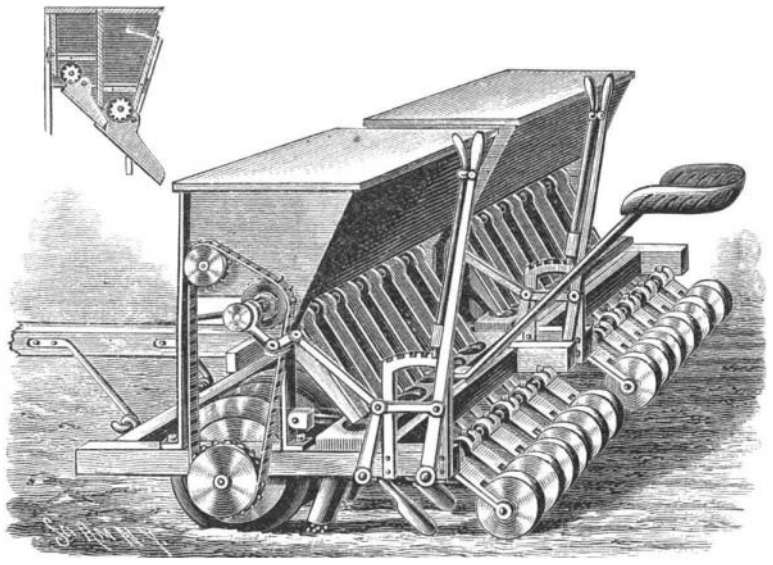
A NEW AGRICULTURAL IMPLEMENT.

In the roller and drill shown in the annexed engraving are combined two efficient implements, which taken together enable the farmer to sow seed in even drills upon either smooth or rough ground. The main frame of the machine is mounted upon the journals of a roller formed in two sections, the periphery of the roller being furnished with circumferential V-shaped ribs, which serve to pulverize the soil and at the same time form the drill for the reception of the seed.

Above the roller are supported seed boxes, each of which in the present case is divided into two compartments by a longitudinal partition, as shown in the detail sectional view, so that both seed and fertilizer may be sown simultaneously. The seed boxes are provided with openings closed by slides for supplying the seed to peculiar feed wheels, which cause a uniform discharge through the troughs, which are inclined downwardly and rearwardly to the drill teeth.

Behind the drill teeth are supported a series of slotted, concave covering blades for throwing the soil over the seed, and behind the blades, and in the path of the ribs of the roller and the drill teeth, are journaled series of rollers for compacting the earth above and around the seed. These rollers are adjustable by the levers seen at the rear of the machine. A seat is provided for the driver. Behind and above the ribbed rollers is journaled a zigzag bar which may be brought into engagement with the periphery of the rollers whenever it becomes necessary to clear them from adhering soil.



JONES'S COMBINED ROLLER AND DRILL.

It is obvious that this improved machine may be used upon either rough or smooth ground with equal facility. If desired, the rollers, the covering blades and the drill teeth may be removed, and the rollers alone may be employed for pulverizing the soil.

Further information in regard to this invention may be obtained by addressing Mr. Harvey E. Jones, of Carlysle, Ill.

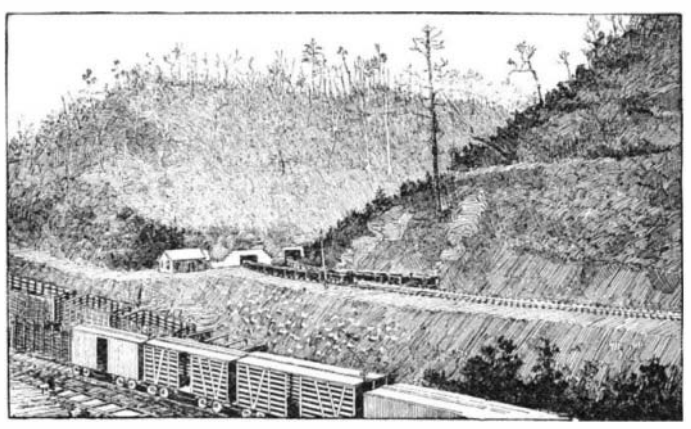
Regularity of Habit.

