no other kind of stock; and the proportionate waste is said to be less than in any other breed. Thus in the London market, the Scotch Kyloes, and then the Devons, (the former even smaller than the latter) brings the highest price, because preferred by the aristocracy. So in Dublin, spayed heifers are sought for. But the breed also regulates the profit. There is nothing more certain than that one kind of animal will fatten to a given point on much less food than another, and as fattening our stock is only another mode of selling our grain and grass, those animals are to be preferred which come to maturity soonest, and fatten on the least food. The difference in hogs is very great and important. While some breeds must be fed for two or three winters, others are full grown and fattened at ten months old; and the difference in profit is enormous. We cannot go into particulars, but the following rules may be considered as applying to all. An animal may be expected to fatten easily when it has fine bone, and fine soft elastic skin, with thin or silky hair: the head and legs short, the "barrel" large, but chest and lungs small; and when it is quiet, sleepy and easy in temper.—An unquiet, restless, quick-tempered animal is generally a bad feeder, and unprofitable.

2. Much depends in fattening on outward and mechanical management. Fat is *carbon*, or the coal which supplies the body with heat. If we are exposed to cold, it is burnt up in our lungs as fast as it is deposited by the blood; but if we are kept warm by shelter or clothing, it is deposited throughout the body, as a supply on hand when needed. Warm stables and pens are a great assistance in fattening, and should never be neglected. So, also, quiet and peacefulness are important. Every excited action consumes some part of the body which has to be supplied by the food, and detracts from the fat. In the climate of Michigan, warm stables, regular feeding at fixed hours, and kind treatment, with perfect cleanliness, save many a bushel of grain. Animals fed at irregular times are always uneasy and fretting.

3. Ground and cooked food fatten much more profitably than raw food. Mr. Ellsworth found that hogs made as much flesh on one pound of corn ground and boiled to mush as two pounds raw unground; though the first did not fatten quite as rapidly, as they could not consume as much food in the twenty-four hours. By grinding and soaking, ten hogs will each gain one-hundred pounds in weight, on the same food that five would do if it were raw.

4. A change of food helps in fattening. Thus an ox fed entirely on corn and hay will not fatten as fast or as well as one which has roots, pumpkins, ground oats or buckwheat, &c., fed to it at regular periods. The latter may contain intrinsically less nourishing matter than the corn, but the change produces some unknown effect on the stomach and system, that adds to the capability of depositing fat. The best feeders change the food very frequently, and find that they make a decided profit by so doing. Salt should be given with every meal to cattle—say an ounce a day. It preserves the appetite and prevents torpor of the liver,

to which all fattening animals are subject. This torpor, or disease, is, to a certain extent, conducive to fat; but carried too far the animal sinks under it.

5. In cattle the skin should be particularly attended to. A fat animal is in an unnatural state, and consequently easily subject to disease. Taking no exercise, it has not its usual power of throwing off poisons out of the system; and if the skin is foul, the whole labor is thrown on the kidneys. It is found by experience that oxen, regularly curried and cleaned daily, fatten better and faster than when left to themselves; and if the legs are pasted with dung, as is too often the case, it seriously injures the animal.

6. Too much rich food is injurious. The stomach can only assimilate a certain quantity at once. Thus an ox will prosper better on thirty pounds of corn and thirty pounds of cob ground together daily, than on forty pounds of ground corn. These mixtures are also valuable and saving of cost for hogs when first put in the pen. If an animal loses its appetite, the food should at once be changed, and if possible roots, pumpkins, or steamed hay may be given.

7. Oxen will fatten better if the hay or stalks are cut for them, but care must be taken not to cut too short. An inch in length is about the right size for oxen, half or three-quarters of an inch for horses.—*Farmer's Com. and Horticultural Gazette.*

EFFECTS OF FEEDING STOCK UPON THE CORN FIELD PEA.

MR. EDITOR:—I have read with much pleasure the observations of Mr. Edmund Ruffin in your May number of the *Soil of the South*, upon "the facts and causes of injury to animals from eating peas," and by your editorial invitation, I will offer you my experience upon the same subject, although I have not lost the first animal from the effects of the cornfield pea.

