V.

An Introduction to Physiological and Systematical Botany. By JAMES EDWARD SMITH, M. D. F. R. S. President of the Linnean Society, &c. &c. London. 8vo. 1807.

THIS is an elementary work, composed upon an easy and comprehensive plan, fit for the use of young persons and general readers. It is not intended to supersede the use of the more learned botanical treatises already published, but to teach the first principles of the science to all classes of readers, and to recommend this interesting study to more general attention. The rudiments of botany, like the rudiments of the Latin tongue, have hitherto had a forbidding aspect, and we are much indebted to those benevolent masters who will condescend to deliver their acquisitions in a simple manner, so as to interest the feelings, and, at the same time, awaken the curiosity of the mind. Whoever has had the good fortune to hear Dr Smith's lectures, may form a pretty good idea of the plan and the merit of this introduction. The same accurate information, the same ingenious and happy illustration, the same freedom from all vain pretension, and the same philosophical spirit and simplicity which characterise his public lectures, are to be found in the volume before us. In a well-written preface, the distinguished author speaks of his subject with laudable enthusiasm: he looks upon botany as a man ought to regard any particular pursuit to which he devotes himself; and he recommends it not only as a rich source of pleasure, but as an excellent exercise for awakening the mind and for sharpening the powers of judgment and discrimination. Natural history is commonly taught in schools on the continent, especially in Sweden, and men in that country rise to eminent situations by their acquirements in physical sciences. There are no people whose minds are more acute or better regulated than the Swedes, which establishes the utility of cultivating the habit of analysis and minute observation by courses of botanical and chemical studies. Among the obstacles to the improvement of physic, the ignorance of physicians and apothecaries in botany is enumerated as one; although this was formerly more frequently a source of error and uncertainty when simples were more generally employed, yet there is reason to fear the virtues and varieties of plants are not now sufficiently understood. In turning over the writings of the antients, we are astonished at the prescriptions, or rather

rather indexes of remedies, which consist of so great a variety of articles mingled together, that it is probable some plants of specific properties have been discarded, because their history is not accurately ascertained. To those who live in the country, this work will be of great service; it will introduce them to a science that will prove an inexhaustible source of entertainment and instruction, and may be the means of finding out a medicine that may for ever immortalise the name of the discoverer, and of the country which gave him birth. The distinction between animals and vegetables, and the anatomy and physiology of plants are treated of in the first chapters, because a true knowledge of the structure and parts seems necessary to the right understanding of botanical arrangement. The explanation of the Linnæan system is full and intelligent, the illustrations and examples are familiar, and mostly refer to plants easy of acquisition, or to plates which are readily procured. Fifteen tables of plates, neatly drawn and engraved, with an explanation and an index, terminate this miscellaneous volume. We shall give the following extract from the chapter on the diseases of plants, as a specimen of the author's manner, and also to recommend the analogy between vegetable and animal separation of parts, for farther comparative experiments.

“Plants are subject to gangrene or *sphacelus*, especially the more succulent kinds, of which a very curious account, concerning the *cactus coccinellifer*, Indian fig, or nopal, extremely to our present purpose, is given by M. Thiery de Menonville, in his work on the culture of the nopal as the food of the cochineal insect. This writer travelled, about 20 years since, through the Spanish settlements in South America, chiefly noted for the cultivation of this precious insect, on purpose to transport it clandestinely to some of the French islands. Such were the supineness and ignorance of the Spaniards, that he succeeded in conveying, not only the living insects, but the bulky plant necessary for their sustenance, notwithstanding severe edicts to the contrary. He had attended previously to the management of the nopal, and made his remarks on the diseases to which it is liable. Of these the gangrene is extremely frequent in the true nopal of Mexico, beginning by a black spot, which spreads till the whole leaf or branch rots off, or the shrub dies. But the same kind of plant is often affected with a much more serious disease, called by Thiery “*la dissolution*.” This seems to be a sudden decay of the vital principle, like that produced in animals by lightning or strong electricity. In an hour's time, from some unknown cause, a joint, a whole branch, or sometimes an entire plant of the nopal, changes from apparent health to a state of putrefaction or dissolution. One minute its surface is verdant and shining; the next it turns yellow, and all its brilliancy is gone. On cutting into its substance, the inside

side is found to have lost all cohesion, being quite rotten. The only remedy in this case is speedy amputation below the diseased part. Sometimes the force of the vital principle makes a stand, as it were, against the encroaching disease, and throws off the infected joint or branch. Such is the account given by Thiery, which evinces a power in vegetables precisely adequate to that of the animal constitution, by which an injured or diseased part is, by an effort of nature, thrown off to preserve the rest.

