

merit. The Shropshires and Oxfords formed the most attractive elements in it. The Leicesters and South-downs were weak, and the Cotswolds are pronounced by the journal above quoted, "the worst lot we ever remember to have seen." The pigs were not remarkable. A small, but very choice lot of "corn" was exhibited, and there was a splendid display of roots. Among them were a single mangold weighing 5 lbs., a lot of six weighing 14 lbs., and a single ox cabbage weighing over 70 lbs.

The late Prof. Agassiz.

Not science only, but practical agriculture, has cause to mourn over the death of the distinguished man whose name heads this article. He was no reclusive philosopher, shut up in his garret, and absorbed with his theories, but had the sagacity to perceive, and point out the bearings of science upon the affairs of common life. Among many more elaborate references to his eminent labors and services, nothing has pleased us better than the following tribute to his memory, which we find in one of our exchanges, apparently from the pen of a Massachusetts farmer:—

"The noblest man of Massachusetts—both as regards breadth of knowledge, the minuteness, and accuracy of his information, the limitless nature of his sympathies, the magnetism of his personality, and simple purity of character—has died. It is not too much to say that Agassiz was the one man that the culture of the State would have been most loth to part with; and, what is a rarer phenomenon, the merchant, the classes that throng city streets, the farmers of remote country towns, all feel that they have a common property in the general grief. On the occasion of the meeting of the Board of Agriculture, at Fitchburg, Dec. 2nd, the man who he has said he had no time to make money (when he might have made each evening render him up a hundred dollars), had time to explain to farmers the laws of animal growth. Last winter he could ride twenty miles in a sleigh, and spend three whole days in a remote country town, and hold converse with plain farmers. Each felt free, at the country inn, to ask questions; and sure was each of the kindest consideration. It was the willingness of the man to bring so much his mind—the epitome more than any other of nature—to the level of the common mind that endeared him to so many—indeed, to all with whom he came in contact. Immeasurably above the farmer—as is one who stands alone—the farmer ought to feel that he has some share in him. A member of the State Board of Agriculture—the defender of the Agricultural College, the founder of a great museum, in which, what is of practical concern to agriculture, has a prominent place, agriculture is no less indebted to the great Professor than are zoology, geology, and many related branches of physical knowledge."

The Smithfield Club Cattle show.

The *Mark Lane Express* briefly summarizes the above show in the following paragraph, from which we gather that it and the Birmingham show elsewhere reported and were "much of a muchness":—

"As stated in our last week's number, the entries this season exceed those of last year by sixty, the show being numerically the largest held for many years. It is, moreover, one of the best, there being a really beautiful exhibition of Devons, which, for some reason or other, are always better represented in London than elsewhere; while the Short-horns are also in much force both for numbers and merits, there being close upon twenty more beasts of this breed than were sent in 1872. The Sussex, again, are in most respects good, it being probably the largest show of the sort ever seen at Islington; and the four prize crosses standing all in a row are all admirable; as the Extra Stock is headed by two already-famous animals, both 'first' here in 1872. The Herefords, save here and there, are not so remarkable, nor is there any great difference in the entry over that of last year, when white faces ran up to the shortest show known for some time. The most marked falling-off, however, is in the Scotch classes, which, including Highlanders and Polls, only reach in all, sixteen. The sheep show looks to be about an average for numbers, but amongst the pigs the competition is very limited, with the first class of white pigs generally commended, and Mr McNiven's champion pen of Dorsets wonderfully good; but otherwise there is not much merit, and two or three entries were 'referred' on a question of age, and the prize list consequently is incomplete."

The Manures Wasted in the Country.

This is the title of a book by M. Delagarde, recently published in Paris, a notice of which has lately appeared in the *Chemical News*. It is devoted to calling attention to the serious waste of fertilizing material that is taking place in France. Without professing to bring forward anything new to the chemist or scientific agriculturist, the author lays stress on the application of the principles that are already known, and urges upon those engaged in the culture of the soil, the value, and importance of the materials which they are every day throwing away.

To those who have not considered the subject, M. Delagarde's figures are absolutely startling. The total annual waste in France he estimates, and in this he is probably not above the mark, at two milliards of francs, a sum of money amounting to \$400,000,000. And yet, in France, it is a common practice to employ night soil as a manure, under the form of a preparation known as *poudrette*. This *poudrette*, however, the author thinks, is deprived, by its mode of preparation, of five-sixths of its fertilizing value. In this country, night soil is not to any appreciable extent utilized at all, and hence our loss from this cause must be proportionately greater.

M. Delagarde estimated the average yearly value of the dejections of an adult at 28 francs (\$5.60). Supposing the average value of each person's excrement, without taking age into account, to be 20 francs, or \$4, and estimating the population of Canada at three millions, we have an annual national revenue from this source of \$12,000,000. Of course some of this is utilized accidentally, and some is designedly employed as a manure. But if we are warranted, as there seems to be no doubt, in estimating our loss in this respect, as equal, at least, to that of France, it appears that we are throwing away every year \$10,000,000. This is a serious loss, and one that demands our earnest attention, to prevent it in the future. The author considers human excrement to have more than one, and a-half times the value of sheep's dung, twice that of horse dung, and three times that of cow's dung.

