

exhalations from the leaves. The straw decays but slowly, and thus furnishes its substance by degrees to the young plant in due progression and proportion, (such as the siliquious ingredients, for instance, of the pod or capsule,) so that the decomposition of the straw corresponds to the four phases of fermentation, in progressing from the saccharine to the alcoholic, the acid and the putrid states, analogous to those of infancy, budding youth, maturity, and seeding of the plant. We observed that our blades of wheat have but very few roots, and those are short and hard, something like a bird's claw, and this agrees with the remarks of Monsieur Raspail, who states that the most healthy plants in ordinary vegetation have the least exuberance of roots and fibres. Another important observation also is, that weeds and parasitical vegetation are prevented by this method, for the straw chokes every other plant but that of its own seed. Many other interesting observations might be made on these experiments, but we refrain at present from obtruding on your readers; and if any of them wish for further information on the subject, we shall willingly afford them every facility. The importance of the general result will easily become apparent without any further comment: and a revolution in the present modes of agricultural labour is the necessary consequence of this discovery. No tillage will be now required, or any artificial stimulants in manure, or other more or less expensive combination with regard to soil and culture. In fact it would be tedious to enumerate the various advantages that may result in practice from this casual experiment, and therefore we proclaim it simply to the world that all may profit by it.

“CHARLES PAILLARD,

“BERNARD.

“*Brest, August 1841.*”

THE statements made in the preceding observations are certainly very interesting, but nevertheless we can-

didly confess our hesitation in yielding entire assent to them. Experimentalists are generally enthusiastic, and their zeal not unfrequently carries them into extravagant conclusions.—The influence of air, water, heat, light and electricity upon vegetation is indisputable, but we cannot believe that the earth merely bears the plant, acting as a floor for it to rest on without contributing to its support. If such was the case, and germination, vegetation and reproduction were dependent exclusively upon plants themselves, that is, upon the falling and decay of the perishable parts of the previous plant without any assistance from the soil, then all plants, thus circumstanced, should acquire a growth equally luxuriant upon poor and good lands. But we find unequal growths of similar woods and grasses in the desert, which has not been ravaged by the hand of man. The rich mountain soils and alluvials of our Provinces are remarkable for the gigantic growths of their hemlocks, pines, and hardwoods, whilst trees of the same description in forests upon sandy plains exhibit a very inferior stature. Grass upon marsh and upland meadows left entirely to the reproduction of nature, untouched by the scythe, or teeth of cattle, should display equal luxuriance. But we unhesitatingly say, that this is not the case. It is true that, the decaying grass of a previous season falling upon the ground, acts as a covering for the roots from which it sprang, and in its progress of decay, favours the growth of a subsequent year; but we think this is satisfactorily explained by *Leibig*, who considers that fertility is dependent upon the presence of certain salts—these salts are extracted from the earth in the process of vegetation, and are again restored to it by the decaying grass, because nothing has been removed from the surface. The soil annually becomes richer for the plant restores not only all that it received from it, but it gives to it also the nourishment, which was