ner, and a third, one lot coming after the other, so a supply of grain at a proper stage of germination is kept up.

By this method there is a confusion in working the grain upon the floor; the different steepings unavoidably get mixed, and consequently some of the grain is used before arriving at the proper stage of germination.

Horsekeepers (especially Norfolk men, who place a high value upon the feeding properties of sprouted grain for horses), place a bushel or two of wheat or barley in a sack, throw it into a pond or ditch, and at the end of forty-eight hours remove and bury it in chaff in the sack, and shake it once a day until it is fit for use; a second lot is treated like the first, and a third, so providing a continual supply.

The germinating process is influenced by temperature, and different effects are produced upon the various kinds of grain under precisely similar influences. Whilst barley at the temperature of 40 deg., F., or any lower degree, requires turning once only in 24 hours, it is necessary to turn wheat twice in the same period. In summer either is manufactured in seven days; in winter 12, 16, and, if the grain has been harvested in seasons like 1864-5-8, as much as 20 days are required for the grain to arrive at a proper stage of germination. Wheat or barley requires steeping 48 hours, and will germinate favorably when not mixed together, whereas maize requires steeping four days and four nights, and will germinate only in combination with wheat or barley.

Whilst the use of sprouted grain was limited to feeding a few horses or pigs occasionally, the inconveniences belonging to the ordinary way of manufacture were not of much importance; but when its value as food for sheep and lambs became known, with its rapidly increasing consumption it became necessary to adopt improved methods of manufacture.

By a most simple method grain can be germinated equally valuable for feeding purposes to that which has been prepared in a malthouse. A herdsman or other farm laborer instructed in the system can, in an ordinary farm outhouse, 12 feet square, with close walls, board, brick or asphalt floor, and suitable utensils—steeping tub, draining, heating, and germinating boxes—prepare, by the labor of one hour daily, sufficient sprouting grain to give a pint daily to 256 sheep, or half peck each to 32 horses, or the same quantity each to 32 oxen; or, in a house 18 feet by 13 feet, so as to give space enough to contain steeping tub, draining and heating boxes, each 5 feet by 3 feet, 20 inches deep, a tier of germinating boxes in addition, same size as floor boxes, supported on trestles or other wood work, about 4 feet, and immediately above the floor boxes, sufficient grain can be sprouted to feed 250 sheep, 20 horses, 20 oxen and 50 pigs, allowing pigs and sheep 1 pint, horses and oxen ½ peck daily.

By the box-system of sprouting, space is economized, the same depth of grain can be had at the sides as at the middle of the beds, grain of the different steepings is prevented getting mixed, and none can get to the feeding trough insufficiently germinated.—*Agricultural Gazette.*

The mere mention of the word science or scientist appears to be obnoxious to many of our farmers, who denounce scientific agriculture as a veritable cheat and a snare. Of course it is not to be denied that there has been, and is at the present day an immense amount of charlatanry among the self-styled scientific agriculturists, but the same is true of all other professions or branches of science and art. The medical profession, important as it is to the welfare of mankind, is overburdened with quackery, but that does not invalidate the claims of the skilful physician to honorable recognition by the community. The greatest obstacle to the advance of true science in all the learned professions is the crowding of legitimate channels with charlatans, who stand in little fear of punishment if discovered, so that the unlearned or even imbecile frequently assume titles to which they vhae no right.

But the farmer, in a majority of instances, has misunderstood the meaning of the term science or scientific agriculture, believing it to be something far beyond the comprehension of persons who have not been specially trained in school or college. Now, genuine science, at best, is merely common sense and observation combined, and all preparatory studies are little more than good tools, with which a man works out problems in after years. Of course a mechanic cannot do as good work with a few or poor tools as he can with plenty of the very best, but he may still be scientific; the same is true with the farmer, and the better his preparatory education the more rapid will be his progress; but because he cannot go as deep in his investigations as some others, it does not follow that no investigations should be made.

The idea appears to have got abroad that science in farming means chiefly the analysis of soils and the food of animals; this errors for it certainly is one, originated from the investigations and writings of such men a, Boussingault, Liebig, Johnston, and contemporaneous authors, whose life labours were mainly in that direction, and were, in many instances, carried far beyond what was necessary for practical utility. It is not, however, necessary, for a man to be a thorough chemist, geologist, botanist, or a specialist in any one branch of science, to be a scientific farmer. Good ploughing is a scientific operation, producing both mechanical and chemical results, there being an abundant opportunity for the display of a high order of scientific intelligence in the simple act of turning over the soil, To ascertain just how deep to plough in order to produce the best results on every different kind of land, requires a great amount of study, and many carefully conducted experiments. Then the ploughing previous to putting in a crop is often followed by the stirring of the soil among the plants, and the frequency, depth, and best time for performing the operation call for some very close calculations and investigations, which are undoubtedly of a scientific order.

In the feeding and care of animals scientific investigations are constantly required, and although a farmer may not be able to conduct various analyses in a chemical laboratory, and determine the composition of his timothy or clover hay, and learn which is the richest food for his stock, he can readily obtain the knowledge sought by feeding the two kinds separately, and noting the effect upon the animals. But it is scarcely necessary in these days of cheap books and periodicals for a farmer to spend much time in practical experiments of this kind, for the value for food of nearly every known forage plant was long since ascertained, and a man would be very foolish to spend his time in repeating experiments where no new discoveries are to be made. The great want of the day is not new discoveries in science pertaining to agriculture, but the general diffusion and application of what is already known to a comparatively small number. There is not the least need of any new forage plants or grain, but those we already possess should become better known among the tillers of the soil, and this can only be brought about by a more careful perusal of books and periodicals devoted to natural sciences.

Every farmer should know enough of botany to enable him to distinguish the commonly cultivated grasses and other plants from those growing wild in his uncultivated lands. When he has learned this much, he will know the noxious species from the useful, and enough of their natural habits to enable him to more readily destroy the one and encourage the growth of the other, than if he remained in total ignorance of botanical science. The same is also true of entomology, for it requires no great amount of study to learn the difference between the common moths and butterflies, or to distinguish the bugs from the beetles, and yet this little knowledge would frequently be of great assistance to the farmer in enabling him to know his friends from his foes among the insects. Even what would generally be termed mere "smatterings" of science in the branches named become valuable when applied or employed in farming; hence the importance of their accumulation. and the earlier in life the better.—*N. Y. Weekly Sun.*

CATTLE TO ENGLAND.

Our attention is called to an article in the Michigan *Farmer* of the 13th of February, which we overlooked at the ime, giving an account of the shipment tand sales of 46 head of live bullocks of American breeding and feeling sent from Detroit to England on the steamship *Wyoming* of the Guion line, in the month of December last, of which the following is a summary:

The number of cattle purchased and shipped was fifty, and twenty-nine of these averaged 1551 pounds in weight. The remaining twenty-one averaged 1762. Four head were sold in New York, and