I perhaps had better premise, by saying to you that I am a young planter, not having planted but five years. When I commenced planting I sought all the agricultural information that I could get, by books, agricultural papers and information from persons that I knew to be experienced upon the subject upon which I sought information. I became the subscriber to seven different agricultural papers, and for fear some old *anti-book* farmer may ask why take so many papers, I will say that I did so for the purpose of having the experience of others upon the various subjects connected with "practical husbandry" and to apply that experience, according to my judgment, to my own farm; as I am about to get off the subject I started upon, I will return to it.

I have cultivated the corn field pea ever since I commenced farming, and have made pretty fair crops, and have never gathered only

enough for seed and a few for the negroes and whites also—leaving the balance of the crop in the field to be pastured off by the stock. I plant my peas in the month of May among my corn, using principally the red or "Tory Pea," which pea will lay on and in the ground all the winter, and not rot or decay, and, at the proper season in the spring, come up.—All other varieties of the pea, that I have tried will rot after the first wet spell in the fall. I have this year one field of corn containing one hundred and twenty-five acres, every acre of which is already planted with the Tory Pea. I have four acres of ground peas and five acres of sweet potatoes; I also have a great many pumpkins planted in the same field. In the fall, when I gather my corn, I gather a few of the sweet potatoes—as many as all of the hands can use before frost, and some few of the pumpkins for stock, &c. &c. Through this field passes a tolerable large stream of water, which I consider indispensable. I place three or four troughs in which I constantly keep ashes sprinkled with salt. My hog feeder tolls the hogs, turning them in near the stream of water, giving them just as much corn as they can or will eat. The hogs will first commence on the ground pea and potatoe patches, eating alternately of each and it will be some two weeks or more (if the ground peas and potatoes are pretty good) before you will discover that they have touched the "Tory Pea." Now and then you will see where they have taken a few mouthfulls out of a pumpkin. I keep the hogs on this field until I gather the adjoined field of corn containing about one hundred and forty acres, which is also in peas. I have in this field, five acres of ground peas and five acres of sweet potatoes, with plenty of pumpkins and water. If it is the season for saving sweet potatoes, I gather and save all the large potatoes out of this field for winter use. I gather about twenty bushels of ground peas for seed the ensuing year. I gather as many pumpkins as I can well save and feed away before rotting. I also gather from this field whatever peas I may wish to save for use or sale. I then remove my troughs and keep ashes and salt in them as in the first field, and have the hogs turned in.

My horses, mules, cows, sheep and hogs are all indiscriminately turned in, but never hungry, always full, salted and near the water.—I do not think that I have ever lost an animal from the effects of corn field pea. But to the contrary all my animals come out fat and sleek; particularly the hogs. And as the best evidence of this, I never have had any bacon

to buy, but every year have some fine hams to sell, for which I have never failed to obtain fifteen cents per pound. Any man can come to my smoke house now and see what a handsome lot of fine yellow bacon I have in it. He can then go to my hog lots when my hog feeder blows his horn and see and count over two hundred hogs squealing for their daily allowance of corn. It is my opinion that if a hog is well fed in winter, and grows fat on corn, and is then neglected and not fed in the spring, and allowed to shift for himself on grass, nine out of every ten will die.

If every farmer will furnish his hogs with plenty of good sound grain of any kind, I have no hesitation in saying that he will raise an abundance of meat. But on the contrary, if he calculates to feed man or beast on unsound provisions, sickness and death will be the natural consequence.

This article is already spun out too long. I may hereafter write you on other subjects, according to my experience in "practical husbandry."—*Soil of the South.*

RATE OF INTEREST.

