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Agricultural Journal.

From the Albany Cultivator.

STEEPING SEEDS.

For the purpose of stimulating the growth of plants, various solutions have been employed for steeping the seeds. The substances thus employed have been nitrate of soda, nitrate of potash, or salt-petre, muriate of ammonia, sulphate of ammonia, &c., &c. Salt-petre has long been used, in some form, as a fertilizer, and nitrate of soda has within a few years been recommended as a substitute, in some respects preferable. So far as we have learned, however, the effect of nitrate of soda appears to be rather to produce *vegetable fibre* or straw, than grain or seed; and hence it has latterly given place to muriate of ammonia in the preparation of solutions. Many experiments which have been made in Europe, show that wheat, barley, oats, peas, and beans, have been considerably increased in yield by the seed having been soaked in solutions of the last named substance. The trials which have been made in this country, have as yet been comparatively few, though some results which were made known by experiments last year, have indicated an important benefit from the application of the article to Indian corn.

One of the best examples which occurs to us of the benefits derived from the muriate of ammonia, is furnished by the experiments of Dr. S. Webber, of Charleston, N. H., reported in the N. E. Farmer. Dr. W. used a solution for soaking corn as follows: He dissolved a small piece of the muriate of ammonia, estimated at four or five grains, in about half a coffee cup of water, and threw into the solution a handful of corn, which, after having remained four or five hours, was planted. He planted this soaked corn in hills, side by side with that which was not soaked. In four different cases which are reported, the soaked seed produced much the largest yield—generally full one third more. The land was light and dry, and for several of the experiments, the poorest spots were purposely taken. The corn suffered from drouth, but in all cases that from the soaked seed manifested a decided superiority, and frequently attracted the attention of strangers who knew nothing of the cause.

Ammoniacal liquor, which is produced by the distillation of coal in the manufacture of gas, is thought to be a valuable manure. Mr Hannam, in his Essay on Waste Manures, describes this liquid as being "an impure solution of the carbonate of ammonia, and is the very gas which is evolved during the decomposition of animal substances, and which escapes from our manure-heaps during fermentation. It is, (he continues,) highly necessary to vegetation—the plant extracting the carbon of its structure from the carbonic acid, and its nitrogen from the ammonia of the carbonate of ammonia. The gas liquor holds in solution acetate, sulphate, or muriate, as well as carbonate of ammonia; in all of which states it is fitted to promote the growth of plants. The general average of its ammonia, in one or other of these forms of combination, according to Professor Johnston, is from twenty to forty pounds per one hundred gallons."

Judge Koon of this city made some trials with the ammoniacal liquid last season. He informs us that its effects were in all cases highly beneficial. Corn and oats soaked in the liquid for thirty hours before planting showed a broader and greener leaf, produced larger heads and ears, and yielded, he thinks, at least twenty per cent more than that without the liquid—the treatment being in all other respects, similar.

Mr. Campbell, of Scotland, has become distinguished for the preparations of steeps for seed grain, which in some cases appear to produce remarkable effects. The salts used are sulphate, nitrate, and muriate of ammonia; nitrates of soda and potash, and combinations of these. Mr. Colman gives, in the second part of his European Agriculture, a letter from Mr. Campbell, in reference to the advantage of using these steeps. He mentions the following experiments in illustration of the comparative productiveness of prepared and unprepared seed. Some seed-wheat, soaked in nitrate of ammonia, was sown on the 5th of July, which, by the 10th of August, he says, presented the following results; "The prepared seeds had tillered into *nine*, *ten*, and *eleven* stems; the unprepared into only *two*, *three*, and *four*; and both were from the same sample of seed, and sown in the same soil, side by. The time of steeping varied from fifty to ninety-four hours, at a temperature of about 60 degrees Fahrenheit." The yield of *grain* from these plants, was not known at the time Mr. Colman sent the account for publication, but we may expect to hear further particulars hereafter.

A year ago, a pamphlet was published by a German chemist named Bickes, in which it was declared that seeds may be so treated as to render unnecessary any manuring of the soil in which they are to be sown, and that even from the most barren sands, luxuriant crops may be gathered. Indeed the wonderful virtue of this newly discovered process seemed hardly less, from the representations given, than were formerly attributed to the "philosopher's stone." It can, however, serve but little to occupy space, or spend time in reading the accounts of this supposed discovery, as the author only imparts a knowledge of its nature and constituents to such as *pay for it*. Professor Johnson, in a notice of the pamphlet of M. Bickes, in the Edinburgh Quarterly Journal of Agriculture, observes that—"He is one of that class of discoverers who wish to sell their secrets, and by magnifying their importance, hope to derive a larger profit by divulging them. With such men the true friends of agriculture can have no sympathy."

