

laboratories which form an integral part of many industrial establishments on the continent.

Further, here at last we have from one who is both a practical man of affairs and a successful student of science, a distinct endowment of research such as was advocated now many years ago to deaf ears.

We believe that Dr. Mond's noble endowment, for which all true lovers of science must thank him, will have far-reaching effects.

THE HISTOLOGICAL INVESTIGATION OF DISEASE.

Methods of Pathological Histology. By C. von Kahlen. Translated and edited by H. Morley Fletcher, M.D. With an introduction by G. Sims Woodhead, M.D. (London: Macmillan, 1894.)

HISTOLOGICAL methods have become so perfected during recent years that we are apt to forget that there was an age of discovery when microtomes, special dyes, celloidin and paraffin were unknown. In the days of Max Schultze, of Schwann and Virchow, tissues were cut free-hand with an ordinary razor; for the purpose of embedding, pieces of carrot and liver were used, and stains were not dreamt of. Solutions of salt, acetic and mineral acids and iodine were the only reagents employed, and gradually carmine came in use. Yet that age turned out its heroes in such men as von Bär, Remak, Schwann, Max Schultze, Johannes Müller and Virchow, who with tools and media which we are unable to use now, observed appearances and processes which have remained the corner-stones of normal and morbid histology. We are apt to forget their deeds as being antiquated. Gradually stains were introduced, and these led to fresh discoveries. Dr. Klein's work on histology, begun in Stricker's laboratory, is a permanent testimony of what a practised hand can do without our modern microtomes, embedding methods, and multitude of stains. Hæmatoxyline and carmine were the only dyes used. Since then various kinds of microtomes, simple and complicated, have been designed, and every laboratory possesses apparatus for cutting in paraffin, celloidin or ice, and instead of two simple stains, almost numberless reagents are a necessity for the modern worker.

On reading Dr. Morley Fletcher's edition of von Kahlen's book on "Methods of Pathological Histology," we cannot help being struck with the great strides made in histological *technique*. While fully acknowledging the brilliant work of our predecessors, and even regretting that the simpler methods of examination of unstained tissues have practically been forgotten, we feel that every histologist, however modest, should make himself acquainted with the *ars technica* of microtomy. With simple methods it is possible only to study simple processes, and these often with difficulty. The minute structure of the nervous tissues in health or disease, the pathological changes of the blood or of infective lesions, can only be approached, if the necessary staining methods have been fully mastered. Stains are chemical reagents, and their action must be properly appreciated. There exists in our midst a large number of "histologists" who have accustomed themselves to one stain, and whatever comes into their hands is treated in the same manner,

and they even acknowledge their inability of recognising tissues or lesions stained in any other way. Carmine specimens often trouble those who have become the slaves of hæmatoxyline. We cannot sympathise with them; their methods are at fault, and they have not appreciated the value and *raison d'être* of staining. Many great and important discoveries have been made by morbid histologists such as Weigert, Ehrlich, and others, by methods which at first sight appear to be empirical, but are based on sound chemical principles, discoveries which have proved as useful to the physiologist and anatomist as to the pathologist. It is von Kahlen's merit to have collected the most important histological methods, previously scattered and hidden away in archives and journals, and thus to have made them more accessible; and we are indebted to Dr. Morley Fletcher for having given us a readable English translation of a work which rightly enjoys great popularity abroad.

The few critical remarks which we shall make apply chiefly to the German original. The methods of embedding in paraffin and celloidin, and of preparing sections by means of freezing, are well described, and if to some the hints given appear incomplete, it should be remembered that as the work is meant to be a guide for the pathologist, some knowledge of histological methods may reasonably be assumed to exist. The Cambridge rocking microtome was deserving of more than a short reference, at least in an English edition, for with us paraffin is much more *en vogue* for delicate work than celloidin. A few notes might have been added stating for what tissues and stains each embedding method should be used, for the inexperienced have generally difficulties in deciding how to proceed with tissues supplied to them for examination. For the staining of bacteria in tissues, for instance, the paraffin method is the only satisfactory one. The "metal lifter" is a piece of rough apparatus we object to, and recommend a strip of cigarette paper as being the most delicate carrier for transferring sections from water or clearing medium to the slide. Under "double staining" no allusion is made to acid fuchsine, a most selective and beautiful stain. We have little to add to the section on bacterial staining, but venture to offer an important suggestion. When examining for bacteria in albuminous or gelatinous media, it is advisable to remove the ground substance by means of acetic acid. From personal experience we do not agree that Gabbet's method is the best for the detection of tubercle bacilli in sputum. Ziehl's and Van Ketel's methods are far more certain. In the latter the bacteria are previously treated with carbolic acid, which destroys them, so that there is no danger of disseminating infective matter, while at the same time the staining power of the micro-organisms is greatly increased. Carbolic acid should be added to all microbic material, so as to avoid all possible risk of infection. Moreover, treated in this manner any material may be kept indefinitely for histological examination.