The Bank of England, under the influence of the movement of gold at the seat of war, and of the subscriptions of the Turkish loan in gold, has raised the rate of interest in London. It does not readily appear how a higher rate of money in England will retain gold in the vault of the Bank under a war demand. In times of business activity when gold runs out under the influence of a small profit, an advance in the rate of interest diminishes those profits as well as to act as a warning against entering into engagements in an advancing state of the money market, a diminished activity in trade in produced, with a lessened demand for money, which corrects the difficulty. When however, the demand for money is one of "state necessity," above all consideration of price, the raising of the rates does not reach it, as said the elder Rothschild before the Parliamentary Committee, on the occasion of the Russian war with Turkey in 1829. "When governments want gold price is no object. If one per cent. will not bring it they will give ten per cent on any sum." Inasmuch, however, as that a rise in interest checks the employment of capital in ordinary commercial operations, it may so far aid the future loans of government as to turn so much more capital into its service. The war absorbs nearly or quite as much as the product of the gold countries; but it was supposed a slight check given now through a higher rate

of interest to reviving enterprise would suffice until the outward current of gold should react and return to the coffers of the Bank. This is not likely, however, to be the case. The United States are the chief source whence England is to draw wheat and corn as well as gold, and exports hence of the former must check the remittances of the latter, thus drying up one of the sources whence the war is to be fed. When some weeks since we endeavored to show that the export demand for bread-stuffs must in any event be large, many received the statement with surprise who now are disposed to exaggerate the movement. The fact is that the quantity of food to be spared from the United States is not so large by any means as has been estimated, and what England buys in the East through the opening of the Danubian provinces will enhance that gold drain which is already become inconvenient. In the United States business has revived with a very considerable degree of vigor, but its continuance must depend upon a fall in the price of food which will admit of purchase of manufactured articles on the part of those who buy food habitually, and who during the last year have had their means absorbed mostly for that purpose. There are now no enterprizes afoot that absorb much capital, which accumulates very rapidly here. In England the accumulation is absorbed by the war. It would follow that under these circumstances capital will be in England, relatively to the United States, dearer than perhaps ever before, leading to a recall of any funds that may habitually have been employed in the dearer market. As the expenses and consequent taxes of the war increase, however, capital will migrate to escape taxation. It is probably the case that the United States have now reached a point where the capital in the country bears to its wants a much more equal proportion than ever before, and that in years of ordinary business, without unusual speculation, the tendency of the rate of interest will be downwards. The dependance of the country upon foreign aid to carry out enterprizes of even small magnitude, has gradually passed away. Since the days when the Fathers of the Revolution were compelled to solicit small loans of France and Holland to defray expenses of the first State necessity, capital has largely accumulated. The enterprize of the people, and the increase in their numbers have, however, served to keep demand in excess even of that rapid accumulation. The expenses of the Mexican war, which cost nearly as much as the Revolution, were hardly felt in the country, and an im-

mense sum has been absorbed in railroads which would not have been felt but for the severe loss sustained last year in crops and by the consequent reduction in productive labor. This loss has this year been made up by Providence, and active values have been restored to railroads, shipping, and other descriptions of capital. Already a renewed impulse has been given to industry, which is more effectively productive now than ever before, except perhaps in those localities where drought has stopped the motive power. With all the natural and mechanical productions of capital, there is as yet little disposition to extend credits. It does not appear therefore, that the advancing value of money in England under war expenditure can much effect American interest, other than perhaps to depress slightly the value of cotton.—*N. Y. Economist.*

PRODUCTION AND CONSUMPTION.

The great increase in the importation of men during the past ten years seems to have been followed by an increase in the export of commodities. The number of immigrants arrived in the country, since 1850, appears to have been 10 per cent. of the white inhabitants then enumerated. So great a number added to the consumers in the home market would, it would appear at first sight, cause so great a demand for consumption as to diminish very much the surplus for export. The reverse, however, seems to have been the case, inasmuch as that the exports have increased in a ratio as great as the arrivals. The annual "importation of men" and exportation of commodities was as follows:

	Men Imported.	Commodities Exported.
1844.....	74,607	\$99,115,179
1845.....	102,415	114,046,606
1846.....	158,643	113,488,516
1847.....	234,756	158,648,622
1848.....	226,524	154,032,131
1849.....	269,610	145,755,820
1850.....	279,493	151,398,720
1851.....	291,370	196,489,748
1852.....	318,201	192,368,984
1853.....	368,613	213,417,697
1854.....	469,474	252,047,806
	<hr/>	
	2,785,241	

The influence of the famine year, 1847, gave an impulse to the importation of men, and to the export of food to feed those who remained behind. Since then the arrivals of men have annually increased, as has also the exports of surplus commodities. The arrivals since 1843 of a number of human beings

equal to the whole population of the States at the date of the Revolution, must certainly have caused a great demand for products, but it would appear from the column of exports that they have produced more than they consumed, since the aggregate surplus which the country has to spare has annually increased. The fact of this increased export shows also that notwithstanding the large arrivals, and the apparent high prices which have here prevailed, the general level of prices has been lower than abroad, to admit of the larger export. The production in the United States must have proceeded in an immense ratio to meet the home demand of these rapidly increasing numbers, and to admit of greater exports, the general heads of which, as classified in the official returns, are as follows :

EXPORTS FROM UNITED STATES.

