these two kinds of roots would not have grown to maturity without the commingling of their cells and organized substances, as well as colors. As in the case of the misletoe, specimens of which, growing on persimmon, chestnut, and oak, we have examined with a good microscope, nothing but juxtaposition is necessary between congenial cells for both to live and perform their appropriate functions. In budding and grafting, such cells are brought into contact—nothing more. When a parasitic plant fastens itself upon another and extracts its nutriment, like rust, smut, moss, and lichens, it simply places its own cells in contact with those of the suffering plant; and the process may be regarded as natural budding. The same law which made the white and red beets adhere closely together, in the experiment of Dr. MACLEAN, causes the red fungus called "rust" to adhere firmly to the stems of wheat plants as they approach maturity. The matter elaborated in the cells of parasitic plants differs widely from that formed in the adjoining cells of the foster-mother. The fungus, called "smut" in wheat, transforms the entire seed (starch, gluten, and albumen) into a black, fœted mass of spores, every one of which may propagate its kind.

Important as are the vital processes carried on in cells, the distribution of the raw material wrought into wood, sugar, starch, oil, gluten, and other nitrogenous compounds, by means of continuous tubes, is equally indispensable in all vegetable developments above the cryptogamic families. Vessels in plants and animals appear to do nothing more than transport various substances from one part of the system to another; they do not assimilate nor decompound the fluids or semi-fluids which they contain. If any changes take place within them, they are chemical, not vital, like the formation of bile in the liver, or gastric juice in the stomach, or of sugar in the cells of the beet. Why a lachrymal cell secretes tears, or a renal cell urine, no one knows.

Fluids pass through the walls of cells during their healthy action, whether in animals or plants, but the function of each appears to be entirely independent of all others. It may, however, be varied and modified by a change of circumstances; and wise culture in the case of plants consists in so changing the surrounding circumstances as to improve the growth and quality of all natural fruits, seeds, roots, tubers, and blossoms. To understand the vital and chemical laws by the operations of which all agricultural and horticultural plants attain a higher development, one must study their anatomy and physiology, and the properties of the alimentary substances on which they subsist. Because we can not learn all the mysteries of nature as displayed in the vegetable kingdom, it does not follow that we should attempt to learn nothing. Much is already known, and infinitely more is knowable to reward future observations and researches. Under the most auspicious influences, *plants grow with wonderful rapidity, and yield great* returns to the cultivator. Hence, every element which can influence the production of new cells and new vessels in plants, whether it is heat or cold, moisture or dryness, sunshine or shade, sand or clay, lime or potash, demands careful investigation. No one wants poor, stunted crops, yet few are willing to learn all they can of the true causes of small and unprofitable harvests. If farmers and their sons could look into the circulating tubes of maize, wheat, and oats, and see how innutritious and watery is the food drawn from a badly tilled soil, and then examine the condition of their stables, sheds, barns, and yards, where rich manure is lost by the ton, the wholesome rebuke would lead to a speedy reform. Superficial observation and downright carelessness are the two greatest evils in agriculture. The microscopic cells in the forming seeds of corn, wheat, rye, barley, oats, and potatoes would elaborate an incalculable amount of starch, oil, and gluten, with which to feed abundantly all mankind, if this great subject could only receive proper attention. As it is, many thousands suffer from the want of food in cities, and the land is every where made less productive as population increases.

LICE ON CATTLE.

MR. EDITOR:—I have been very successful in removing lice from cattle by the use of sulphur, given in doses of from one to three teaspoonfuls, and from once to three times in two weeks, according to age and circumstances. The blood of the animal, upon which the vermin subsist, becomes impregnated with the sulphur, or some property contained in it, and the consequence is, I have seen legions of them clinging to the hair and dead, as you, no doubt, have seen grasshoppers sticking to a thistle, or some other object, after a severe frost in the fall. M. GARNSEY.

MIDDLEBURGH, N. Y.

[The above preventive is valuable by reason of its simplicity and ease of application. Facts like the above constitute the basis of intelligent farming and keeping of stock.—ED.]

YEOMEN in leather doublets may be of more worth than lords in velvet robes.