Correspondence

Another Answer to "Questions for Millers."

MESSRS. EDITORS :—Having been a practical miller for twenty years, I noticed with curiosity the queries of "A Young Miller" on page 179 of the current volume of your valuable journal, and have looked with considerable anxiety for the answers. None appearing, I am induced to set forth my own opinions in the premises. The amount of draft necessary in the furrows of millstones is varied by the quality of stone, velocity of the same, amount of work to be done by said stone and the depth and width of the furrow. Generally, the draft should be about one inch to the foot—that is, for each foot in diameter of the stone, the end of the furrow nearest the eye of the stone should be one inch from the center of the stone. Having the furrows laid at this angle the draft will be increased by widening and deepening the furrows, and diminished by contracting their dimensions. For the particular stone of which "A Young Miller" speaks, I would prefer four inches draft, forty furrows, twenty long or leading furrows, and an equal number of short ones; shape of the furrows, straight, one and a half inches wide at the skirt of the stone, and one and one-eighth inches at the eye. The short furrows should enter the long ones at the center of the latter. The land or space between the the furrows should taper the same as the furrows—widest at the skirt. The bolt should clean six bushels per hour, if properly ground; two feet of coarse cloth would be useful to separate the shorts from the bran. Having had no experience with circular dress, I cannot decide whether it is better than straight; I think not. For information on this subject consult the "Miller and Millwright's Guide," edited by William C. Hughes, and published by H. C. Baird, Philadelphia. Said stone should be a trifle lower about the eye than at the skirt, just so that the staff will not touch it until within eight inches of skirt. Come, brother millers, let us hear from you.

N. SHOEMAKER.

[Our correspondent will observe that several answers have already appeared in these columns in reply to the queries of "A Young Miller;" but we shall be happy to make room for any additional letters throwing light on the subject.—EDS.

Gypsum and Salt in Pennsylvania.

MESSRS. EDITORS :—I notice an article in the SCIENTIFIC AMERICAN of April 5th, signed by "F," of Cincinnati, in which he corrects a statement made in your paper, where you asserted that Michigan is the only state in the Union that furnishes or contains coal, salt and gypsum. "F" says that Ohio also furnishes these articles in great abundance. Were you aware that in this county of Susquehanna gypsum has been found, and that too of a very good quality? If not, I would inform you that gypsum has been, and is, found at Great Bend, only eight miles from this place. The Indians also made salt from springs within a few miles of us; a fact that can be testified to by many living witnesses; and yet no one has had the perseverance or intelligence, thus far, to follow up the inquiry as to the places where the wells or springs are from which the Indians procured the water. We have also in our immediate vicinity other minerals, surface indications and specimens of which have been found in abundance, and I am getting together a collection of specimens of iron and other ores, quartz rock, stratified rock, metamorphic rock, &c., which are even now in sufficient quantities to convince the most incredulous of the existence of valuable minerals in this place.

P. W. RAFTER.

Susquehanna Depot, Pa., April 2, 1862.

Anchor Ice Again.

MESSRS EDITORS :—Allow me to say a word about anchor ice in answer to your correspondent's request. I can speak only from observation. We have plenty of it here. The water runs over a rough rocky bed about ¾ of a mile on a descent of about 12 feet to our mills at the top of the Falls. (The whole hight of the Fall is sixty-five feet). In this shallow bubbling course the anchor ice is formed by contact with the air. Its temperature is brought down below the freezing point, the spray and little jets, as they are thrown into the air, are literally frozen, when falling back into the water, which is too cold to melt them. they become a moving mass of curdled water, or, like snow and water, sticking to anything with which they come in contact. This is the view which I hold of its formation instead of its generating on the bottom as many claim. It often gathers upon the rock under a foot or more depth of water running at a very great velocity. It generally forms in the night, but is often seen on cloudy days when the thermometer is at about 10° to 12°, but like the dew it vanishes in a bright sunlight. P. H. WAIT.

Sandy Hill, N. Y., April 7, 1862.

Flax Culture and Machinery.

MESSRS. EDITORS :—It has become an important question for our country, whether flax culture in the Northern and, more particularly, the Western States, could not be brought to rival the cotton culture of the South if machinery were invented for cleansing the fiber and spinning and weaving it, equal to the machinery used for cotton.

According to the history of cotton growing in the South it appears that the invention of Whitney's cotton gin and the natural adaptation of the soil were the two great causes which led to the present very extensive cultivation of cotton. This was about the beginning of the present century, when flax was considered a very indispensable crop among our farmers, but its linty product has since been superseded by the cotton of the South perhaps only through the invention of the cotton gin. We certainly have a soil in the West which will produce of clean flax 100 lbs per acre more than the best cotton lands of the South can of cotton, and with much less labor, if we except the breaking, scutching and hackling, which should be performed with machinery. In England, the spinning and weaving of flax is now accomplished by machinery with a rapidity little short of the spinning and weaving of cotton, so that there would at once be a foreign market if the raw material were raised by the farmers of the great West. A machine that would perform for the flax grower of the West what the cotton gin of the South does for the cotton grower would be a great desideratum. E. L. WALKER.