Products of the	1844.	1854.	Increase.
Sea.....	\$3,350,501	\$3,044,301	
Forest.....	5,808,712	11,646,571	\$5,887,859
Agriculture.....	17,388,816	66,900,294	49,511,478
Tobacco.....	8,397,255	10,016,046	1,618,791
Cott n.....	54,063,501	93,596,220	39,532,719
Manufactures..	8,616,459	26,179,503	17,563,044
Raw Produce..	963,265	2,602,301	1,639,036
Specie.....	183,405	38,062,570	37,879,165
Total Domestic.	99,715,179	252,047,806	152,382,627
Foreign G ods..	6,214,058	21,715,464	15,501,308
Foreign Specie.	5,270,809	3,134,730	..
Total Exports.	\$111,200,046	\$276,898,000	\$165,697,954

Under every head the increase has been very large, as well of manufactured as of agricultural products. The accustomed wants of the whole population have been supplied with manufactures, and 200 per cent. more spared for exportation. Considering the increased wealth of the country it is not probable that the consumption per head has been any less than in 1840. Taking that census as a basis, Professor Tucker, in his work on the census, gave the production of all articles in the country at \$1,063,134,736, of which \$113,895,634 was exported, leaving \$949,239,102 as the annual products consumed, or \$57 per head. At the same rate the production is now as follows :

	Production.	Export.	Consumption.
1840.....	\$1,063,134,736	\$113,895,634	\$949,239,102
1854.....	1,781,328,107	252,047,806	1,539,280,301
Increase....	\$718,193,371	\$138,152,172	\$590,041,199

So vast must have been the productive power of the country, arising partly from the influx of emigrants, bringing with them generally as much capital as the occupation of new land requires, as well as more or less manufacturing skill and the means of prosecuting it. The great influx of people last year, at a time when the crops were short,

without doubt, aided greatly in maintaining prices, and they will this year have an influence in diminishing the quantity of food that may be spared from the country. It is however, the case also that numbers of those who within the three last years betook themselves to farms and were not well rewarded last year at harvest, will this year, in common with other agriculturists, reap a reward that must bring them into the market as consumers of goods, and on a pretty extensive scale.—Year before last, when the railroad expenditure was active, numbers of new shops were opened all over the West, causing a good demand for stocks of goods, while older establishments enhanced their varieties. During the past year those stocks have run low and require ample replenishment to meet the renewed demands. These influences are now being felt in the markets.—*N. Y. Economist.*

TO DESTROY INSECTS.

In the winged state, most small insects may either be driven away by powerful odors or killed by strong decoctions of tobacco, or a wash of diluted whale-oil or other strong soap. Attention has but recently been called to the repugnance of all insects to strong odors, and there is but little doubt that before a long time, it will lead to the discovery of the means of preventing the attacks of most insects by means of strong smelling liquids or odorous substances. The moth that attack furs, as every one knows, are driven away by peppercorns or tobacco, and should future experiments prove that at certain seasons, when our trees are most likely to be attacked by insects, we may expel them by hanging bottles or rags filled with strong smelling liquids in our trees, it will certainly be a very simple and easy way of ridding ourselves of them. The brown scale, a troublesome enemy of the orange tree, it is stated in the *Gardener's Chronicle* have been destroyed by hanging plants of the common chamomile among its branches. The odor of the coal tar of gas works, is exceedingly offensive to some insects injurious to fruits, and it has been found to drive away the wire worm, and other grubs that attack the roots of plants. The vapor of oil of turpentine is fatal to wasps, and that of tobacco smoke to the green fly. Little as yet is certainly known respecting the exact power of the various smells in deterring insects from attacking trees. What we do know however, gives us reason to believe that much may be hoped from experiments made with a variety of powerful smelling substances.