The chapter on blood examination is excellent, and must prove extremely useful also to the physician. The systematic study of the blood at the bedside is still too much neglected in this country, though in cases of anæmia it is of the utmost importance, and without a

complete knowledge of the same, a certain diagnosis is often impossible. For this reason we should have liked to see a fuller account of the methods of examining blood for the *plasmodium malariae*, for we feel certain that the inexperienced would not succeed with the meagre instructions given on page 109. The foot-note on page 115 is not clear, if correct. For purposes of simple diagnosis cover-glass preparations of blood should be stained "with a solution of alcohol-soluble eosine (5 grammes in 100 cc. of 50 per cent. alcohol)," and not "with a 50 per cent. alcoholic solution of eosine," which would overstain everything. The summary of the methods used for the histological examination of the nervous system is perhaps the best part of the book.

So far our remarks apply to the work of von Kahliden. Dr. Morley Fletcher as translator and editor has done his share creditably. The editorial notes on the whole will be found useful, and in future editions we would suggest to raise them from their position at the foot of the page, and incorporate them with the text, at the same time adding others, so as to render the book entirely in keeping with English histological teaching. The idea of a book for the pathologist is so good that it should stimulate the editor to perfect it, all the more as there is no other work in the English language which serves the same purpose. Dr. Sims Woodhead's well-known manual will always remain a favourite book with the ordinary student, but as a compendium of descriptive morbid histology rather than a laboratory guide.

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NATAL ASTROLOGY.

A Treatise of Natal Astrology. By G. Wilde and J. Dodson. To which is appended "The Soul and the Stars," By A. G. Trench. (Halifax, Yorks: The Occult Book Company, 1892.)

THREE authors have therefore combined to produce this work; and to accept a brief, either on behalf of, or in opposition to, a work exhibiting so much erudition, is to undertake a heavy responsibility. The peculiarity of your astrologer is that he is so heartily in earnest. He, with a faith that no disaster can overturn or contradiction disturb, believes his results are as certain and as unquestionable as the astronomy on which he relies for his calculations and configurations. He, worthy man, asks to be taken seriously, and society as a rule declines to accept his deductions and explanations otherwise than as literary curiosities. But his day of triumph and reward may be approaching, for in the preface it is distinctly asserted that the production (and presumably the sale) of this kind of literature is on the increase. This is curious, if it be true. What have the promoters of primary education and the machinery of the School Board to say to the assertion that "the literature of astrology is to-day more perused than that of any other natural science"? The authors cannot be angry with anyone for saying that such an assertion is as true as that the positions of the planets and luminaries decide the health of a person (p. 86).

It is only honest to confess our inability to do justice to the aims and ambitions of those who read the future

in the skies. We need an exponent on whom the mantle of the late Prof. De Morgan has fallen. Of men who have enjoyed a reputation for sound mathematical knowledge, he is the only one, that occurs to us at the present moment, who has found leisure or inducement to make a serious study of the peculiar tenets of the astrologer. And after an examination, which was no doubt thorough and exhaustive, it is believed that he decided that there was no ground for the conclusions drawn by the students of horoscopes, a decision to the truth of which many will subscribe, who have not the same means and the same knowledge to guide them. But we have been told, and let us hasten to add the fact for the satisfaction of the votaries to this "science," that he did not pronounce this sentence till after three months' study. If three months were necessary to convince a De Morgan of the uselessness of further prosecution of this occult inquiry, it need be no wonder that a much longer period, embracing possibly a whole life-time, is in some cases necessary before a less cultivated and less gifted man can escape from the ensnaring meshes of a fascinating delusion. The authors of this book have not yet issued from the realms of darkness and recognised the inquiry as a curious, it may be an absorbing, but certainly a misleading study. Nor are they likely to gain enlightenment, for their methods of inquiry and examination are imperfect and deceptive. Their process seems to consist in the examination of many cases, and the exhibition of those which favour, or seem to favour, the conclusions drawn from the horoscope. The story of Dryden's sons is served up for our edification, and a tale is told of a gentleman who married at the age of fifty and went to Italy, which it is thought by the authors ought to carry conviction to the unconvinced. How many men in a year do marry at fifty and go to Italy for a honeymoon? But averages or coincidences are alike disregarded by the student of horoscopes. "The successes of a science," say they, "establish it, while the failures cannot disprove it. The practice of medicine is recognised because of its successes, and not rejected because of its failures." This is a very curious remark, and apparently an oversight by the authors. What success or what failure can there be for medical science when men's health and condition are regulated by the position of the stars and planets?

But apart from the question of the usefulness or the worth of astrology, about which the authors wax eloquent, and with whom of course it is absolutely useless to argue, they have produced a book not without interest. Astrology is a study which has occupied men's minds for many ages, much time and ingenuity have been devoted to it, and the student of science or of human nature might very well like to know what were the methods by which these men worked, what was the character or the measure of the success that supported them in their labours, and urged them on, in days when planetary ephemerides did not exist and astronomical calculation must have been difficult. Kepler is perfectly frank about his horoscopes—he worked them for his daily bread, and despised himself for doing it; but others certainly looked for success, undaunted by disappointment and failure. "Horoscopes," and "cusps," and "houses," and "malefics," and what not, constitute a jargon that many an one might like to have explained