

Possibly a little more chemistry would have been welcome to the lawyer. Perhaps, also, the chemist would like to see a fuller discussion of the principles of evidence after the manner adopted on p. 245, where not only the practice but the reasons for it are adduced. Precedents, however, bulk largely in legal work; and if the chemist, from his training and mental leanings, would rather have had more principle and less precedent, it does not follow that he would have found it of more actual utility. Nevertheless, the author might note these suggestions in view of a second edition. In any case, the book can be recommended as a helpful and interesting one to those for whom it is written. C. SIMMONDS.

THE MORPHIA HABIT.

The Morphia Habit and its Voluntary Renunciation. A Personal Relation of a Suppression after Twenty-five Years' Addiction. By Dr. Oscar Jennings. Pp. x+492. (London: Baillière, Tindall and Cox, 1909.) Price 7s. 6d. net.

IT were well, if time permitted, that each physician should experience in his own person (meaning thereby his whole person, psyche and soma) a few typical examples of the complaints which he will have to treat. He would thus acquire an insight into disease obtainable in no other way, and with Æneas might exclaim:—

“Quæque ipse miserrima vidi,
Et quorum pars magna fui.”

This apt quotation is found on the title-page of Dr. Jennings's book, and its aptness lies precisely in this, that the book includes, in the shape of a diary, the record, from within, of the overcoming of an addiction to morphia of twenty-five years' standing. Of habit, pernicious, no more typical example could have been selected than the morphia habit, and this treatise presents us with a valuable contribution to the study and solution of a very serious problem.

Dr. Jennings approaches the problem by two paths, the psychologic and the somatic, in this order. His primary demand is that the patient shall bring, on his part, the desire, the intention, the will (what remains of it), to get well; that before all else the psyche point in the right direction. His next demand is that the physician shall, on his part, supply encouragement, and shall instil into the patient, first a full confidence in himself as guide, and then a spirit of self-reliance; or the order may be reversed, it does not matter so long as hope, trust, and self-reliance find an entry. He urges, and it must be clear, that the best of all cures can only be upon these lines, and that cures which have been effected without the patient's willing cooperation, *a fortiori*, against his will, must be inferior in value. To seek a simile, the willing and the unwilling cure may be likened to the cure of an infectious disease, brought about, on the one hand, by the successful resistance of the patient's own tissues, on the other, by the aid of antidotal powers (anti-toxins) which the efforts of alien tissues have supplied. We have reason to believe that the immunity acquired by the former is the more complete and the more lasting.

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Dr. Jennings, however, is not content with teaching a reasonable doctrine; he shows further, by his record of successful cases, the feasibility of the plan which he advocates. With much practical wisdom, he will not allow us to forget that the problem has a somatic side; he is too good a physiologist not to see that to deny this is to deny physiology, “the solid ground of nature”; also that to recognise a somatic side, yet to deny the possibility of material access to the body, as by the medicaments, is to deny physiology once again, since pharmacology is but a department of physiology. On this subject, the value of drugs in the treatment of the morphia habit, the author has much of interest to tell; in particular he insists upon “his therapeutic triad,” the use, namely, of heart tonics—of alkalies, especially Vichy water—and of hydropathic measures, notably the Turkish bath. His views do not always fit in with pharmacological teaching, *e.g.* in the value which he assigns to sparteine, but here the last word must rest with the clinician.

Dr. Jennings's dietetic handling of his subject strikes the reviewer as interesting and original, and as mindful of the dietetic wisdom of the Hippocratic aphorisms.

By means dietetic and medicinal, as set forth by the author, the stress of the bodily cravings is eased and the enfeebled will enabled to maintain its operation; maintaining its operation, volition, according to the law of growth, is gradually built up, the habit of right operation becoming ingrained. Thus in the re-education of the will, the great force of custom is called upon to help to overthrow that dominance which the great force of custom had established—“Certa viriliter”; said S. Thomas à Kempis, “consuetudo consuetudine vincitur.” The victim of habit may take these words to heart, and in this record of Dr. Jennings find further encouragement to persevere, and along what lines to seek and find health.

SCHOOL GARDENS.

Practical School Gardening. By P. Elford and Samuel Heaton. Pp. 224. (Oxford: Clarendon Press, 1909.) Price 2s. net.

FEW educational movements of recent years have produced a more copious crop of text-books, hand-books, readers, and so on, than what is called nature-study. This result is not quite in harmony with the spirit of the movement, which is to avoid the book and study the thing. The child is to use his own eyes, to observe the thing itself in its proper habitat, and in relation to its ordinary surroundings; from these observations he is to make deductions, and thus he is to be trained to think. Of course, the scheme has to be modified to suit the exigencies of the time-table, but it has been shown to work and to give country children a living interest in their surroundings, besides providing the teacher with a powerful engine for education. The final success of the method depends, however, on how far the teacher himself possesses the proper habit of mind, and how far he has overcome the dependence on text-books

which has been fostered by his training and the habit, born of tradition and the old method of education, of looking a thing up in a book rather than discovering it by observation. One of the consequences of the movement, and one which we hope will prove permanent, has been the establishment of school gardens. Anyone who knows village schools where gardens exist knows the pride that teachers and scholars alike take in them, and their great value from every point of view. A school garden can be made to furnish a vast amount of matter for school lessons, and in addition it instils into the boys that love of gardening so characteristic of the English life of to-day.