One of the most difficult of all minor habits to acquire, says an able writer, is that of regularity. It ranks with that of order. The natural inclination of most persons is to defer until the last possible moment, or to put off to another time, where this can possibly be done. Yet habits of regularity contribute largely to the ease and comfort of life. A person can multiply his efficiency by it. We know persons who have a multitude of duties, and perform a vast deal of work daily, who set apart certain hours for given duties, and are there at the moment and attend rigidly to what is in hand. This done, other engagements are met, each in order, and a vast deal is accomplished, not by strained exertion, but by regularity. The mind can be so trained to this that at certain hours in the day it will turn to a particular line of duty, and at other hours to other and different labors. The very diversity is restful, when attended to in regular order. But let these run together, and the duties mix, and what before was easy is now annoying and oppressive, and the exact difference between many is at this point. There are those who confuse and rush, and attempt to do several things at once, and accomplish little, while others will quietly proceed from one duty to another, and easily accomplish a vast deal of work. The difference is not in the capacity of the two, but in the regular methods of the one as compared with the irregular and confused habits of the other.

SOME OF THE INDUSTRIES OF VIRGINIA.

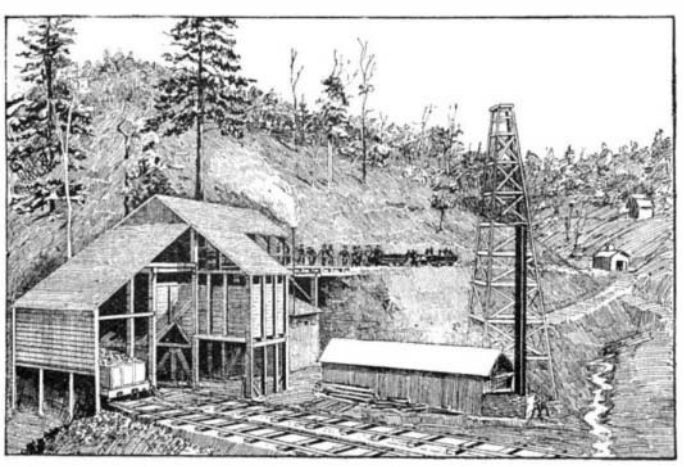
We present views of some of the coking works of Virginia, the cuts being kindly furnished by the Norfolk and Western Railroad Company.

The remarkable Pocahontas coal fields are well known throughout the country. The area of these steam and coking coal beds extends through Tazewell County, Virginia, and Mercer, Wyoming, McDowell and Raleigh Counties, West Virginia. The Pocahontas coal exists in three workable bed or veins, above water level; that which is chiefly worked being known as No. 3, and having a thickness in the vicinity of Pocahontas of 11 ft. 3 in. It has been estimated that this vein should yield 10,000 tons per acre, while those above it should produce each 6,000 tons additional. The almost unrivaled quality of this coal for steam-making purposes is now a matter of general knowledge. As compared with samples from five of the leading coal districts of Pennsylvania and one from Wales, it stands highest in fixed carbons and lowest in ash, sulphur and volatile matter. Fourteen corporations and firms are now engaged in coking operations in this field, running a total of 1,765 ovens, with 247 additional ovens under construction, and about 700 contemplated to be built, as the requirements of coke for furnaces demand. To these others are constantly being added. The relative value of this coke product, as compared with that used at the furnaces of the Alabama, Tennessee and Pennsylvania (Connellsville) iron-making districts, is shown in the fact that the percentage of sulphur and ash in the Flat Top coke is very much lower, and the percentage of fixed carbon very much higher than those of either of those districts. The total output of coal from this region for 1889 was 1,785,292 net tons, and the coke production was 312,310 net tons.