Tobacco water, and diluted whale-oil soap,

are the two most efficient remedies for all the small insects which feed upon the young shoots and leaves of plants. Tobacco water is made by boiling tobacco leaves, or the refuse stems or stalks of the tobacco shops. A large pot is crowded full of them, and then filled up with water, which is boiled until a strong decoction is made. This is applied to the young shoots and leaves with a syringe, or, when the trees are growing in nursery rows, with a common white-wash brush; dipping the latter in the liquid and shaking it sharply over extremities or the infested part of each tree. This, or the whale oil soap suds, or a mixture of both, will kill every species of plant lice, and nearly all other small insects to which young fruit trees are subject.

The wash of whale oil soap is made by mixing two pounds of this soap, which is one of the cheapest and strongest kinds, with fifteen gallons of water. This mixture is applied to the leaves and stems of plants with a syringe, or in any other convenient mode, and there are few of the smaller insects that are not destroyed or driven away by it. The merit of this mixture belongs to Mr. David Haggertson, of Boston, who first applied it with great success to the rose slug, and received the premium of the Massachusetts Horticultural Society for its discovery. When this soap cannot be obtained, a good substitute may be made by turning into soap the lees of common oil casks, by the application of potash and water in the usual way.

Moths and other insects which fly at night are destroyed in large numbers by the following mode, first discovered by Victor Adouin of France. A flat saucer or vessel is set on the ground in which is placed a light, partially covered with a common bell glass besmeared with oil. All the small moths are directly attracted by the light, fly towards it, and, in their attempts to get at the light, are either caught by the glutinous sides of the bell glass, or fall into the basin of oil beneath, and in either case soon perish. M. Adouin applied this to the destruction of the *pyralis*, a moth that is very troublesome in the French vineyards; with two hundred of these lights in a vineyard of four acres, and in a single night, thirty thousand moths were killed and found dead on or about the vessels. By continuing his process through the season, it was estimated that he had destroyed female moths sufficient to have produced a progeny of over a million of caterpillars. In our orchards myriads of insects may be destroyed by lighting small bon-fires of shavings, or any refuse brush; and in districts where the apples are

much worm-eaten, if repeated two or three nights at the proper season, this is a very efficient and cheap mode of getting rid of the moth which causes so much mischief. Dr. Harris, knowing how important it is to destroy the caterpillar in the moth state, has recommended flambeaux, made of tow wound round a stake and dipped in tar, to be stuck in the fruit garden at night and lighted. Thousands of moths will find a speedy death, even in the short time which these flambeaux are burning. The melon-bug may be extirpated by myriads in the same way.

A simple and most effectual mode of ridding the fruit garden of insects of every description, which we recommend as a general extirpator, suited to all situations is the following. Take a number of common bottles, the wider mouthed the better, and fill them about half full of a mixture of water, molasses and vinegar.—Suspend these among the branches of trees, and in various parts of the garden. In a fortnight they will be found full of dead insects, of every description not too large to enter the bottles—wasps, flies, beetles, slugs, grubs, and a great variety of others. The bottles must now be emptied, and the liquor renewed. A zealous amateur of our acquaintance, caught last season in this way, *more than three bushels* of insects of various kinds; and what is more satisfactory, preserved his garden almost entirely against their attack in any shape.

The assistance of Birds in destroying insects should be duly estimated by the fruit-grower. The quantity of eggs and insects in various states, devoured annually by birds, when they are encouraged in gardens, is truly surprising. It is true that one or two species of these, as the ring-tail, annoy us by preying upon the earlier cherries, but even taking this into account, we are inclined to believe that we can much better spare a reasonable share of a few fruits, than dispense with the good services of birds in ridding us of an excess of insects.

The most serviceable birds are the common sparrows, the wren, the red-breast, and, in short, most of the birds of this class. All these birds should be encouraged to build nests and inhabit the fruit garden, and this may most effectually be done by not allowing a gun to be fired within its boundaries. The introduction of hedges or live fences, greatly promotes the domestication of birds, as they afford an admirable shelter for their nests. Our own gardens are usually much more free from insects than those a mile or two distant, and we attribute this in part to our practice of encouraging birds, and to the thorn and arbor vitæ

hedges growing here, and which are greatly resorted to by those of the feathered tribe which are the greatest enemies of the insect race.