The teacher is bound to have text-book help in managing his garden; the proper arrangement of his crops, the times of sowing, the pests or diseases likely to be troublesome, are all matters in which he needs guidance. He cannot afford to make mistakes, his scholars' parents are sometimes expert gardeners, always critical, and ever ready to derive amusement from his little efforts. The book before us will be found very useful in this respect by the teacher, and the instructions for working are quite clear and have been tested with satisfactory results in the school gardens of Oxfordshire. The book is copiously illustrated; indeed, we find a whole page devoted to the photograph of a wheelbarrow and an ordinary watering can. The teacher who intelligently follows the instruction given may quite expect his garden to be successful from a horticultural point of view, and will have little to fear from the carping village critics.

But we do not think this book represents the last word on the subject. Not enough is made of the garden as a means of education, in spite of a highly suggestive chapter by Mr. Meadon on "Discovery Lessons," which shows a full appreciation of the possibilities in this direction. We should like to have seen the book dominated by the spirit of the *experimenter*; instead, we find it dominated by the spirit of the horticultural *instructor*, whose personality comes out on every page, even to the amiable weakness for the long Latin name that we ever associate with the professed horticulturist. It must be admitted, however, that there are difficulties in the way of an experimental school garden. A garden often becomes much too personal an affair to be made the subject of experiment even by the man of science, and how shall the village schoolmaster treat it any more impersonally? The spirit of competition is there; each boy wishes his plot to be the best, and the teacher wishes the garden as a whole to be at least as good as the allotments; experiments, therefore, cannot come in, as he has no room for failures. We are aware, of course, that some schools make trials with artificial manures, but the schemes that we have seen have been entirely empirical, and designed to increase the crop rather than to yield information. We believe that ultimately the school garden will be as successful educationally as it now is horticulturally, and although the present book does little towards helping on this reform it will be found of real value for the school garden as at present conducted. E. J. RUSSELL.

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ELECTRIC MOTORS.

The Alternating Current Commutator Motor and the Leakage of Induction Motors. By Dr. Rudolf Goldschmidt. Pp. viii+210. (London: The Electrician Printing and Publishing Co., Ltd., 1909.) Price 6s. 6d. net.

THOSE who are acquainted with Dr. Goldschmidt's writings will open this book with the expectation of finding a very intricate subject treated in clear and simple style, and this expectation will be fully realised. There is no padding, and consequently the reader must not skip, but if he follows the author conscientiously step by step in his close and methodical reasoning he will find his labour amply repaid.

A good deal has been written about the commutator motor, but we have never come across a treatise written so clearly and in such simple language. The simplicity of treatment is not attained by making inadmissible propositions. It is true the author takes us first through the theory of the so-called perfect motor, having no losses and no leakage, but after establishing the main principles which must count in any theory he goes on to introduce step by step those disturbing influences which are inseparable from the practically possible motor, and at every step he finds an easy way of taking account of these influences. The treatment is in the main graphical, and the author's position in the old controversy between the analytical and graphical school is shown by a passage on p. 30, which runs as follows:—

"The preference for the mathematical or graphical representation is a matter of taste, but I think that many people will agree with me that a very simple diagram, as the present one, will lead more quickly to a clear result, and can more easily be borne in mind, than a more or less complicated formula."

The first part of the book, dealing with the commutator motor, contains six chapters—introductory, the series motor, the repulsion motor, the Latour-Winter-Eichberg motor, some special types, and finally examples of motors, with views and curves of performance, but not many technical data of construction. The only example illustrated by dimensioned working drawings is a 60-h.p. motor made by the Oerlikon Co. The brevity of style is certainly commendable, but in some places it is carried too far. Thus on p. 44, when dealing with the minimum flux required for sparkless commutation, the author gives without proof a formula in which the total flux, that is, the flux per pole multiplied by the number of pairs of poles, is shown to be proportional to the square root of a fraction containing in the nominator the product, horse-power, volts, and length of armature, and in the denominator the product revolutions per minute and diameter of armature. As he says that this formula "will do good service in formulating a general idea of the amount of flux required," we may fairly expect that he should give a proof of it. Another matter in which a somewhat fuller treatment might well be expected is the Deri (not Dery, as the author writes) motor. One page can hardly be considered sufficient to deal with a motor which presents so many interesting features, and is also, from