

qualities, and the refuse of glue manufactories, though very much inferior to glue itself, may, by judicious management, be made profitable for this purpose. The following analysis of *glue-refuse* will afford a practical illustration:

Water	53.7 per cent.
Combustible and volatile matters, containing 1.75 of nitrogen.	21.2
Calcium compounds, silica, &c.	25.1
containing 1/2 of bone earth.	100.0

The skin and hair from tanneries, known as *trotter scatch*, though variable in composition, contains considerable manurial richness; and the offensive smell which it yields may be neutralized by sprinkling spent animal charcoal from sugar refineries, or of dry peat earth. A somewhat inferior sample gave the following results:

Water	29.0
Combustible and Volatile matters.	35.5
Ash	34.5
	100.0

{ Containing 2.95 of Nitrogen, corresponding to 3.58 of Ammonia.  
{ Containing 4 Phosphorus pentoxide, 87 of bone earth.

*Fish Refuse.*—Fish have long been used as manure; and there is indeed a peculiar appropriateness in returning to the land every kind of valuable matter which can be recovered from the sea. For the sea holds the soluble waste of the world, and is continually receiving vast accessions of valuable substances carried down by rain and rivers through the action of natural forces, or by the carelessness of man. Loss of soluble matter is in great measure inevitable, but we need not increase it by neglecting to utilize the sewage of towns for the enrichment of the soil, and to retain those manurial matters which can be thus absorbed. Whatever we get back again from the sea, is an almost unexpected gain; and this restoration of the elements of fertility, through the agency of sea-weed, of potassium compounds derived from sea-water, of guano, and of sea-fish, and their debris is a most important link in the circulation of matter."

A serious loss of manurial wastes occurs on the fishing coasts of most countries; a subject that has received increased attention of late years in Europe. All surplus takes of fish, all stale fish and the refuse of the curing stations should be carefully preserved and utilized. There is a sort of artificial fish-guano, of great concentration, that of late years has been successfully manufactured in Europe, and chiefly prepared from the liver, heads, and refuse matters of the Newfoundland and Norwegian cod-fisheries; a portion, however is manufactured from the waste of herrings and sardines. The following analysis will give a general idea of the value of the *Norwegian cod-guano*.

Potential Ammonia	9.4 per cent
Phosphorus pentoxide	17.1
Potash	4.7

The extent of the fisheries of the St. Lawrence and other parts of our Canadian Dominion, with the rapid extension of our agriculture, and the consequent increasing necessity for extra manures, should awaken the earnest attention of scientific and practical men to the discovery and application of means for utilizing in the most economical and effective manner these almost exhaustless materials, which are at present, in too many instances, allowed to run entirely to waste.—The consideration of the waste products of vegetable origin, forming the grand part of the essay, must be left to a future paper.

MARL.—R. McD writes us: "Would you please examine the enclosed sample of marl, and inform me as to its value and uses." REPLY.—The sample before us is rich in carbonate of lime, with traces of phosphate and approximates, both in quality and appearance to specimens of the same substance we have often seen in this country and various parts of Britain. Though much inferior to lime as a fertilizer, it is, nevertheless, admirably adapted to stiff clayey soils,

rendering them open and friable to an extent difficult to accomplish by most other means. In combination with swamp muck and barn-yard manure, it forms a quality of compost that tells powerfully on almost every kind of soil.

### Plagiarism.

Our attention has been drawn to a charge of plagiarism made by the *Albany Country Gentleman* against the Editor of our Poultry Department, for having adopted, in an article on Pigeons, the thought and expression used by our Albany cotemporary in a similar article last year. We think our cotemporary carries his ideas on this subject too far. When an article is copied by one journal from another, or when considerable extracts are made, credit should of course be fully and frankly given—and the writers in THE CANADA FARMER are most scrupulous in this respect. But when an exhaustive article on any topic is being prepared, and the writer reads up his subject and consults various authorities, it would be absurd to insist that every thought or expression, however trifling the point in it, should be duly noted as the emanation of a particular person's brain. We always recognize the ability and sound practical sense of our Albany cotemporary, and would never think of charging him with plagiarism because for convenience or otherwise he adopted in any article the words of others. But to show the unreasonableness of his complaint against us in this matter, we call our cotemporary's attention to the fact that he himself, in the very article from which he says our *collaborator* copied and in the next succeeding paragraph to it but one—did precisely what he charges us with having done. Here is a sample, and the whole series of articles on pigeons, published in the *Country Gentleman* in 1872, is full of such curious similarities of thought and expression.

(From *Country Gentleman*, January 11th, 1872.) (From *Tenacious's Pigeon Book*, p. 24, pub. 1868.)