Among animals the *toad* and the *bat* are great insect destroyers. The common bat lives almost entirely upon them, and in its evening sallies devours a great number of moths, beetles, weevils, etc.; and the toad quietly makes way with numberless smaller insects.—*Downing*.

From the Country Gentleman.

DRAINING LAND BY WELLS.

You wish to know if land can be drained by wells. I have made one experiment only and that was entirely successful. I owned a piece of land on which there was a basin of about three-fourths of an acre, which received the surplus water of at least ten acres. It would sometimes be from two to three feet deep in the centre. The water stood in the basin at least eight months in the year, and the basin was full every hard rain the other four months. On the 3d of August, 1841, I dug a well nine feet deep in the centre of the basin, and came to living water, which rose very rapidly, so much so that I expected to see it run over the top in a short time. I think the water rose at least two feet in ten minutes and then stopped, and remained at that depth until a heavy rain of three days. I then went to look at the well, expecting to find it full and running over; but to my utter astonishment, there was not more than two and a half feet in the well. It had risen about four feet during the storm, I should judge by the marks on the side of the well. There must have been a great quantity of water run into the well, as at least ten acres discharged its surplus water into it, and the rain fell in torrents during three days. I then dug four open drains leading into the well, and the land has been sufficiently dry for wheat, corn, oats or grass, ever since. It has been in grass for the last twelve years, and has borne a heavy crop of first-rate hay.

I should advise in all instances, to dig until you come to living water, and then the water will pass off in the fissures of the earth. I have not the least doubt but that almost any spring can be drained by digging a well at a little distance, and leading the water into it. I would state that I filled the well full of stone, thinking it would be cheaper to dig a new one than to stone in and keep it covered, if it should fail to carry off the water.

Middletown, Ct.

ASA HUBBARD.

RENDERING LARD.—One of the best house-keepers in the County of Philadelphia, has communicated to us the following recipe for rendering lard, which was obtained from Charleston, and which possesses many important advantages over the common mode. It is simply to put in the kettle before the lard—say *three pints of lye*, made of hickory ashes, to a common barrel-kettle, (generally holding less than a barrel.) The advantages of this are, that the lard renders *cosier, becomes much whiter, is sweeter, and will keep longer*. This method has been pursued for some years, with the highest satisfaction.

Will not some of the numerous house-keepers who read this paper, try it this season and inform us of the result?

BEEF PUDDING.—Take about one pound of steak, cut it length ways in three pieces, and then slantways at each inch, instead of in lumps; but should you buy cuttings of meat from the butcher, then remove all the sinew and over fat, and cut the large pieces slantways, put them in a dish, and sprinkle over with a tea spoonful of salt, a half ditto of pepper, and a tea-spoonful of flour, the same of chopped onions; mix well together, make six or eight ounces of paste, roll it to the thickness of an inch, or a little more, put pudding cloth in a basin, sprinkle some flour over it, lay in your paste, and then the meat, together with a few pieces of fat; when full, put in three wine glasses of water, turn the plate over the meat, so as not to form a lump, but well closed; then tie the cloth, not too close on the paste, or it will not be light; boil it fast in four quarts of water for one hour; take it out, let it stand a few minutes to cool, cut the string, turn back the cloth, place a dish on the top, and turn it over on it, remove the cloth, and serve. If you choose to add a kidney, it may add to the richness of the gravy, also a few oysters, or even a mushroom. The crust should always be cut with a knife. If you carefully follow the above instructions you will have a pudding quite perfect, the paste as light and as white as snow, and the meat tender, with a thick gravy.

HOW TO MAKE SHEEP SKIN MATS.—Sheep skin mats are prepared by taking a fresh skin; stretch it (wool side down) on a board, tacking it carefully round the edges, then take equal parts of fine salt and alum, powdered and thoroughly mixed—rub the skin three times well, with the powder, leaving twelve hours or more between each time—keep it out of the sun, but in the air.—*Farm. Journal*.

