extent. On the other hand, of the twelve cases which have occurred since (not including that under treatment) none died, and only two have had paralysis.

Since I thought of making this communication I have seen a letter from Dr N. Evans, in the "Medical Times and Gazette," of 27th Oct., in which the report of an interesting case is given, which corroborates very strongly my impression that the permanganate of potash may be safely allowed to exercise a remarkably beneficial effect when used perseveringly, and that even in the worst cases a cure may be hoped for, provided the larynx has not been affected.

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**Part Second.**

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**REVIEWS.**

*A Treatise on the Principles and Practice of Ophthalmic Medicine and Surgery.* By T. Wharton Jones, F.R.S., Professor of Ophthalmic Medicine and Surgery in University College, London; Ophthalmic Surgeon to the Hospital, etc. Third Edition. Pp. 806. London: John Churchill and Sons: 1865.

This is now one of the most voluminous of Churchill's series of Manuals. But from its very growth in bulk it has become a rather unwieldy text-book, and with an increased amount of information, there is, perhaps, an increased difficulty in getting what is desired: There has of late, no doubt, been a great advance in our knowledge of the nature and treatment of many diseases of the eye, more particularly diseases of accommodation and refraction, and operations for cataract, which require to be introduced into any work pretending to be a treatise or text-book on the subject; but still we are of opinion that a good text-book for the student, and even book of reference for the medical practitioner, might readily be written so condensed as to require little more than one-half the space occupied in Mr Jones's treatise. Indeed, one and perhaps the chief reason why this manual extends to such a size is, that the arrangement and classification of diseases is such as to render a large amount of repetition unavoidable, which, especially to a student, is annoying and confusing. Mr Jones classifies diseases chiefly according to their pathological nature, instead of according to their locality or seat; and hence inflammatory affections are separated from the causes to which they may be owing, such as wounds, and from the effects they produce, such as hypertrophy, atrophy, etc. By far the simplest method of studying or describing diseases of the eye, is to take each structure in turn, and consider the various
diseases to which it is subject, and this is usually the basis of classification in this country. Another considerable source of repetition, is the unnecessary extent to which diseases have been subdivided according to the circumstances under which they have occurred, or the constitution of the patient. For example, we are favoured with a description of morbillous, scarlatinous, and variolous ophthalmia—as if these were distinct inflammations; while, as every one acquainted with the subject knows, and as Mr Wharton Jones himself declares, the practitioner must "be prepared to find that inflammation more or less different in kind in different cases of the same disease, and requiring, therefore, different modes of treatment—modes of treatment, however, not differing from those indicated for the particular species or form of inflammation, except in so far as may be necessitated by the presence of the general disease." In fact, such diseases render the patient more susceptible to different inflammatory affections of the eye; but these affections do not in the slightest differ in symptoms, progress, or treatment, from others which have no such origin. What good, therefore, results from such a sub-division? All that we require to know is, that such and such affections frequently occur after measles, scarlatina, or small-pox. A considerable amount of space is also occupied by a detailed description of diseases which are of excessively rare occurrence, and of operations and methods of treatment which are in disuse.

Ophthalmology is proverbially rich in technical terms. There are few diseases which do not possess three or four different names, and all prominent symptoms are equally well cared for. Nevertheless Mr Jones would increase our already abundant supply, by furnishing us with posterior-internal ophthalmia; 1st, with serous effusion (this, from the symptoms detailed, would, by most modern authors, be termed glaucoma); 2d, with plastic effusion (choroiditis); 3d, affecting chiefly the optic nerve (neuritis optica); 4th, "morbid alterations of structure-effects of posterior internal ophthalmia" (under this head are included almost all the diseased conditions with which the ophthalmoscope has made us familiar); 5th, scrofulous (sclerotico-choroiditis with staphyloma); 6th, syphilitic (syphilitic retinitis); and, 7th, arthritic (glaucoma). We do not consider this attempt at classification any improvement.

