

does, and by becoming a scientific man and analytical chemist, he is enabled to protect himself and others against the frauds that are continually being practised upon the uneducated, by dealers who are themselves either ignorant of science, or who use it to impose upon the community. He learns how to study the geology, mineralogy and chemistry of the soil he cultivates, the botany of the plant he grows, and the laws of health and diseases of the animals he uses.

"In a word, he is made thoroughly acquainted with the laws and phenomena of the material world with which he is in immediate contact, and about which farmers are most deplorably ignorant, but a knowledge of which is essential to their material success or intellectual pleasure, in the pursuit of the duties of rural life."

KNOWLEDGE—ITS BENEFITS TO THE FARMER.

THE field of knowledge is infinite. Whether it be of professional knowledge, or of that which has no immediate application to the professional or industrial pursuits of man is competent, and no life sufficient but for the attainment of a small portion of it. So much as is attained by the most learned is only as a sand on the shore, or a drop in the ocean, compared to the whole field of knowledge.

Mr. Preston, one of the most eminent lawyers in England of our day, devoted himself, as the lawyers of that country do, exclusively to the study and practice of one department of the law—that relating to real estate, or the branch of law called by the lawyers the "real law." He was the author of several treatises on that part of law, considered the most accurate and learned among those written in that department. Yet, after thirty years' practice, and having won an enviable reputation as a jurist by the publication of his works, he said that he did not comprehend fully the real law of England.

The man is not living in Massachusetts, —he has never lived there,—who has fully comprehended the whole volume of the knowledge that is contained in a blade of grass, or in a small piece of stone, or lump of earth. Yet are there many among our farmers who consider a suggestion that there are things in their art to be learned by them, as entitled merely to derision. So it is with other men in all the walks of life. Lawyers who have not a tithe of the know-

ledge to which Mr. Preston had attained in the "real law," would not speak so humble of their knowledge as he did—nor would they think so disparagingly of it.

The first step in the acquisition of knowledge is to lay aside this delusive idea that there is nothing to be learned—and in no art or pursuit is it so necessary as in agriculture; for the reasons, *first*, that the area of knowledge and science involved in that art is more extensive, varied and vast than in any other,—and, *second*, that the store of knowledge is of recent collection, and that vast accessions have been made to it since the birth of farmers now in life. Among these are the structures of the various organs of plants, their functions, the secretions, modes of germination, vegetation and annual increase and decadence, the elements of which they are composed, the fact that all these elements exist in the earth, that they are absorbed by the plant for its sustenance, and that inorganic mineral matter is thereby converted into organized vegetable substance,—that such vegetable substance has life and is subject, like the animals, to disease, and endowed with the faculty of reproduction by a mode similar to the continuation of the animal races.

WHAT MAKES A BUSHEL.

THE following table showing the number of pounds in a bushel of the different kinds of grain, seeds, potatoes, fruit, coal, etc., will be found of practical benefit to our readers:

Wheat.....	60	pound
Corn, shelled.....	56	"
Corn, on the cob.....	70	"
Rye.....	56	"
Oats.....	32	"
Barley.....	46	"
Buckwheat.....	52	"
Irish potatoes.....	59	"
Sweet potatoes.....	50	"
Onions.....	57	"
Beans.....	60	"
Bran.....	20	"
Clover seed.....	60	"
Timothy seed.....	45	"
Hemp seed.....	45	"
Blue grass.....	14	"
Dried peaches.....	33	"
Flax seed.....	56	"
Castor beans.....	46	"
Dried apples.....	24	"
Coal.....	85	"