"Pigeons are a very thirsty bird, and must be supplied with an abundance of fresh water." This is especially the case when young birds are being fed, as the parent's crop cannot be disgorged into the throat of their young without taking a copious draught of water before it can be disgorged into the throat of the young."

"Pigeons are very thirsty birds, and must be supplied with a much greater quantity of water than most other birds." This is especially the case when the young are being fed, as the parent's crop cannot be disgorged into the throat of their young without taking a copious draught of water before it can be disgorged into the throat of the young."

### Saving Rain-Water for Stock.

Dry weather is already upon us and a consequent deficiency of water for stock. To meet this difficulty in many places the only resort is to wells, or the collection of rain-water in properly constructed cisterns. The quantity of water that can be obtained from the rain that falls on a barn 70x40 feet, is very great. We may safely calculate that during the months of July and August and part of September, there will be an average fall of rain of three inches in depth. From observatory records we find this is the minimum quantity and often it is far more.

During the months in which water for stock is generally scarce, the rain that falls on one barn roof of the size we have previously named (70x40), would furnish five gallons a day each for twenty head of stock, for a period varying from seven to ten weeks, according as heavy thunder showers prevail or not. If a very heavy thunder storm accompanied with much rain occurs, the quantity obtained would be much increased. These heavy rains, however, do not greatly assist a permanent supply of water for stock as it is ordinarily caught and collected; ponds and drains are filled for a few hours only, the moment the rain touches the thirsty earth it is all absorbed and goes to nourish vegetation and partially assists springs, but the great mass is lost so far as furnishing an immediate supply for stock is concerned. The benefit derived from saving this supply by means of cisterns and cave troughs, cannot be too highly

estimated, and those who have seen the cattle parched with thirst, without the power of remedying the evil, can alone appreciate it. Depending, however, somewhat on the price of lumber and the carpenter's wages.

In appreciating the advantages to be derived from such an expenditure, we must not lose sight of the facts, that water is often as scarce in winter as in summer, and the labor of driving stock some distance once a day is great, and some mischief, more or less, is sure to arise amongst a herd, from having to do so, and the cost of building such a cistern would probably be repaid the first year from this cause alone ceasing to produce accidents. Two such cisterns would furnish a supply for twenty head of stock for upwards of four months, even supposing that little rain fell during that period, and often we get one or two very heavy rains about January in every year. Placing the advantages, therefore, against the cost, it is doubtful if any money could be more profitably expended on the farm, than providing cisterns to catch the rain that falls on our barns and sheds.

### Ravages of the Turnip Fly.

It is stated that spirits of turpentine, if applied to the turnip seed, a few hours before sowing, will effectually prevent the destruction of the young seedlings by the fly.

The best way to use it is to wet the seed with turpentine and allow it to remain wet about half an hour, then dry it with plaster or ashes, and sow as usual. We are assured by parties who have tried it that this is an excellent preservative. The cost is nothing, and we believe no evil can result. In some cases the seed has remained wet with turpentine several days before being sown, and no perceptible evil arose from the delay. One gentleman assures us that he has used this application for ten years and has never lost any plants by the fly. On questioning him closely as to the *modus operandi* he states, his belief is that the turpentine passes into circulation with the sap of the plant, as it can be distinctly detected by the peculiar taste it possesses when testing its presence by choosing some of the young plants.

### Fertilizers for Strawberries.

MR. EDITOR. I have used a mixture composed one-third of plaster (gypsum), one-sixth fine ground bones, one-sixth marl, one-sixth salt, added to one-sixth of hot lime, and when the lime is well slaked, thoroughly mixed together and daily turned for five or six days. I have applied this as a top dressing over my strawberry beds with most wonderful results.

THOS. H. GRAYDON.

St. Catharines, May, 1873.

### Grape Vines Winter-Killed.

MR. EDITOR. The past winter has been very severe on some of my grape vines. Iona, Adirondac and Salem are badly winter-killed. The top branches of some of my peach trees are showing a good amount of bloom, while the lower and middle branches of the same trees are dead!! What say you to that?

T. H. GRAYDON.

St. Catharines, May, 1873.

CONSTANT READER, YORK.—The title of the book is: "The Manufacture of Beet-root Sugar in England and Ireland, by Wm. Crooks, F. R. S., Editor of the *Chemical News*. Published by Longman, Green & Co., London." Any bookseller will get it for you.

SKUNKS. "C. G." says "this locality is at present infested with skunks. Would you kindly suggest a means of destroying them." ANSWER.—The discovery of one of these animals upon the premises usually furnishes occasion for the display of a vast deal of noise and excitement. But it is far better to take the affair quietly. Call off and chain up all the dogs, and remove every obstacle to the free egress of the animal from the premises. Station one or two good marksmen armed with rifles in a position to cover the retreat, and let them blaze away when the enemy is at proper distance—which means the farther the better—from the premises.