“Nor need we travel to Mexico to find examples of this. Every deciduous tree or shrub exhibits the very same phenomenon; for the fall of their decaying foliage in autumn, leaving the branches and young buds vigorous and healthy, can be explained in no other way. Yet Du Hamel laboured in vain to account for the fall of the leaf; nor is it wonderful that he or any body else, who endeavours to explain the physiology of vegetables or of animals according to one principle only, whether it be mechanical or chemical, should entirely fail. To consider the fall of leaves in autumn as a sloughing, or casting off diseased or worn out parts, seems so simple and evident, as to be hardly worth insisting upon. Yet I find myself anticipated in this theory by one physiologist only, named Vrolick, cited by Willdenow, in his *Principles of Botany*, p. 304, though several learned speculations to no purpose are extant on the subject. It is but just, however, that I should relate what led me to consider the matter with any attention. My observing friend Mr Fairbairn of Chelsea garden long ago remarked to me, that when he had occasion to transplant any tree or shrub whilst in leaf, he could soon judge of its success by the ease with which its leaves were detached. The consequence of such treatment is more or less injury to the health of the plant, as will first appear by the drooping of the leaves, most of which will probably die, and the decay will generally be extended to the younger more delicate twigs. The exact progress of this decay may speedily be known, by the leaves of those branches which are irrecoverably dying or dead, remaining firmly attached, so as not to be pulled off without a force sufficient to bring away the bark or buds along with them: whereas the leaves of parts that have received no material injury, and where the vital energy acts with due power, either fall off spontaneously, or are detached by the slightest touch. Plants of hot countries, kept in our stoves, exhibit the same phenomenon when transplanted or otherwise injured, even though not naturally deciduous.

“So when fruits are thoroughly ripened, they become, with respect to the parent plant, dead substances, and, however strongly attached before, are then thrown off as extraneous bodies. Their stalks fade or wither, though the life of the adjoining branch continues unimpaired, and a line of separation is soon drawn.”

A few peculiarities in the forms of expression, and some disputable assertions have occasionally met our eyes, but these are amply compensated by the total absence of silly superfluous matter,

ter, and by the introduction of much valuable information, not usually found in elementary works.

VI.

The Anatomy and Surgical Treatment of Crural and Umbilical Hernia, &c. &c. By ASTLEY COOPER, F. R. S. Honorary Member of the Medical and Physical Societies of Edinburgh, Lecturer on Anatomy and Surgery at Guy's Hospital. Illustrated by Plates. Part II. 90 pages, atlas folio. London, 1807.

IN our Journal for April 1806, we took an opportunity of giving a general view, and short analysis of the first part of Mr Astley Cooper's work on Hernia; and we now have the satisfaction of performing the same duty to the second part, which fulfils his promise, and completes his work on this interesting subject. In this volume Mr Cooper comprehends the anatomy and treatment of the crural hernia, of the umbilical, ventral, pudendal, perineal, thyroideal, cystic, phrenic, mesenteric, and mesocolic herniæ, and of the strangulated intestine.

We formerly remarked the success of Mr Cooper's investigations in the anatomy of the *inguinal ring*, and he seems to us to have been equally diligent, and no less successful in the dissections which he has now given of the *crural ring*. The complicated structure, however, of this part of the body, but, above all, the imperfection in the language of anatomy which is generally adopted, renders it extremely difficult to describe these parts with clearness and precision. Indeed, in no part of anatomy could the necessity of adopting the ingenious and precise language of Dr Barclay be more strongly urged; for, notwithstanding the patient investigation Mr Cooper has bestowed, his description is not altogether perspicuous, and it is with difficulty understood, unless by those who have the parts lying before them, or who are very familiar with dissection. From an aim at too great minuteness, we are convinced that the structure of these parts has been made to appear much more complicated than it really is; and the insatiable desire which several anatomists of the present day have shewn to multiply fasciæ, has at last been carried so far, and indulged to such a degree, that it appears as if no one believed himself entitled to any claim of excellence,