COMPARATIVE VALUE OF OX AND HORSE LABOR.

The question of the comparative value of ox-labor and horse-labor, however, is a very complicated and difficult one; and has been keenly discussed by some of the ablest continental writers on rural economy; and, even when thoroughly understood and perspicaciously investigated, must be variously determined according to circumstances. Bugar says, "We must take into consideration the amount of labor which horses and oxen can perform, in a given period, if we would decide respecting the one or the other. Because horses perform more in the same time than oxen, and are better adapted for many kinds of work; so it not rarely happens that labor is carried on cheaper with horses; a person gains more in the less number of the horse-teams and the men required for them, compared with the greater number of the ox-teams, than the cost of their keeping, and the interest of the out-lying capital. If the ox-team in a given time performed as much work as the horse-team, it would unquestionably be cheapest to use them for all the work of the farm, and quit the use of horses wholly; but because oxen are much slower in drawing, and a yoke of them, if they are strong and well trained, will accomplish in favorable circumstances only $\frac{2}{3}$ or $\frac{1}{2}$ of what a good span of farm-horses will; therefore if the keeping of oxen is not unusually cheap, on account of the increased number of teams and of men required to take care of them, there will be greater expense with oxen, than with horses." Thær says, "Horses have an undeniable preference in the following particulars:—1. They are suitable for all and every kind of work of land-husbandry, in all ways and in all weathers. One, therefore, when he keeps only horses, is not obliged to choose out work for them, but can use his whole team for any business that occurs, and leave no part of it to stand still. 2. They accomplish every kind of work more rapidly, and are more constant. One can, therefore, not only complete the work in the same time more promptly, but also require a longer day's work of them. Thus the wagon will accomplish more with an equal number of horses than with oxen; although with the usual draught of a load they exert not more power than oxen, yet they overcome by their rapidity of motion and energy, many a short resistance before which oxen stand still. In favor of oxen are the following:—1, They perform the greater part of the works on a farm, as ploughing, and the near carrying of loads, as well as horses do: and one can in a usual day's work, if they are well fed, expect

nearly as much from them. They perform the work of ploughing in a certain degree better than horses. 2. The cost of them is considerably less. Their purchase, on an average, is not near so high; their harness is much cheaper; their food costs much less, and consists in such things as, on account of its transportation, are not so marketable as the grain, on which horses are kept. 3. What is an important particular is, that, if they are well taken care of, and not too long kept at work, they lessen not as much in value, but improve for the most part; so that they often sell for more than they at first cost, and thereby soon pay the interest on the standing capital; whereas, on the other hand, the value of the horse soon sinks to nothing, and the capital is wholly exhausted. They are also subject to fewer hazards and casualties. 4. They demand less attention, as one ox-herd can take care of 30 oxen, if others work with them by change. Finally, they give a greater quantity of excrement, which in general affords a more productive manure than that of horses. Such horses and oxen must be compared, the relation of which in respect to their condition and care, are not unlike, &c. There can, therefore, be no doubt, that those labors which can be proportionally well performed by oxen, will be done cheaper with oxen than with horses. If a farm had only such work to be done as is convenient for oxen, and it could be executed with allowing time to rest, &c., then oxen should be used. But if, according to recent experiments, another fodder can be introduced for horses than corn, and thus the expense be lessened, then the question between horses and oxen would probably stand differently."

[*Rural Cyclopaedia.*

RICHMOND MARKETS.

FLOUR--The market is firm under the late news. Sales from store at \$9 25 to \$9 50 for Superfine and Extra.

WHEAT--Sales at \$1 90 to \$2 10.

CORN --\$5 to 90c.

RYE--90 to 95c.

GUANO--\$55 to \$60.

LARD--12½ to 14c.

BACON--13 to 15c.

WOOL--20 to 35c.

FEATHERS--35 to 42c.

PLASTER--\$4 50; cargo prices.

BACON --The Bacon market is rather dull, with a downward tendency in prices and limited sales. We quote Western Sides, 14c. per lb.; Shoulders, none in market; Hams 13 a 15c.; Smithfield hog round 15c. Nominal, none in market; city cured, none in market. Stocks of all descriptions light.