The loss of farm-yard manure that is constantly taking place in the country is strongly dwelt upon. "Many persons," says the *Chemical News*, speaking of the book in question, "will be inclined to deny that any waste of manurial matter takes place in the country. They will ask, 'What can become of the excrements of man and beast, if not applied to the land?' But, before manures reach the spot where their action is wanted, they are often suffered to lie for a long time fermenting, and allowing their most valuable constituent, ammonia, 'to waste its sweetness on the desert air.' No less are they injured, in a majority of cases, by the loss of their soluble constituents, such as phosphoric acid, potash, magnesia, &c. It is something quite common, in passing a farm-yard, to notice a dribble of dark-brown liquid oozing from the manure heap, and finding its way to the nearest ditch. Hence, after nourishing the weeds along the watercourse, it ultimately flows into the same brook, and aids in the pollution of our rivers. In like manner, the village cess-pools, too often, will be found draining into the ponds and streams. Thus, though the manure is ultimately carted in due form upon the fields, it is comparatively a mere inert residue, deprived of its most valuable constituents." So much for the evil, one which is unhappily too clear, not only in France, but in our own country, and amongst ourselves. Now, for the remedy. The author proposes to check this waste by the use of portable chests, or tanks, instead of cess-pools, containing coppers (sulphate of iron), or gypsum (sulphate of lime, plaster), to "fix" the ammonia. What is meant by "fixing" the ammonia is this: Ammonia, as we know, in the free state, is a gas very soluble in water, from which solution it rapidly evaporates away. From the decomposition of all organic matter, particularly animal matter, free ammonia is evolved, as may readily be ascertained in many cases by the smell, and unless retained in some way, passes off into the atmosphere. Ammonia, however, will combine with sulphuric acid, to form sulphate of ammonia, which is a solid, and is not volatile. Hence, by forming this compound, we

"fix," or retain the ammonia. When ammonia is brought into contact with sulphate of lime, the sulphuric acid leaves the lime, and unites with the ammonia. Sulphate of iron acts in the same way. Hence by the use of either of these substances in the way indicated, this valuable fertilizing substance may be "fixed," or brought into a non-volatile form, and preserved until wanted by the plant. The contents of these chests can then, from time to time be removed, and applied to the soil. The draining of dung-hills, and urine, he proposes should be collected in pits, or tanks, prepared for the purpose, containing a suitable absorbent mixture. For such a mixture the author recommends the following composition: Eighteen bushels of dry earth, powdered and sifted, three bushels of ashes, two bushels of gypsum, and one bushel of powdered charcoal. This mixture, he considers admirably adapted for absorbing both the volatile, and the liquid constituents of excrements, and hence well calculated to prevent loss both by evaporation, and by draining away, or washing out by rain. Such a mixture is cheap, and could be easily procured.

The author also alludes to the great waste of fertilizing matter in dead animals. This is particularly worthy of our attention. Every winter there are numbers of cows and horses, not to mention cats and dogs, that die, and are buried in the snow, and which are allowed to remain packed in ice until the spring thaw releases them, to be a nuisance, and a source of pestilence to the neighborhood, while the valuable manurial substances that they contain are allowed to run to waste, unheeded. When we reflect that these animals contain those very ingredients which are of the highest value in the products of our fields, namely, the flesh and bone forming constituents, we cannot fail to see how much we lose by our culpable negligence in this particular.

The author also points out that the water in which sheep and wool have been washed, has considerable value as a manure; and the same is the case with the refuse of flax-mills. These materials are only employed as a manure by accident, and from this cause a considerable annual loss ensues.

Another source of valuable manurial material is pointed out by M. Delagarde, which is of rather a novel nature. This comprises the various species of non-edible fungi, such as toadstools, &c., which are so common in many places. He shows that these contain, in their moist state, 1.5 per cent. of nitrogen, and hence are well worth collecting as a manure. In some parts of Europe, these are very abundant. Whether in the quantity in which they occur in this country, and with the high value of labor that prevails here, they would repay the trouble and expense of collecting, is a question. He also protests against the burning of straw, by which, he says, its nitrogen is dissipated, and its mineral constituents thrown into a less available condition.

The losses treated of in the work are worthy of serious consideration, for, although individually, they may be of a trifling amount, yet "in the course of a year, and over the extent of a whole country," they cause the loss "of sums of national importance."

A Highly-favored Journal.

The *Country Gentleman* in its closing number for the year, calls attention to the index, and states that "it will be found to include over eight hundred different writers; and this, we should add, is to the exclusion of the signatures of a great mass of minor correspondence, such as brief enquiries, weather notes, &c., so that if made absolutely complete in these respects, it might have been swollen to nearly double its present dimensions."

This is a happy state of things, and we congratulate both editors and readers in view of it; the editors, because it is evident that they have a most intelligent constituency, and the readers because of the interest and instruction they must derive from so varied a communication of actual experience relative to farm-work. Putting correspondence into proper shape for the printer, is no small editorial task, but it is a labor of love which no conductor of an agricultural journal will grudge, and we can only say, we sincerely wish we had more of it. Many who have excellent, common-sense ideas, hesitate to commit them to writing, because they are conscious of deficiencies in the composition, but editors are only too glad to supply these, for the sake of having a good miscellany of original contributions.