

THE U. S. WHEAT CROP.

Report of the Agricultural Department upon Winter Wheat:—

The following is a summary of the condition of winter wheat, just issued from the Agricultural Department, on the first week of April:—

A considerable portion of the northern belt of the winter wheat area was covered with snow; the condition of that which was visible gave promise of general exemption from winter injury, leaving the crop subject to the meteorological vicissitudes of April.

In the Middle States great improvement upon the sowing of last spring is everywhere conceded, especially in New Jersey and Pennsylvania. The prospect in the States south of Maryland is less favorable than last year, and there were indications of a diminishing area of cotton States, although the acreage is not intended to be given in this Report.

Michigan, the only State of the northern border in which winter wheat is mainly grown, presents a green and vigorous growth wherever the snow has disappeared to reveal it, and Ohio makes far more favorable returns than last year.

In Kentucky more checkered showing is made, giving the present appearance a decidedly unfavorable cast, with indications of future improvement as the weather becomes settled.

In Indiana and Illinois unfavorable returns outnumbered the rose-colored. The dry autumn retarded the seeding and germination, and left the plants too weak and shallow-rooted to endure well the effects of the winter changes of temperature. Similar causes affect the condition of the wheat in Missouri, but a great improvement over last year is reported, and a still more favorable condition exists in Kansas.

In Wisconsin, Minnesota, Iowa and Nebraska, as is known, very little winter wheat is produced, but full reports are given of such experiments.

The indications from California all point to another year of great abundance, scarcely a county reporting unfavorably.

The condition, as a whole, of the wheat prospect at the close of the winter is more favorable than at the same date in 1872.

CHEMISTRY.

The following article, from the *Journal of Chemistry*, contains information which every farmer should possess:

The soil is that upon which the farmer spends his labor. The atmosphere and the weather he cannot control, although, by close observation, he may forecast it.

No plant will flourish and mature unless its roots are situated in a soil containing all the mineral elements found in the ashes of the plant. The soil is the home of the plant—its birth place and station, where it runs through all the different stages of its development and whence it receives its nutriment.

The fertility of the soil depends upon its fineness of particles, since the food of a plant must enter it in a state of solution. That is, the mineral matters must be dissolved in water, and the rapidity of their solution is in direct proportion to the extent of their surface exposed. Hence, the finer the particles of earth, the more abundantly will the plant be supplied with the necessary elements.

The soil has the power of absorbing moisture from the atmosphere, and condensing the same in its pores, and the absorption of water vapors determines its capacity for absorbing other vapors and gases.

The part which capillarity of the soil plays is somewhat analogous to that of a lamp—the soil is the lamp and the wick, and the water is the oil.

By the action of the sun and the wind the surface is rendered dry by evaporation, and as fast as the particles of water escape in vapor, their places are supplied by capillarity from the stores of moisture below; the ascending water brings along with it the soluble mineral matter of the soil, and thus the roots of the plants are situated in a stream of their appropriate food, and those particles of material not taken up in the tissues of the plant are brought to the surface to be washed down by succeeding rains. With a deep subsoil and good drainage capillarity aids gravitation, and the minerals brought to the surface then have a downward distribution.

It is easy to see, in a good soil well tilled, how capillarity thus acts, keeping the roots of the plants constantly immersed in a stream of mineral solution that is now ascending,

now descending, but never at rest, and how the food of the plant is thus made to circulate around the organs fitted for absorbing it.

The same causes that maintain this perpetual supply of water to the plant are also efficacious in constantly preparing new supplies. The materials of the soil are constantly undergoing chemical changes whereby the silica, lime, phosphorus, potash, &c., become soluble in water and accessible to the plant.

Water charged with carbonic acid and the oxygen is the chief source in the chemical changes. The more extensive and rapid circulation of water in the soil, the more mineral matter will be rendered soluble in a given time, and other things being equal, the less will the soil be dependent on manures to keep up its fertility.

Return to the soil, in the shape of manures compensation for the precious minerals taken off with the soil. Plow deep, pulverize the soil well, and with thorough drainage you can depend on grains to sell; and your farms will improve in productiveness—bearing in mind that different crops draw differently upon the mineral resources, and that the rotation of crops has a tendency to fertilize the soil; for instance, clover with its long roots brings to the surface the rare minerals and matures a fine crop where wheat fails to produce, and in addition to that there will be a residue of minerals rendered available through the chemical action of the clover sufficient to maintain a good yield of wheat or corn.

THE ROSE POTATOES.

"The Early Rose" was the pioneer of this family. It was originated by Mr. A. Bresse, of Brandon, Vt., who sold his then stock to Mr. D. S. Heffron, of Utica, N. Y. Up to this time it was known as "Child seedling," and was exhibited under this name at several agricultural fairs in the fall of 1867. Shortly thereafter Mr. Heffron sold half his stock to Mr. Conover, of New Jersey, and the other half to Mr. B. K. Bliss, of New York, at the same time changing the name to "Early Rose." The great excitement which accompanied the introduction of this new potato is fresh in the memory of potato-growers. It soon became the leading early potato, and is yet not excelled by any newer kind.

