

From the United States.

[BY OUR OWN CORRESPONDENT.]

Washington, D. C., June 18, 1880.

Recent reports to the Agricultural Department from various sections of the United States give most flattering promise of good crops and abundant harvests. The only exceptions are in the extreme Northwest, from floods and heavy rains, and in a portion of the east, from the ravages of the Army Worm. Prof. J. H. Comstock, the entomologist of the Agricultural Department, has just returned from a tour of scientific observation and investigation in Delaware and Long Island, where he went to ascertain the causes which led to the appearance this season of such vast numbers of the Army and Cotton Worms. The investigation and study of the question, when completed, will be given to the public, the probable cause of their vast increase at the season stated, and a remedy suggested. As these ravagers of our crops are at each successive raid appearing further northward, it will soon be time for our agricultural brethren of Canada to give the subject some study and observation.

General Le Duc, Commissioner of Agriculture, will start for South Carolina in a day or two for the purpose of establishing a tea-plantation in that State, Congress having appropriated the meagre sum of \$5,000 for the purpose. The establishment of the National Tea Plantation and its cultivation will be under the immediate supervision of a Scotchman, who was for 18 years in charge of a large tea plantation belonging to an English Company in the Province of Assam, India. For several years he has been engaged in the cultivation of the Assam tea in Georgia, an adjoining State to South Carolina, and the specimens of his tea now here on exhibition, when submitted to the inspection of New York tea brokers and importers, without its history, was pronounced a superior sample of best Assam tea. The amount expended each year for imported tea is about \$20,000,000. Its successful growth and preparation will prove a vast revenue to this country and afford cheap tea to Canada.

The Chinese method of preserving grapes so as to have them fresh or from the vine the entire year, consists in cutting a circular piece out of a ripe pumpkin or gourd, making an aperture large enough to admit the hand, the interior in them completely cleared out, the clusters of ripe grapes placed inside, the cover replaced firmly, and the pumpkin kept in a cool, dry place. It is said in China the gourd is used, but the experiment was made with a common field pumpkin. A German horticulturist informs me that he has tried an experiment, which he saw successfully carried out in Stuttgart, Germany, and that it gave him fine grapes entirely out of season in this cold climate, and which he says rivals the Chinese preservation. He rears the grape-vines in pots in a room or other sheltered place, and obtains fine clusters of grapes with very little trouble. His method is ingenious. A vigorous, healthy cutting of the late growth of the vine is taken, from three to four feet in length, leaving at the upper end two fruit buds. The cutting is to be entirely enveloped with moss and bound with bast, except the buds. The cutting is then inserted spirally into a large flower pot, leaving the buds projecting above. This is then filled with rich hot-bed earth, well moistened and set in the sun behind a window, and kept uniformly moist. When the two first buds produce branches, having bunches of grapes on them, the shoots are to be trimmed so that two sound leaves remain over each grape shoot in order to keep up the circulation of the sap. He alleges that he has, from grape shoots treated in this manner, had as high as six clusters to each shoot in the month of March.

LOTUS.

Rust in Wheat.

We know from scientific authority that 95 to 98 per cent. of all that goes to make up the entire mature wheat plant is derived from the atmosphere, and that those portions of the plant are organic or capable of being burned and evaporated into invisible grass. We know also from the same authority that the 2 or 5 per cent. remaining is derived from the earth, that it is inorganic, or incapable of being destroyed, for when the plants are burned there remain indestructible ashes. But scientific authority goes further, and shows us that without the presence of those inorganic substances in the soil which the wheat and other plants feed upon, the organic substances which the plants derive from the atmosphere cannot be taken up, digested, so to speak, and assimilated in a form to make a strong and healthy plant. Where both organic or inorganic matter are wanting there is barrenness; where both are present in suitable proportions for the growth of the plant, there is fruitfulness, and finally, where there is too much of one and too little of the other, there is one-sided development, and especially in the case of too much nitrogen, there is over-growth and a tendency to disease and decay. When we use much green manure on our wheat fields, the plants make a great growth of blades and straw at the expense of the grain, and the crop under unfavorable weather is pretty sure to blight, mildew or rust, and fall down. And the same results follow if we use an overdose of nitrate of soda or any other plant food of a similar nature. So, also, in hot and wet seasons, if near or at the time of harvest there is much thunder and lightning, the phenomena produce nitrogen in excess of the wants of the plant, and the same thing follows as where too much green manure or nitrate of soda is employed. There being in such cases a want of equilibrium between the quantity of organic matter furnished from the atmosphere and the inorganic derived from the earth, under the stimulus of heat and humidity, the cell matters of the plant are produced faster than it can be digested and assimilated, and hence they burst their bounds, whether of the leaf or stalk, and are instantly seized upon by the blight, mildew and rust fungus germs, always floating in the air at such seasons and temperatures. This brief and necessarily imperfect statement of the cause of the fungus diseases of the wheat plant covers the whole ground, and shows why it is that the phosphates which supply so large a portion of the ash of many of the cereals, is the best if not the only known preventive of rust, mildew and blight.—[Ex.]