As a steep for Indian corn, we should prefer muriate of ammonia, which we would use in the following manner: An ounce of the article, (costing two cents,) is deemed sufficient for a quart of corn. It should be dissolved in a sufficient quantity of water to fairly cover the seed, which may remain in the solution twenty-four hours, in a temperature of sixty to seventy degrees. In order to demonstrate as clearly as possible the effects of the solution, the trial should be conducted with the strictest care and precision. We can think of no better mode than to plant alternately two rows with seed from from the solution, and the same number with seed without any preparation—extending the experiment to ten, twelve, or more rows of each—the soil and the management to be as nearly equal as possible over the whole. Let the product of the rows to which the solution was applied, as well as the other rows, be carefully weighed and compared, and the result will indicate the value of the solution to the crop.

Solutions, and the application of various substances to seeds, for the purpose of preventing the attacks of insects have been recommended and used. The success of most of the experiments of this kind, seems rather doubtful. So far as relates to insects which feed on the *blade* only, we have never witnessed the least effect from applications of any kind to the seed, though we have seen many substances used. The most formidable enemy to grain crops in the early stages of growth, is the wire-worm, (as species of *Elater*.) This worm bores into the seed, eats out its substance, and frequently destroys the plant eating off the radicle as soon as it protrudes from the kernel. The attempt has been made to apply some substance to the seed which would render it disagreeable to the worm. It has been soaked in solutions of sulphate of iron, (copperas,) &c., and coated with compositions of tar and arsenic. To us, it seems not unreasonable to suppose that these substances would tend to make the kernel unpalatable food for the worm, though it seems generally admitted that the tar is not favorable to the growth of the plant. The substances used to prevent the attack of worms, are likewise used to prevent the grain from being pulled up by birds and squrrels. Those who have tried them, state that after a few plants have been pulled up, the birds, finding the kernel in an unpalatable state abandon the attempt to find food in that way.

As regards the prevention of the wire-worm, however, other means have been recommended, which in some instances at least, seem to have had the desired effect. It has been noticed that the wire-worm will feed on pieces of corn-cobs, and this has led to the practice of dropping pieces of cobs with the corn. The worms burrow into the cobs instead of the corn. We have seen instances where this remedy succeeded to considerable extent, as was ascertained by digging up the pieces of cobs put in the corn-hill—the cobs being found, with the worms feeding on them. Pieces of potatoes have sometimes been used instead of cobs, and are said to answer quite as good a purpose.

The remedies above mentioned, are sometimes recommended as being also effectual against the ravages of the "white worm," or "white grub,"—*Melolontha vulgaris*. It may be proper to remark that the habits of this insect and its modes of feeding, are such that none of the means alluded to, would in the least obviate its attacks It does not eat the seed itself, but generally commences feeding on the roots at some distance from the seed or centre, and thus cuts off from the plant its supply of nourishment.

Farm Accounts.—We take the following from the excellent address of J. W. Proctor, Esq.—"In the agricultural, as in the trading community, property will not adhere that is not cemented by labor. The young man, therefore, who sets out to be a farmer, must look about him and see how farming can be supported, what kind of crops there are that will pay for themselves and yield something. He must so manage as to make both ends meet. I cannot too strongly urge upon him the necessity of keeping accurate minutes of what he does, and of making exact estimates of the result of his labors and experiments. Nothing is more detrimental to good husbandry than uncertain conjectures. Though the result of our operations may not correspond with wishes or expectations, we should not close our eyes upon the facts. Truth, exact truth, will ever support itself, and him who cherishes it."

Cure of Scours in Sheep.—Mr. N. B. Pinny, of Plymouth, Windsor Co. Vt., informs us that he and his neighbours have tested the efficacy of Mr. Jewett's modeof treating sheep for scours—(see another part of this number.) In connection with this, he relates an incident. Some years ago, his neighbor subscribed for the Cultivator, but took it only one year, thinking that as it was published "out of his own State," it could hardly contain a dollar's worth of information adapted to his wants. In the course of the past winter, his neighbor called one day to inquire for a remedy for the "scours," by which he had lost several sheep and was in a fair way to lose more. Mr. Pinny lent him a number of the Cultivator containing directions in the case. He pursued the course recommended, saved his sheep—became satisfied of his misjudged economy in not taking the Cultivator, and has accordingly again subscribed for it.