"The Late Rose," also known as "Thornburn's Late Rose," was introduced in the spring of 1872. This differs from most other named sorts in not being a seedling or original variety, but a sport or sub-variety. It was discovered by Mr. Eoe, of Washington County, New York, who, observing that a few vines among his Early Rose remained fresh and green for several months longer than the others, caused these hills to be dug separately and planted in the following spring, when they retained the characteristics shown the previous year, and their offspring have continued to do so ever since. Samples of this potato were exhibited for the first time in 1871, at the New York State Fair in Albany, where they attracted a great deal of attention. The Late Rose differs from the Early Rose in ripening later, being more prolific, and keeping better; in quality and appearance they are nearly alike. Bliss's Late Rose is identical with this one.

"Campbell's Late Rose" is a seedling by Mr. George Campbell, of Ohio. This variety seems to vary more than others when grown in different soils and localities. With me, on a somewhat heavy clay soil, it proved exceedingly prolific, more so than any other variety in my experimental field, but in quality it fell much behind expectations. It is very late, the vines are of a vigorous straggling growth, remaining green until killed by the frost. Some of the tubers grew very large, a few over twelve inches long, but more than one-half the crop too small for market; the medium and large ones are irregular, knobby and scraggy, and mostly hollow in the centre. In some localities, however, it has given better satisfaction. The whole appearance of the plant and tubers reminds one of the old Merino potato.

"Young's White Rose," introduced by Mr. M. K. Young, of Wisconsin, is a large, white and heavy potato, resembling the Harrison so much that, during three years' trial, I could not discover any difference between the two.

"Wainwright's White Rose" is a seedling by Mr. George Wainwright, of Pennsylvania. In shape and size it is something like the Orono, but its skin is rougher and not as white as the latter. It rotted badly the past

season, and has not developed any desirable qualities.

"Queen of the Roses" was raised by Mr. William Minnich, of Pennsylvania, from a seedling of the Early Rose. It is of exceedingly fine appearance, and, on the grounds of the originator, very prolific, but needs more extensive trials to determine its value.

The "Whither Forest Rose" is a seedling or an old kind under a new name; I cannot tell, but it looks exactly like the Monitor.—The first samples came from Vermont.

"Foster's Late Rose" is a seedling by Mr. P. H. Foster, of Long Island, probably the first variety named "Late Rose." It was exhibited at the American Institute Fair in 1870, a year before any other Late Rose became known. The priority to the name would therefore belong to this variety, but as it was never disseminated to any extent, the late variation of the Early Rose has now the right conceded to the name "Late Rose."

There have, no doubt, many other seedlings been made namesakes of Roses, poetical and otherwise, but those enumerated above are the only ones that came to public notice.—*Michigan Farmer*.

RED CLOVER—SUBSOILING.

At the last meeting of the Warsaw, Ill., Horticultural Society, the subject of red clover was incidentally brought up and the following discussion ensued:

Mr. Bliss did not think clover was grown very extensively; that which was grown was mostly for pasture. He spoke of its excellent qualities and adaptation as pasturage for hogs, cattle, sheep and horses.

Mr. Grover corroborated Mr. Bliss' statements, and added that it is valuable hay where it is properly handled. He had cut successive crops two and three times a year off the same ground for five years.

Mr. Hathaway said clover should be more extensively grown as a fertilizer rather than for hay or pasture; he thought that there were but few fertilizers used in this section except barn-yard manure, and that was poorly utilized; that our soils are impoverished by long continued croppings without a return of any fertilizing manures; would suggest turning under clover as the most ready and cheapest mode of renovation for over cropped lands; he thought clover would run out in two years, if the ground were not re-seeded.

Mr. Grover thought his clover, the Mammoth variety, did not run out; it had stood five years or more yielding well.

President Hammond agreed with Mr. Hathaway that medium clover was a biennial plant; would run out if not re-seeded.

Mr. McCune esteemed clover for pasture; it was good hay; half timothy for horses was preferable. He spoke of clover running out under certain conditions.

It was conceded by all that clover was eminently adapted for pasture and hay, and unsurpassed as a fertilizer.

The Chair announced the question of subsoiling. Mr. Bliss said as far as his observations extended subsoiling was only partially practised.

The question was raised—What is subsoiling, or of what method of turning up the substratum of soil did it consist.

Dr. Hollowbush gave a definition of subsoiling. Some think deep plowing, others, one plow to follow another, and others, turning up the substratum or hard pan. All the above modes appear to be more or less in use as the means and occasion suggest to the operator.—*Western Rural*.

