question, the answer to which must be supplied by future and continued investigations.

From the foregoing it will be seen that in his interesting essay the author presents us with a succinct account of the opinions of those who have before him written on the subject of which he treats, and that his own investigations have contributed considerably towards removing the obscurity in which the origin of the absorbents has hitherto been involved.

REVIEW III.

Epilepsy: its Symptoms, Treatment, and Relation to other Chronic Convulsive Diseases. By J. RUSSELL REYNOLDS, M.D. Lond., &c. &c.—*London*, 1861. 8vo, pp. 360.

FEW diseases have of late years received so much attention at the hands of the physician as epilepsy and the allied forms of nervous disturbance. The works of Drs. Sieveking, Radcliffe, &c., and the important physiological and pathological researches of Schroeder van der Kolk, Brown-Séquard, Kussmaul and Tenner, and others, have begun to throw light upon the true nature of this important class of affections.

Dr. Reynolds, the writer with whom we have now more immediately to do, renders full justice to the labours of his predecessors; so much so that his work, besides being acceptable as containing the results of his own experience, acquires great additional value as a full and reliable book of reference.

As to the scope of the work, the author, having stated his reasons for preferring the "clinical" to the local or pathological classification of disease, observes that—

"Upon the principles laid down—viz., that disease is the sum-total of modifications in structure and function; that its measure is that of the degree to which life is limited or its actions perverted, and that its classification is most naturally based upon the mode in which it effects this limitation or perversion—we come to regard 'special diseases' as groups of modified function and structure, although the names by which they are denoted sometimes express only the one and sometimes the other.

"Chronic convulsive diseases are a very definite group; they are, with few exceptions, readily recognised as such; and I propose in the following work to treat of them all, pointing out wherein they differ and wherein they agree, and advancing, by the discovery of the conditions upon which they depend, to a knowledge of the treatment which is appropriate to each." (p. 6.)

The following is the author's classification of convulsive diseases:

"I. Idiopathic convulsions; including—
Epilepsy proper; 'idiopathic epilepsy.'
Eclampsia puerorum; 'idiopathic convulsions' of children.

"II. Secondary, or eccentric, or sympathetic convulsions:
'Sympathetic epilepsy,' uterine, gastric, &c.
'Sympathetic convulsions,' in children.

"III. Diathetic, or cachectic convulsions; from general nutrition-changes:
Healthy in kind, but morbid in degree; puberty, &c. Morbid in kind and degree; tuberculosis, scrofulosis.

Toxæmiæ, arising from—
Retained excreta; urinæmic convulsions, 'renal epilepsy.'
Metamorphosed plasma; pneumonic convulsions, rheumatic, &c.
Poison introduced from without; 'syphilitic epilepsy,' lead, variola, &c.

"IV. Symptomatic convulsions; from centric disease—
'Symptomatic epilepsy,' from disease of meninges; tubercle, syphilis, traumatic, &c.
Disease of nervous centres; tumour, softening."

In the present volume, Dr. Reynolds confines himself to the consideration of epilepsy proper, or, in other words, of that form of idiopathic convulsions to which alone he believes the name of epilepsy ought to be applied.

Hence it will be seen that he employs the term epilepsy in a much more restricted sense than most other writers have done. He defines epilepsy, in fact, to be "*a chronic disease characterised by the occasional and temporary existence of loss of consciousness, with or without evident muscular contraction,*" and excludes "all those cases in which the fits were evidently due to one or more of the several conditions enumerated, retaining only those in which there was no reason to believe in the existence of anything beyond an idiopathic affection, characterised by those essential features of the disease described in the definition."

The third chapter is devoted to the consideration of the *symptoms* of epilepsy. These are studied under the heads of the inter-paroxysmal and paroxysmal symptoms: the former being subdivided into the mental and emotional, the sensational or animal, the motorial or animal, and the organic or vegetal; the latter into the premonitory, the actual or those occurring during the attack, and thirdly, those succeeding the attack.

The conclusions drawn by the author as to the mental condition of epileptics during the intervals of their attacks are as follow:

"1. That epilepsy does not necessarily involve any mental change.
"2. That considerable intellectual impairment exists in some cases; but that it is the exception, and not the rule.
"3. That women suffer more frequently and more severely than men.
"4. That the commonest failure is loss of memory; and that this, if regarded in all degrees, is more frequent than integrity of that faculty.
"5. That apprehension is more often found preserved than injured.
"6. That ulterior mental changes are rare.
"7. That depression of spirits and timidity are common in the male sex, but not in the female; that excitability of temper is found in both." (p. 46.)

With respect to the immediate *prodromata* of epileptic paroxysms, there were, in 81 cases observed by the author, in 33 positively no prodromata, in 13 the existence of premonitory symptoms was doubtful; of the 35 remaining cases, the prodromata were in 16, sensational (vertigo, headache, nausea, pain, weight at cardia, pleasing sensation in legs, tightness in throat), in 9, they were mental and emotional (fear, depression, excitement, &c.), in 7 they were motorial, and in 3 they were extrinsic (darkness under eyes or ears).

