

greater than an equal bulk of the best stable manure. It is quite true that the color and odor will be removed from manure-water or urine by filtering it through a few inches of soil, not, however, clear sand, as Professor Stewart says, though even to the clearest silicious sand some of the constituents of the liquid will adhere, and so far, for a little while, be removed. But this soon ceases, and even when good loamy soil is used as a filtering medium, it shortly becomes charged to its full capacity, and the most putrid liquids will come through such an earth filter but little changed. We are greatly astonished that a man of Professor Stewart's experience and reputation should have written an article so full of transparent errors as the one in question. We are expecting to see Mr. Bliss, whom he was criticising, overwhelm him with the numerous and most positive citations of proof which he is so well able to marshal effectively. If we did not know how capable Mr. Bliss is of doing such work, and how he would enjoy doing it, we should, of ourselves, have felt constrained to express, in the *Rural*, our strong dissent from the positions taken by the learned professor, whose article has so naturally attracted Mr. Barnard's attention and criticism.

Vermont Watchman.

The establishment of Experiment Stations in connection with, or under the direction of our agricultural colleges, is another work, important alike to every interest of both agriculture and horticulture, which the Government should not longer delay the commencement of. An excellent bill covering these wants was before Congress last year, which I think had the general endorsement of our agricultural colleges and societies. What can we do to help this measure along?

We need a more thorough research than has yet been possible into the conditions surrounding successful fruit culture in Russia, China and other inter-continental countries, whose severe climates correspond to our own interior climates, which, as we know, prove disastrous to nearly all varieties of fruit originating in countries under the influence of the sea. The fruits of Central Russia have endured the test of centuries of winters and summers, worse perhaps, than our country can parallel, and they are grown in great quantities in a latitude six hundred miles farther north than that of Quebec. And there almost under the Arctic Circle, has been building up through hundreds of bitter winters and arid summers a race of fruits, from which all weakness has been bred out, the fittest qualities only surviving. If these varieties are not all, or many of them, as good in quality as our modern tastes demand, they at least will furnish the foundation for new and harder races of fruits that will withstand the trying climatic vicissitudes covering half of this continent, under which our older varieties cannot be successfully grown. Is there any pomological question more important than this? We want to know more about Russian and Asiatic fruit culture. We want to know all about it that years of investigation, by a competent commission, can secure. This is certainly a work for the Government to undertake. The work has been nobly begun by the enterprise of two honored pomologists, whose labors can not be too highly commended; for Mr. Gibb and Prof. Budd have already given the country a service which entitles them to great honors. The Government should take up and complete their work.

But the most important subject to which we can call the attention of the Government is the work of forestry. This is the one grand question that overtops all other questions of public economy to-day. The rapid destruction of the vast forest areas of this continent has unbalanced the forces of nature. Our seasons have changed their temperate courses. Destructive floods are followed by consuming droughts. Our crops become more uncertain. Our climate becomes full of

extremes. The situation is one that challenges the attention of every thoughtful man, and that every year of timber waste makes worse. The forests of Europe, so far as saved at all, have been largely preserved and built up by the strong arm of the Government. And we must look to the State Governments and to the National Government for the saving and the upbuilding of our forest interests. What woodlands we have should be preserved by absolute force where the Government has the right, and by all encouraging legislation where it has no control. And by every possible measure, State and National, should forest planting be encouraged. There are very few if any of the states but what have passed the limit of safety in work of deforestation. I cannot here argue this question at length, but a single fact will illustrate the imminent necessity for action. This State of Ohio where we meet to-day, in 1853 had 54 per cent. of its surface covered with forest. In 1884, but 17 per cent. of the area remained in timber. Thus in a single generation two-thirds of all the forest in existence at the beginning of the period had been destroyed, and but one-sixth of the surface of the State is now protected by the garments with which God covered these hills and plains.

Do you wonder that the valley of the Ohio is almost annually desolated by inundation? That climates change, and always for the worse? That winters are harder, and summers hotter, and drouths more destructive? Do you wonder that there are no more sparkling brooks that run and sing all summer, but only muddy torrents, and the dried up beds of streams? The great conservative equalizing power of the forest is gone. The State of Ohio would seem to be making hasty strides towards the agricultural condition of Arabia. And Ohio stands for America. I quail before the inexorable penalties which nature has in store for all states and peoples who will ruthlessly destroy so glorious a heritage of forest as the American people once possessed. Without forest no successful agriculture is possible, and no high civilization can be maintained. It surely becomes the duty of every intelligent citizen to use all available influences through state and national legislation, and by the diffusion of light among the people, to save what remains of our American woodlands, and to grow new forests over the vast treeless plains where they are both an economic necessity, and an indispensable factor of a profitable agriculture.

T. H. HOSKINS.

#### HAY MAKING AND ALSIKE CLOVER.

The following letter from the venerable LEWIS F. ALLEN to the London Agricultural Gazette, under date of Buffalo, N. Y., Aug. 30, will be read with interest here:

I am much interested in the letter of the 16th instant from your correspondent "Waltham Abbey" in his account of hay-making the present summer. In comparison with him, I give you an account of my own hay harvest in the months of June and July past. I had a trifle less than 200 acres in hay-grass, composed of clean timothy, timothy and medium red clover,<sup>(1)</sup> and alsike clover mixed in various proportions to each other, laid down two to four years ago with winter rye, spring wheat and oats, and a seeding of about seventy-five acres spring seeding of 1885 with the same crops. Of course the last year's seeding was the largest growth in clover, these grasses overtopping the timothy, as the first year's growth of the latter is less rank than the succeeding one. The proportion of different seeds which I have adopted are as follows:—Six quarts of timothy, four quarts of medium red, and two quarts of alsike clover per acre. The smaller size of alsike seeds are equivalent in number to the double quantity of the red, giving an equal number of shoots with the other. They come into full bloom

(1) *Trifolium medium* is the genuine cow-grass. No seed of it could be had in Montreal last spring. A. R. J. F.