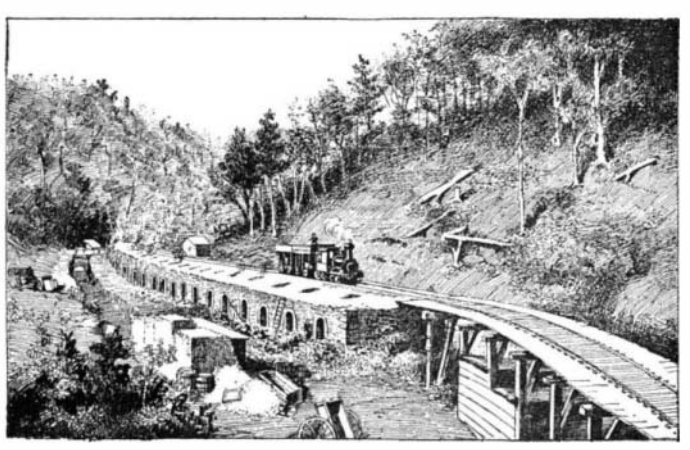


COAL MINES AT POCAHONTAS, VA.

COKE OVENS AT POCAHONTAS, VA.



COAL MINE AND TIPPLE ON THE BLUESTONE, W. VA.



COKE OVENS ON THE BLUESTONE, W. VA.

FILLING FOR DRY BATTERIES.—A new mixture for filling dry cells prepared by Mr. A. V. Meserole, of this city, consists of the following solid ingredients in the form of powder: Charcoal, 3 parts; mineral carbon or graphite, 1 part; peroxide of manganese, 3 parts; lime hydrate, 1 part; white arsenic (oxide), 1 part; and a mixture of glucose and dextrine or starch, 1 part; all by weight. These are intimately mixed dry and then worked into a paste of proper consistency with a fluid solution composed of equal parts of a saturated solution of chloride of ammonium and chloride of sodium in water, to which is added one-tenth volume of a solution of bichloride mercury and an equal volume of hydrochloric acid. The fluid is added gradually and the mass well worked up.

Cholera in Japan.

Advices reveived from Tokio, *via* Yokohama and British Columbia, contain intelligence of the terrible outbreak of cholera which has taken place in Japan, by the ravages of which upward of 200 deaths were occurring daily. Cholera first broke out in Nagasaki, the southern metropolis of Japan, and in twenty days there were 926 cases and 671 deaths. The disease quickly spread, and by the 29th of July all the towns from Satsuma to Hakodate were attacked, the deaths per day being estimated at not less than 200. At Yokohama the outbreak was not very serious, but the officers and crew of the Turkish war ship Ertogrul were attacked and the vessel was removed to the quarantine grounds, where two seamen died. Her Majesty's ship Imperieuse left the harbor to avoid the epidemic, and the captains of the English, American, and other merchant vessels in port were adopting every precaution to protect their crews.

Treatment of Diphtheria by Inoculation.

In the *Repertoire de Pharmacie* for July 10, 1890, it is stated that Dr. Babchinski was attending a case of grave diphtheria occurring in his own son, in which a rapid change for the better occurred coincidentally with the appearance of erysipelas on the face. The fever rapidly fell, the false membrane disappeared, and cure rapidly took place. Dr. Babchinski also states that in several other cases he noted a great improvement coincident with the appearance of erysipelas, and in one of them the erysipelas occurred on the leg and not on the face. These facts suggested to Dr. Babchinski the idea of inoculating diphtheria cases with blood taken from patients suffering from erysipelas, and he states that in several cases in which he employed this procedure cure resulted. Later on he practiced inoculation of other cases of diphtheria with cultures of the microbe of erysipelas in agar-agar, and likewise noticed the disappearance of the symptoms of diphtheria. He further adds that when the inoculations were made all special treatment was suspended, and in no case did the erysipelas present any sufficient gravity to cause uneasiness. He concludes by stating that, if his observations and experiences are confirmed, this treatment should rob diphtheria of all its dangers.

MR. CHARLES BELL, of Stroudsburg, Pa., sends a photograph of a part of a collection of moths, beetles, and other insects killed by arc lights. The specimens are artistically grouped and represent a large number of species. Mr. Bell says the number of insects destroyed in this manner is very great, some nights amounting to more than a bushel.