

the tines: when it loses its hold, and is thrown off, always relieving itself from being choked, however wet or foul the land. 3. The mode by which this harrow can be so easily adjusted to work at any depth required, renders it of great value; this is done as quick as thought by moving the regulator upwards or downwards between the lateral spring; and by each movement upwards into the openings, the fore-tines will be allowed to enter the soil about  $1\frac{1}{2}$  inch deeper by each movement into the different spaces, until the regulator is thrown up, when the harrow is given its greatest power, and will then be working at the depth of 8 or 9 inches. Also the axletree of the hind-wheels is moved, a space of 7 or 8 inches, by a screw through the axletree, which is turned by a small handle, so that the hind part of the harrow, by its simple mode, is also regulated to the depth at which it is found necessary to work. 4. When the harrow is drawn to the foot lands, the regulator is pressed down, and the fore-wheel is then allowed to pass under the fore bar, by which the nose of the harrow is lifted, and the points of the fore-tines will then be taken 2 or 3 inches out of the soil, which affords the means of turning the harrow with the greatest facility. 5. Being made of malleable iron, its durability may be said to be endless; whereas, if made of wood, the prime cost would be entirely lost at the end of every 5 or 6 years. Lastly, the mode of working is so easy, that any boy of 10 or 12 years of age is perfectly qualified to manage it. Next to Wilkie's brake, we consider this the most valuable of pronged implements, and think that, like Wilkie's implement, it might be substituted for the plough, after drilled green or root crops, on light soil generally. Some account of the astonishing powers of the implement, as exemplified in breaking up Hyde Park, London, in 1826, will be found in the *Gardener's Magazine*, vol. ii. p. 250.

## ON THE STUDY OF NATURAL HISTORY.

The following passages from Dr. Carpenter's excellent treatise on *Vegetable Physiology*, will serve as a suitable introduction to the subject of Natural History. In making extracts for this and other departments, we shall study to select such as are, from their simplicity of expression, adapted to general readers, and for scientific accuracy and moral tendency, free from objection.

"Of all departments of science, there is perhaps no single one capable of exercising such an advantageous influence on the mind of its cultivator as Natural History. Every kind of knowledge has in it something that is valuable; for even if it be of no direct utility in the ordinary concerns of the world, the acquirement of it is a useful exercise to the mental faculties, and the possession of it may operate in a most beneficial manner on the habitual feelings, and give a corresponding direction to the whole course of life.

It is desirable to cherish correct views of the benefits of different kinds of knowledge, that those may choose most advantageously for themselves whom the necessary business of life debars from the

extended pursuit of it; and without understanding other branches of science, it may be safely affirmed that Natural History is capable of affording more to interest and instruct, more to refresh and relax the well-disposed mind, on a very slight acquaintance with it, than any other pursuit. Not a step can the learner advance in it, but he meets with wonders previously unsuspected,—not a height does he gain, from which his prospect is clearer and more extensive, but his notion of these wonders requires a yet more astonishing vastness. The more he knows, the more he desires to know; and the further he advances, the more does he perceive how much delight is yet in store for him.

"The beneficent Creator of all has not only ordained, that every part of His works should be good—should be adapted to answer its designed end, and should contribute in the highest degree of which it is capable to the well-being of His creatures; but he has made everything "beautiful in its season;" He has so formed the mind of man, that it derives pleasure from the contemplation of the glorious works around him. And it is, therefore, a worthy employment of our faculties to encourage this pleasure; and to place it upon a more solid foundation than that afforded by the mere forms and colours of the objects around us, however beautiful these may be.

"One great source of the pleasure derived from the enquiry into the structure and mode of existence of the living beings around us, arises from the beautiful adaptation of their parts to each other, and of the whole to the place it has to occupy, which we can easily trace in every one. The philosopher who studies the motions of the heavenly bodies, and the station of this earth among them, traces these adaptations no less clearly; but it requires profound and long-continued study to be able to comprehend them aright. The naturalist, however, can discern them with far less research, in every plant that grows, in every animal that breathes; and he meets with a constant variety, which prevents him from growing weary of the pursuit.

"Yet the young are too frequently kept in ignorance of the wonders and beauties around them; and whilst encouraged to learn languages, and read many books, they remain unacquainted with the bright volume of Creation, the pages of which are daily and hourly unrolled before them, "written," to use the impressive words of Lord Bacon, "in the only language which hath gone forth to the ends of the world, unaffected by the confusion of Babel." But these pages are not to be read without some study: the alphabet and grammar must be learned, in order that their beauties may be rightly comprehended: and those who are entering upon the enquiry, need to be rightly directed by those who are more advanced.

"Natural History has been too generally shunned, as a science of hard names and intricate classification, by those whose minds are occupied with the necessary employments and cares of the world, and who seek in the pursuit of knowledge a source of refreshment and relaxation. But the objects of its several departments are not commonly understood. The study includes the examination of the structure, habits, and mode of existence, of all the living beings which so thickly people the surface of the globe;