Analysis of the Apple.—A paper on the analysis of the fruit of the apple, by Dr. Salisbury, furnishes some facts worthy of notice. Owing to the lateness of the season (in spring,)before the analysis was commenced, the following sorts only were examined, viz: Swaar, Kilham Hill, Rhode Island Greening, English Russetts, and Talman Sweeting. From the numerous table of results, the following facts are drawn:—

The English russet contains less water and more dry matter than any other sorts—This is doubtless the reason why this variety is so hard to freeze. Mhe Talman Sweeting contains more, the greening still more, and Kilham Hill most of all; ranging in all these from 79 to 86 per cent. A fresh potato contains about as much water as the Russet. These results show the reason that apples when manufactured into cider produce nearly their own bulk of juice, a fact which has often puzzled many who merely regarded the solid nature of the fruit.

A striking difference in the composition of the apple and potato, is the entire adsence of starch in the former, while in the latter it constitutes about one half of the solid part. The apple, according to this analysis, is rather superior to the potato in the fat producing qualities, and which accords with the experience of some accurate farmers. The apple contains about twice as much of the compounds of nitrogen as the potato.

The Russets were found to contain a larger portion of tannic and gallic acids than other sorts. These acids impart a stringency, and are indicated by the black colour given to a knife of iron or steel used in cutting this fruit. The apple is rich in phosphoric and sulphuric acids and potash and soda. Hence we may infer that bone dust, ashes salt and plaster, would be likely to prove useful as portions of the manure applied to a bearing tree, in addition to what is already containd in yard manure.—*Transactions N. Y. Ag. Society.*

Recovering Dried Grafts.—It often happens that grafts of particular fruits are received in a dried or withered condition from being badly packed; and being supposed to be worthless are thrown away. The writer once received in autumn a small package of a new and rare sort of apple, from a distance of some hundreds of miles, without any protection at all, and they were quite thoroughly *seasoned*. They were encased in moss, and buried a few inches beneath the surface of the earth on a dry spot of ground. By spring they had gradually imbibed moisture, and had become plump again, and on being set, every graft grew. Efforts of this kind often fail in consequence of applying the moisture too copiously and suddenly. Shoots in so withered a condition should receive it so gradually as to require some weeks at least for the completion of the process.—*Albany Cultivator.*

To prevent the attack of the "Onion Grub."—The growth of the onion is frequently prevented and the plant sometimes destroyed by a worm which attacks it as soon as it appears above ground. A correspondent of the *Gardener s Chronicle* states that he has applied nitrate of soda with good effects in preventing the ravages of this insect. He used half a pound of the salt to a gallon of water, and applied eight gallons to a bed of ten yards in length. He states that it checked the progress of the worms, and the crop turned out well.

Scientific.

HOW COAL WAS MADE.

Geology has proved that, at one period, there existed an enormously abundant land vegetation, the ruins and rubbish of which carried into seas, and there sunk at the bottom, and afterwards covered over by sand and mud beds, became the substance which we now recognize as coal. This was a natural transaction of vast consequence to us, seeing how much utility we find in coal, both for warming our dwellings and for various manufactures, as well as the production of steam, by which so great a mechanical power is generated. It may naturally excite surprise that the vegetable remains should have completely changed their apparent character, and become black.—But this is explained by chemistry; and part of the marvel becomes clear to the simplest understanding when we recall the familiar fact, that damp hay thrown closely into a heap, gives out heat and becomes a dark color. When a vegetable mass is excluded from the air, and subjected to great pressure and bituminous fermentation is produced, and the result is the mineral coal, which is of various character accordingly as the mass has been originally intermingled with sand, clay or any other earthly impurities.

On account of the change effected by mineralization, it is difficult to detect in the coal the traces of a vegetable structure; but these can be made clear except the highly bituminous caking coal, by cutting or polishing it down into thin transparent slices, when the microscope shows the fibres and cells very plainly. From distinctly isolated specimens found in the sandstones amidst the coal beds, we discover the nature of the plants of this era. They are most all of a simple cellular structure, and such as exist with us in small forms, (horse tails, club mosses and ferns.) but advanced to an enormous magnitude. The species are all long since extinct. The vegetation is generally such as now grows in clusters of tropical islands, but it must have been the result of high temperature, obtained otherwise than that of the tropical regions now is, for the coal strata are found in the temperate and even the polar regions.

The conclusion, therefore, to which most geologists have arrived is, that the earth, originally an incandescent or highly heated mass, was gradually cooled down, until the carboniferous period it fostered a growth of terrestrial vegetation all over its surface, to which the existing jungles of the tropics are barrenness in comparison. The high and uniform temperature, combined with a greater proportion of carbonic acid gas in the manufacture, could not only sustain a gigantic and prolific vegetation, but also create dense vapors, showers and rains; and these again gigantic rivers, periodical inundations and deltas. Thus all the conditions for extensive deposits of wood, in estuaries, would arise from the high temperature; and