TOBACCO--Receipts are light, without much change. Lugs, \$4 50 to \$5 50; Common Leaf, \$6 to \$7 50; Medium to good, \$7 50 to \$11; Fine Shipping \$10 to \$12; Manufacturing, \$12 to \$20.

GOLD EXPORT.

We some weeks since called attention to the fact, that the war expenditure was but now begun to be felt in this country through the demand for gold. In another column, an extract from the *London Economist* of the latest date will be found in relation to the same subject. It admits the necessity of large imports of grain from the United States. In fact, for finer sorts, which are scarce in England, Spain and America are alone to be depended upon. It is obvious, however, that if England is to buy so largely of breadstuffs, as well as Cotton and Gold, that credits on England must become very cheap. Unless the gold returns rapidly from the seat of war, it must command relatively a premium, which premium will manifest itself in the low price of bills drawn against it. This low price of bills is, in effect, a diminution to the same extent in duties upon imports. If importers who gave 110 for bills in the Spring, can remit for Spring goods at say 105, the difference is greatly in their favor, and must impel larger imports in exchange for the gold and produce. The loss on the export of gold at low rates, constitutes the premium which the Government must pay for inordinate supplies of gold for war purposes.—*N. Y. Economist.*

EXPORTATION OF WHEAT AND WOOL FROM SPAIN.—It is but a few years, comparatively, since Spain produced all the FINE wool in the world. But the dispersion of the breed of sheep which yielded this wool—the Merino—over other countries, has lessened the production in Spain, while from want of care in breeding, the quality of the Spanish wool has to some extent deteriorated. Wheat has taken the place of wool-growing in that country. The change is worthy of note by those interested in questions affecting the commercial relations of nations. The *Farmer's Magazine* gives the following summary of the importations of wheat and wool into England:

Of Spanish wool we received in 1850 440,751 lbs.; this decreased in 1854 to 383,150 lbs., to 233,413 lbs. in 1852, and to 154,146 lbs. in 1853. In these years, however, the amounts of the Spanish wheat and flour imported observed a very different direction. It was:—

In 1850,	-	-	2,184 qrs.
In 1851,	-	-	115 "
In 1852,	-	-	6,321 "
In 1853,	-	-	103,814 "

and this has since gone on very largely increasing in 1854 and 1855.—*Boston Cult.*

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WORMS! WORMS!!

A great many learned treatises have been written, explaining the origin of, and classifying the worms generated in the human system. Scarcely any topic of medical science has elicited more acute observation and profound research; and yet physicians are very much divided in opinion on the subject. It must be admitted, however, that, after all, a mode of expelling these worms, and purifying the body from their presence, is of more value than the wisest disquisitions as to the origin. The expelling agent has at length been found. Dr. M'LANE'S VERMIFUGE is the much sought after specific, and has already superceded all other worm medicines, its efficacy being universally acknowledged by medical practitioners.

Purchasers will please be careful to ask for Dr. M'LANE'S CELEBRATED VERMIFUGE, and take none else. All other Vermifuges, in comparison, are worthless. Dr M'Lane's genuine Vermifuge, also his celebrated Liver Pills, can now be had at all respectable Drug Stores in the United States and Canada. Nov. 1-2m

ANOTHER LETTER FROM TEXAS.

TRAVIS Co., TEXAS, Aug. 24, 1854.

Messrs. Fleming Brothers:

Dear Sirs—There were several cases of Chills and Fever in my mother's family at the time we received the M'LANE'S LIVER PILLS ordered in my letter of June 12th, and a few doses administered in each case produced the desired effect, thus demonstrating the efficiency of these celebrated Pills in that disease.

Mother has not been troubled with the sick head ache since she has commenced taking these Pills, and as we have but few of them left, you will please send us another dollar's worth. Direct, as before, to Austin, Texas. Respectfully yours,

MEREDITH W. HENRY.

Purchasers will be careful to ask for DR. M'LANE'S CELEBRATED LIVER PILLS, and take none else. There are other Pills, purporting to be Liver Pills, now before the public. Dr. M'Lane's Liver Pills, also his celebrated Vermifuge, can now be had at all respectable Drug Storers in the United States. Nov. 1-2m