Shedding of Wool by Sheep.—Mr. E. B. Brown, of Mystic, Conn., informs us that his sheep were found, during the past winter, to shed their wool, which he attributed to their having eaten freely of some species of Juniper on which they had been allowed to browse. On keeping the sheep from the Juniper, the wool ceased to fall off.

Guano.—We make the following extract from a letter received from Edward Stabler, Esq. of Sandy Spring, Maryland:—"Why do none of your correspondents communicate on the subject of guano? I have used it to considerable extent on my wheat crop, sown last fall; the present appearance of the crop is most promising indeed. Mine was the Peruvian guano, Orpheus, cargo, imported into Baltimore by S. K. George, Esq. With two hundred pounds to the acre, side by side, 25 ox-cart loads, (about 30 bushels to the load,) of barn yard manure, there is a difference of 50 per cent in favor of the guanoed wheat. Nearly half of the field has 12 bushels of ground bones to the acre; but the difference in favour of the guano, is about the same as over the manure. If the guano only proves durable in its fertilizing effects, it is by far the cheapest and most valuable article I have used as a manure. I intend using about a ton on my corn crop this seasonn."

Saw-Dust—Swamp-Muck—old coal-pit bottoms—Leached ashes, &c.—J. A. B. (B. M. House, Md.)—Saw-dust is useful in breaking up the tenacity of clay soils. It may be spread and plowed in. When it has thoroughly decomposed, it appears to afford some food to plants. That made from hard wood, is thought best—though *oak* saw-dust sometimes contains considerable acid, and ashes, or lime, are recommended to be mixed with it on this account before it is used as manure. It makes good bedding for horses and cattle—absorbs the urine, and keeps the animals clean. *Swamp-muck* varies much in quality, but is generally more or less valuable for uplands. You had better try it. Put some on your wheat and rye lands next fall, and harrow in. Expose some of it to frosts next winter, and in spring put it on your corn land. Note the result in all cases—it may be its effects will be better the second year—it often is so. You may find out in this way, whether it is best for you to use it to any extent. The *bottoms of coal-pits* are useful to mix with stable manures, and to absorb urine—it prevents, to a considerable extent, the escape of ammonia, and it is a good top-dressing for moist grass lands. The effects of leached ashes, lime, plaster, and bones, on your soil, can best be determined by experiment. They may be tried on a small scale, so as not to run much risk, but with such care that the result may be taken as a guide.

White-Washing.—This is the season of the year for white-washing. There is no doubt that a coating of lime-wash, or some other application, tends greatly to preserve buildings, fences, &c., that are exposed to the weather. The inside of our dwellings, also, is greatly improved in appearance, as well as rendered more conducive to health, by washes of lime. We have in former volumes given various receipts for making white-wash; and would refer our readers to the vol. for 1843, p. 88.

In the Report of the Commissioner of Patents for 1844, we find the following directions for making washes, and which are there recommended with much confidence. The superiority of this wash said to depend upon white vitriol, sometimes called sulphate of zinc, which is represented as a powerful mordant to harden and fix the paint.

For brick or stone.—One barrel of stone lime, (fresh burnt is best,) slake it, and then add two barrels of hydraulic cement or water-lime, stir them together until about the thickness of paint suitable to be laid with a brush; then add twelve pounds of white vitriol, (sulphate of zinc,) stir same for an hour, or till thoroughly mixed; let it remain twenty-four or thirty hours, and it is fit for use. When you commence using it, take for every four gallons, one quart of fine dry sand, and stir them together; put it on the wall with a large paintbrush; if too thick add a little water. This mixture produces a pale yellow; after which, (when dry,) to produce a pure white, go over the same with white-wash, as follows: one bushel of lime with one pound of sulphate zinc.

For wood-work.—One bushel lime; one pound white vitriol, (sulphate of zinc;) one quart of salt; one peck of white sand.

Sulphate of zinc can be formed by taking one part sulphuric acid, four parts water, and adding as as much zinc as it will take up.