

products of it sufficient for the demands of the people, that we may no longer be giving a premium to the industry of Farmers in the United States, by the importation of articles which our own Province could supply; and let us endeavour to develop the utility and charms of a pleasing profession, that it may present attractions to those who may hereafter select it as the pursuit of their lives.

AGRICULTURAL CHEMISTRY.

WE shall devote a portion of our Periodical in each number to copious extracts from the recent and valuable work on Organic Chemistry, in its application to Agriculture and Physiology, by Justus Leibeg, M. D., &c. &c. &c., Professor of Chemistry in the University of GIESSEN, and edited from the manuscript of the author, by Lyon Playfair, M. D., and re-edited, with Introduction, Notes, and Appendix, by Dr. Webster, Professor of Chemistry in Harvard University.

This work has received unbounded applause in Great Britain, and many experienced and Philosophical Agriculturists consider its publication as a new era in the art of agriculture. At an anniversary meeting of the Royal Society, its President, the Marquis of Northampton, addressed Professor Daniels, who was the representative of Leibeg at that meeting, in the most flattering and complimentary manner, and when awarding him one of the *Copley Medals* of the Society, acknowledged the benefits which he had conferred upon science by his practical and useful discoveries.

Animals and Vegetables are organised bodies: the object of Organic Chemistry is to discover the chemical conditions, which are essential to the life and perfect develop-

ment of animals and vegetables, and generally to investigate all those processes of organic nature, which are due to the operation of chemical laws:

The primary source, whence man and animals derive the means of their growth and support, is the vegetable kingdom:

Plants on the other hand, find new nutritial materious only in *inorganic* substances.

Carbon and nitrogen are the principal constituents of plants, and as we shall have occasion to use these terms frequently in our extracts from Leibeg, we shall give a brief explanation of them, including also hydrogen and oxygen.

Carbon in its purest state forms the diamond; but charcoal is the form in which it is most commonly found. Ivory black is an impure charcoal, prepared from bones, and often called animal charcoal. Lamp black is the charcoal deposited from oil, resin, and other compounds containing this element, during combustion. Plumbago, or black lead, is a compound of charcoal with a very little iron. Charcoal is solid, black, porous, and brittle. It is inflammable, producing carbonic gas when heated in air, or oxygen. It takes fire spontaneously when put in large heaps. It is insoluble in water—it destroys colouring matter, and the offensive taste and odour of putrescent animal, or vegetable matter. It absorbs large quantities of gases, especially of ammonia. It is prepared from wood by heating, excluding the air. Wood is composed of carbon, oxygen, and hydrogen, with a small portion of earthy or saline matters. By heat the oxygen and hydrogen are expelled, carrying along with them part of the carbon, and forming inflammable gases, water, acetic acid, tar, pyroxillic spirit, and kreosote. The excess of carbon forms the charcoal which remains. All animal and ve-