Live Stock—Its Relation to Wheat Growing.

Prof. Manly Miles, of the Michigan Agricultural College, has, as we notice by the Farmer, made some suggestive comparisons in which the relations of the yield of wheat per acre to the number of cattle and sheep to each 100 acres of improved land is shown in the most striking manner.

The countries that have an average number, or more, of cattle and sheep—with two exceptions that may be readily explained by local causes—have more than an average yield of wheat per acre, while those that have considerably less than the average number of cattle and sheep have less than the average yield of wheat; and in the latter class of cases an increased acreage of wheat has the effect of diminishing the yield of wheat below what might be expected from the small numbers of live stock.

These results, although surprising from their uniformity, were not unexpected, as they are in accordance with principles of farm economy that are recognized by all intelligent farmers.

In the country where commercial fertilizers are not in general use, the supply of barnyard manure must furnish a fair index of the fertility of farms that are nearly equal in natural productiveness, and the proportionate number of cattle and sheep kept on the farm will best indicate approximately the quantity of manure at command.

The acreage of grain must also have an influence on the results. An excess of grain without a corresponding supply of manure and high tillage must tend to produce a diminished yield per acre, while with a liberal manure supply, the yield of grain may be retained at a high average, even with an increased acreage.

Success in wheat growing seems, therefore, to depend largely upon the attention given to live stock, and the statistics under discussion agree fully with the old time saying: "The more cattle the more manure—the more manure the better crops."

Advice to Farmers.

Mr. Richard Gibson, of Ilderton, Ont., has just returned from a trip to the old country, and has been pleased to give our readers a most useful and interesting account of matters which should be known and carefully studied by our farmers, dairy-men and stockmen.

Mr. Richard Gibson having been only a month in England, and his own business requiring most of his time, he was unable to make exhaustive enquiries on behalf of the commission. The wheat in England was looking well, but was very backward. The crops generally were not sufficiently advanced to hazard a conjecture as to what they would yield. A full crop of roots might be expected, as owing to the dryness of the spring the soil was put in thorough preparation before sowing. Grass fed beef would be late owing to the backwardness of the pastures. The report continued as follows:—

I had a conversation with several butchers and dealers and they all took the same view of the Canadian cattle trade, viz., that the best time to ship is from February to August; that the grass fed stock should, for a few weeks previous to shipping, be fed some grain and so gradually prepared for the change to the dry food used on the voyage. That the stall fed cattle arrive in good condition without loss of flesh, but that the grass fed lose considerably. Unanimously they all speak out loud, "Why don't your people use better bulls? We know that you can grow as good cattle as can be found anywhere, for we have seen some sell in public this spring for £45 each; but not one in ten of the ordinary stock you send has paid for his keep. Send them good quality and breeding, and then if any accident happens so that they are bruised too badly to slaughter for market, they will sell for all that they are worth, to be grazed a few weeks; but no English grazer would ever think of buying such rough, coarse specimens as are most that you send, and if your farmers had to pay rent for, instead of owning their farms, they would soon be compelled to breed better stock. Again, a good trade could be done in steers, if we could get them of right quality. Two-year-old steers, such as we describe, would be worth more in public market than the rough old cows and steers you have sent." I made some enquiries as to the benefit Canada derives from the live stock trade, and the general opinion was that it was worth fully one cent per pound over the American cattle, but that owing to the large competition for space, and the limited shipping accommodation from Montreal, or rather the monopoly of the carrying trade by one or two wealthy companies, our farmers lose that benefit, as the shipper has to pay about that amount extra per head over what the American shippers were paying from New York. Sheep, the same complaint as to quality. "Why do your farmers send us nothing but rams and ewes? Wethers are worth from five to eight cents more per pound. Why?" "Because they contain so much more flesh that is lean meat of a much superior quality. To obtain the highest price, your sheep-breeders should use a Down cross on your common stock, and save your ram lambs for wethers." Which variety of the Downs would you recommend? Southdowns or Hampshires, because they contain the most flesh. Your sheep have large enough frame, but carry too much useless fat or tallow. The larger Downs, such as Oxfords or Shropshires, would not give you the lean meat as readily or satisfactorily as the smaller and purer varieties of Downs."

Along with Mr. Dyke, the Dominion agent, Liverpool, Eng., I called upon some of the largest American produce importers. We were kindly received, and every opportunity afforded us of examining and testing the different brands of cheese and butter.

The best makes of butter are from the Western States. A splendid consignment had just arrived from Illinois. We examined several kegs and found them uniform in quality, taste and color, in fact as the merchant observed:—"One is a sample of the lot; I can send the whole of that consignment out to my customers with perfect confidence, without opening a keg; they are always alike." Upon asking to see some Canadian, several kegs were opened, but not one was uniform, except, I am sorry to say, uniformly bad; soft, bad flavored and of different colors. Upon asking the question, "What is our remedy?" the reply was, "The only remedy is to establish creameries; formerly butter from this very district," pointing to the lot from Illinois, "was no better