GYPSUM.

When plaster first began to be used in France, to settle the question of its utility the French government authorized a commission to examine the subject, and a series of questions were asked of practical men, and the answers published for the benefit of others. I will give in brief the substance of the questions and answers as applicable to us:

1. Does plaster act favorably on clover? Forty answered Yes, and but three No.
2. Does it act favorably on clover on wet land? Answers, unanimously No.
3. Will it supply the place of organic manure? i. e., will a barren soil be made a fertile one by the use of plaster? No, unanimously.
4. Does plaster sensibly increase the crops of the cereals, to wit: wheat, rye, oats or corn? Of 32 opinions given 30 were in the negative.—*Western Farmer*.

NOTES OF AGRICULTURE FROM SCOTLAND.

From the Report of the Northern Agricultural Society of its spring Exhibition, held at Aberdeen, we note the weight of some of the principal prize grain exhibited:—

White seed wheat, any variety, 1st, 63 lbs. 10 oz.; Red seed wheat, any variety, 1st, 61 lbs., 12 oz.; 2nd, 58 lbs., 10 oz.; Chevalier seed barley, 1st, 56 lbs., 6 oz.; 2nd, 52 lbs.; Seed barley, any other variety, 1st, 53 lbs., 2nd, 54 lbs., 12 oz.; potato seed oats, 1st, 54 lbs., 2 oz.; 2nd, 45 lbs., 4 oz.; 3rd, 45 lbs., 12 oz.; 4th, 44 lbs., 12 oz.; Sandwich seed oats, 1st, 45 lbs., 4 oz.; 2nd, 44 lbs., 4 oz.; Seed oats, any other variety, 45 lbs., 4 oz.

We see from this report how much the wheat, oats, and barley over-weighed the weight of our Canadian grain of each kind, and especially the oats. The comparative weight of the grain of other qualities being equal, determines the superior merits of the sample, but of course this is not the only, nor indeed the principal point of excellence to be attained. So we see the heaviest grain is not always entitled to the prize.

We note, in the exhibition of potatoes, some of the old varieties still maintain their place. The varieties of potatoes exhibited were Irish Cups, Long Blue, Long White, Webb's Imperial, Kidney, Prince Regent, Glenherve, Paterson's Victoria (round white), Bresse's Peerless obtained a second prize as a new variety.

HINTS ON HAYING.

The main points to be observed in making timothy or meadow hay, with little or no clover in it, are:—

1st. Cutting the grass when in flower and before any seeds are formed. If we cut too early we lose substance, if too late we lose quality. If the hay is for market or for horses we should let it stand longer than if it is to be fed out on the farm to milch-cows or sheep.

2nd. Cut it so that if it is necessarily exposed to dew the dew shall fall on while the grass is green, rather than after it is partially cured. This is one of the most important practical points in hay-making. Dew or rain will not hurt fresh, green grass, provided it is got rid of before the grass begins to wilt. In heavy grass, therefore, that cannot be cured in one day, we should start the mower late in the afternoon, say four o'clock, and cut as long as we could see. Rain or dew will not hurt it any more than if it was standing uncut. The next morning, the moment the dew is off, or a little earlier, start the tedding machine lively, and keep it going, changing horses if necessary. The more frequently the grass is stirred, the more rapidly it will cure. If kept well stirred, the hay will be ready to draw in immediately after dinner.

3rd. When grass is cut in the morning, if a light crop and somewhat over-ripe, it may not unfrequently be drawn into the barn the same day. But with heavy green grass this can rarely be done. Keep stirring the hay until about four o'clock in the afternoon.—Then rake into windrows, and put it into cocks for the night. If exposed to rain or dew while spread out on the land in this partially cured state, it will be very seriously damaged. The next morning turn over the cocks, or open them out if necessary, and draw in as soon as dry enough.

4th. When grass is cut, and rain sets in immediately, while the grass is spread out on the land as left by the machine, or in swaths, nothing can be done. It is better not to touch it until there is a prospect of getting it sufficiently dry to put in cock. As long as it is green it will not hurt.

5. When partially cured grass is wet with a sudden shower while spread out, it can not be turned or shaken out too quickly after the rain is over. Do not wait for the ground to dry. Better spread out lightly on the wet grass, so that the wind can get through it, than allow it to lie flat and sodden. It is necessary to be very careful to get such hay perfectly dry before drawing in. Spread two or three quarts of salt on each ton of this damaged hay when put in.

Clover hay requires more time in curing than timothy and meadow hay. But the principles involved are essentially the same, except that after the clover is partially dry care must be taken not to shake off the leaves and blossoms. If cut early the tedder may be used with great advantage. A good plan is to cut the clover late in the afternoon, and the next morning, as soon as the dew is off, shake it out with the tedder. Then, in an hour or two, rake it into small windrows five or six feet apart with a steel-toothed rake,—