As to its *pathology*, Dr. Reynolds agrees with Schroeder van der

Kolk and other recent writers in considering the medulla oblongata, or the upper part of the spinal axis, to be the organ affected in epilepsy; he believes, moreover, that its disturbance in such cases is functional, and that this disturbance is of degree, not of kind; "misplaced in time, in combination, and altered in degree, those functions are, but no new property is conferred upon the organ, nor is any natural power changed in the quality of its exercise." During the onset of the epileptic paroxysms there is over-action of the nervous centres, and such over-action is the proximate cause of the paroxysms.

"In the first place, nutrition is affected dynamically and temporarily; there is no recognisable departure from textural integrity, there is merely the difference that exists in health and in all organs between action, over-action, and repose; after a time, and by frequent repetition of attacks, the changes, induced temporarily, become permanent; and the texture, which is the product of foregone nutrition-processes, is altered statically and persistently. Nutrition-change is altered, it is more rapid than in health; and the result is, as van der Kolk has shown, enlargement of the capillaries, and fatty or granular degeneration of the medulla." (p. 250.)

Epilepsy is, according to the author, to be *diagnosed* from, 1, simulated epilepsy; 2, syncope; 3, hysteria; 4, catalepsy; 5, eccentric convulsions; 6, convulsions that are the expression of diathetic diseases; 7, organic lesions of the cerebral and spinal centres.

The points most reliable in the detection of simulated epilepsy are, the condition of the skin, the dusky and pallid tint of which in the genuine affection cannot be assumed, and the dilated state of the pupil. In syncope the loss of consciousness is not absolute, nor so sudden as in epilepsy. There is usually some immediate cause of the sensation, and the horizontal position affords speedy relief.

As to the *prognosis* of the disease, the author gives the result of his experience in the following passage:

"Of 115 cases of chronic convulsive disease which have fallen under my own care, all of which more or less closely resembled epilepsy—many of which had been termed epilepsy, and had been treated as such for several years—there were twenty-one individuals who perfectly recovered—i.e., eighteen per cent. Of these 115 cases there were 81 examples of true epilepsy, but of the epileptics only 8 absolutely recovered, equalling only ten per cent. Of the cases not truly epileptic, there were 23 which belonged to the category of organic cerebral disease, or so-called 'symptomatic epilepsy;' of these 10 were cured, 7 ameliorated, 4 were lost sight of, and 2 remained in *statu quo*. In 43 per cent., therefore, of so-called 'symptomatic epilepsy,' a cure was effected." (p. 312.)

"The danger to life in the epileptic is a somewhat remote contingency. It rarely happens that the fits have proved directly fatal. Instances are to be found of death from cardiac disease and from cerebral complication, and I have known a case in which a pauper was said to have died in an attack, but the real cause of asphyxial convulsions and of death in whose case was discovered, *postmortem*, to be a piece of meat sticking in the rima glottidis.

"Again, so far as my own observation extends, the attacks rarely leave behind them, in true epilepsy, either paralysis or other change of motility; and still less frequent are any notable injuries to the organs or functions of special sense." (p. 317.)

In the *treatment* of the disease, chloroform, according to Dr. Reynolds, appears to delay the attacks for a time, but to exert no permanently good influence. Bromide of potassium, recommended by Sir Charles Locock in those cases of epilepsy where the attacks recur only at the menstrual periods, has been found by the author to be of much use in some cases of hysteria, though since Sir Charles's suggestion appeared, he has not met with a case in which epileptic seizures were limited absolutely to the menstrual period.

Dr. Reynolds is opposed to the employment of issues and setons in the treatment of idiopathic epilepsy. "In cases of chronic meningitis, which have been confounded with epilepsy, both these modes of treatment have proved of service." The shower-bath he has never seen productive of any definite good, but often of very distinct harm. "Sitz-baths and sponging baths of a few seconds' duration have generally in this, as in many other maladies, been grateful to the sufferers, and of value in increasing the feeling of health, the enjoyment of food, and the capacity for exercise."

In the *mental* treatment, if we may so term it, of the disease, the most important point is to find "some occupation in which the patient takes interest, which requires some concentration of mind, but not much thought, and which may occupy many hours of the day. Drawing and painting, under the conditions mentioned, are of great value; the fabrication of various articles, amusement with a fernery, garden, vivarium, &c., may also be recommended."

We have thus touched upon some of the leading points in Dr. Reynolds' volume sufficiently to give our readers a general idea of its arrangement and of the nature of its contents. Epilepsy has recently been so frequently brought under our consideration, that a more detailed examination of the present work appeared to be unnecessary. We have already expressed our opinion of its value, not only as a book of reference, but also as containing some original philosophical reflections and useful practical suggestions.

Review IV.

On the various Contrivances by which British and Foreign Orchids are Fertilized by Insects; and on the good Effects of Intercrossing. By Charles Darwin, M.A., F.R.S., &c. With Illustrations.—*London.* pp. 365.

Gilbert White's objections to botany, or rather to botanists, on the score that too much attention was paid to the mere systematic classification of plants, and too little study bestowed on the laws of vegetation and the practical application of botanical knowledge to the wants of man, still continue in force, though possibly to a less extent than at the time when the amiable vicar of Selborne penned his well-known letters.

The elder De Candolle, by giving his sanction to the botanical essays of Goethe, did much to promote the study of morphology, and thereby