Somerset, Pa., April, 1862.

Canal-Dredging Machines Wanted.

MESSRS. EDITORS :—I wish to otain a steam-dredging machine to be used on the Wabash & Erie Canal in Indiana, for the purpose of taking out sand bars, deepening and cleaning out generally, without drawing off the water. The canal is about forty feet wide on top, and three and a half to four feet deep. The machine to be so constructed that they can be used in shallow water, and so that the earth can be deposited by the machine upon either bank of the canal, or in scows, as may be necessary. I will contract for four or five such machines, complete and ready for immediate use.

Please put me in communication with some inventor or manufacturer of such machines. There is no difficulty in getting large machines, but my inquiries thus far have not led me to the kind I requirefor narrow canal and shallow water.

A. P. EDGERTON,
President Wabash & Erie Canal Co.

Fort Wayne, Ind., April 10, 1862.

Two "Suggestions to Inventors" Answered.

MESSRS. EDITORS :—A bird cage may be made with two bottoms, and slide one outas you push the other in.

Cannot a cask of sheet iron of small dimensions, 25 or 30 gallons, be made to hold petroleum by brazing the seam and brazing in the heads and corrugating the metal if necessary?

JOHN E. ATWOOD.

Mansfield Centre, Conn., March 25, 1862.

[Such iron casks are now used in England to export caustic alkali to the United States and other places.—EDS.

THE Chinese sent 82,000 ounces of gold from Australia in 1860, and 54,000 ounces in 1861. In the latter year 2,000,000 ounces were sent from Victoria to England.

Water from the Atmosphere.

A correspondent wishes to add to our list of suggestions to inventors, a hint to chemists to devise some mode of extracting water from the atmosphere for the use of our soldiers. There is an enormous quantity of water in the atmosphere, and it is being constantly taken out by natural agencies; all of our rivers being formed and fed from this source, but it is not probable that any considerable quantity will ever be obtained from the air by artificial means. The mode which most readily suggests itself is that employed by nature, and which consists in varying the temperature. A cubic foot of air at the temperature of 100° Fah. will hold 25½ grains of water in the form of vapor, but at zero it requires only ½ a grain to saturate the same volume of air. Consequently, if air at 100° is allowed to come in contact with water, each cubic foot will take up 25½ grains of water, and if the air is then cooled by being carried to the top of a mountain, 25 grains of the water will be deposited in the form of snow. The cheapest and easiest way to cool the air in Virginia or Tennessee would be by means of ice; but if the soldiers had ice enough for this purpose they would very quickly have an ample supply of water from the melting of the ice.

Water may also be collected from the air by means of substances for which it has a strong affinity, such as caustic lime, potash, salt, &c.; but it is more difficult to extract the water from these substances than it is to get it directly from the air. We, therefore, do not think the field a very inviting one, still it is not wise at this day to say that anything cannot be done.

Advantages of Early Vaccination.

The annual report of theVaccine Committee was read at a recent meeting of the French Academy, in which the question of early vaccination was fully discussed. M. Depaul, the reporter, states that in spite of the opposition raised to the vaccination of new-born children, the researches of the committee tend to show that this operation is not more dangerous in very early life than at the second or third month. In private practice, where the chances of variolous infection are much less than in the wards of an hospital, vaccination may, as a general rule, be delayed; but in the latter case such delays are dangerous, for, from one hour to another, cases of small-pox may be admitted. "If all children," continues M. Depaul, "were vaccinated within the first two or three days after birth, small-pox, already rare now in comparison with what it was formerly, would, we are convinced, completely disappear." This is an important subject for investigation by American physicians.

Complaints in Regard to the Overland Mail.

We make the following extract from a business letter just received from a California correspondent :—

"Ourmail overland is very irregular. It is reported that the mails cannotcarry all the newspapers, and that they are scattered all along the route, and very often made use of for the purpose of kindling the fire on a wet or stormy day. We Californians are heartily sick of the overland mail proceedings. I presume as much so as my North Carolina friends are of the rebellion. I wish, from the bottom of my soul, that the mail could again be carried by way of the Isthmus. I am fully satisfied that this would be a great improvement over the present state of the mail. Can not you push it through at Washington?"

We earnestly call the attention of Postmaster Blair to this subject. The mails to California are of the very highest importance, and should be managed with the greatest efficiency and fidelity.

THE COTTON MANUFACTURE IN ENGLAND.—The Manchester *Trade Report* of the 21st March says there is no revival in the demand for goods or yarns, and notwithstanding the reduced production and small stocks, the market is dull and inactive. The distress among those out of work is showing itself, however, more decidedly in an increased demand upon the poor rates, and the number of non-settled poor reported as having received relief this week is given at 9,200 persons, the largest number reported in any return that has yet been issued. In this respect Manchester may be taken as an indication of the state of the cotton district generally.