

those of light and heat, began to be better understood, as well in their general relations, as in their special influence on plants.

The introduction of more accurate chemical methods permitted, meanwhile, a closer investigation than had before been possible, of the tissues and products of plants, and of the various transformations which those products undergo during the several stages of vegetal development.

The sound physico-chemical principles thus established had the happiest influence on physiological investigations. The organs of plants and of animals were studied in a clearer light than before; and their respiratory, assimilative, and excretory processes, together with the relations established by those processes between the three great kingdoms of nature, were gradually made out.

Among the many illustrious men who assisted in working out these great results, Lavoisier probably deserves the highest place; not, perhaps as the largest contributor of new truths to the accumulating store,—though his contributions of this kind were many and brilliant,—but because his vivid imagination, and the eminent generalizing powers with which he was endowed, enabled him to co-ordinate all the scattered researches of his time, and to display innumerable isolated facts in their true subserviency to general laws; so as (among other things) largely to extend our knowledge of the cosmic equilibrium on which sound husbandry can alone be based. Everything, indeed, that Lavoisier did bore the impress of his master-mind. He it was who first applied the Balance to the study of the phenomena of Life. He it was who first showed that while plants evolve oxygen, animals, on the contrary, consume it; carbon being oxidized or burned in their bodies as oil is burned in a lamp. His lofty tone of thought, and eloquent language, powerfully impressed his contemporaries; and chiefly to his influence and example the admirable researches of his age owe their high scope and scrupulous precision. Science never endured a severer loss than when Lavoisier met his untimely fate. But his great spirit lived after him; and researches bearing upon the noble themes he had loved to treat were carried on with, if possible, increased activity after his death. The scientific records of Europe were soon crowded with fresh masses of undigested discovery; and in a few years such another mind as his was wanted, to grapple with the growing mass of detail, and once more to create order out of the scientific chaos.