To proceed, however, from these general observations to the particular contents of the work, the first chapter on ophthalmoscopy gives a very good account of the different methods of inspecting the eye, including the exploration of the anterior segment of the organ by oblique illumination and the catoptric test, the examination of the field of vision, the use of the ophthalmoscope, etc. (The few pages on morbid ophthalmoscopic appearances should, to avoid repetition, have been reserved for the chapter on the diseases described.) The various forms of local remedies, and their method of applica-
tion next come under consideration, followed by some hints regarding the abstraction of blood, the evulsion of eye-lashes, and the removal of foreign bodies from the oculo-palpebral fold of conjunctiva. Under the head of abstraction of blood, reference might, with advantage, have been made to the use of the artificial leech for this purpose,—a modified form of cupping apparatus which is extensively used by continental oculists, and answers its purpose admirably. We may also mention we were not a little startled at a statement that occurs here, to the effect that “half-a-dozen or a dozen leeches is the average number applied around one eye in a grown-up person.” As far as our own observation and experience go, we would consider one-half that number a large average at the present time.

These preliminary subjects occupy ninety-six pages, and the rest of the book is devoted to a description of diseases of the eye proper, and their treatment; taking in succession, inflammatory affections, partial and general enlargements, dropsical effusions, extravasations of blood, hydatids, cataract, operations for artificial pupil, etc. Here we would again remark that it would prevent a great deal of confusion and useless repetition, were the general description given of inflammation of each tissue of the eyeball either very much shortened, and made immediately to precede the individual inflammatory affections of that tissue, or altogether dispensed with. Thus, deep-seated inflammations of the eye are described in three different parts of the book. If we look up Retinitis in the index, we are referred to pages 56, 126, and 231, and all through the book the reader is constantly reminded that further information on that subject may be obtained in some other chapter. We cannot follow the author into a consideration of each topic, and will content ourselves with making a few remarks on certain points on which a diversity of opinion may exist, and pointing out some important omissions.

While treating of pustular inflammation of the cornea, the author enters upon a discussion regarding the nature of inflammation, and, from experiments and observations, concludes that it consists in, or depends upon, a constriction of the small arteries, which allows of the blood-corpuscles to accumulate in the capillaries and venous radicles. It is to be observed the author views congestion as the distinctive symptom of inflammation altogether apart from exudation, a view which few pathologists of the present day consider correct. It were out of place to enter upon a discussion of this subject in reviewing a work on special diseases, but we may be permitted to allude to the action of atropine, which he cites in favour of his theory, and which, we are of opinion, rather serves to controvert it. The author has observed that the application of a solution of the sulphate of atropine to the frog’s web occasions constriction of the arteries, and gives rise to a congested condition of the capillaries and veins, and he explains on this ground the aggravation of symp-
toms which results when this substance is applied to a glaucomatous eye in which there is great venous congestion. But it must be remembered that the external venous congestion in glaucoma arises from the mechanical pressure (from increased secretion of vitreous humour) to which the deeper vessels are subjected preventing the return of blood by its natural channels, and thus forcing it to flow by the superficial vessels. In such a condition as this, it is not to be expected that atropine would be capable of exerting any beneficial effect by constriction of the vessels; but, on the contrary, that it would, by its paralytic effect on the power of accommodation, render vision more confused. If, however, we watch the effect of atropine in cases of acute inflammation of the cornea or iris we cannot but be struck by the marked effect it has in reducing the inflammatory symptoms; which, were Mr Jones's theory correct, could only be explained on homoeopathic principles.

It was with some difficulty that we persuaded ourselves that Mr Wharton Jones viewed granular lids as a species of purulent ophthalmia,—a doctrine we consider essentially erroneous. We do not for a moment deny that granular conjunctiva may follow purulent ophthalmia; but, on the other hand, we have abundant instances of this disease in persons who have never had purulent ophthalmia, and in whom the granular condition has been slowly developed without exhibiting any of the symptoms of the purulent affection. How rare, too, is it to find a granular state of the conjunctiva, where an eye has been even seriously injured by the severity of an attack of purulent inflammation? We would also ask how it is to be explained that the super-induction of purulent ophthalmia sometimes cures aggravated cases of granular lids; unless, indeed, a doctrine be adopted similar to that upon which the practice of syphilization rests. From the erroneous views thus taken of the nature of granular lids, the chapter on Egyptian ophthalmia gives a description of an inflammation which may attain to three different degrees of severity, and which, while exhibiting characters belonging to both purulent ophthalmia and granular lids, can certainly not be taken as accurately typical of either.

In the treatment of iritis, the author places the greatest confidence in bleeding and mercurialization. Indeed, so far does he rely upon the latter means of treatment, that, even in scrofulous iritis (one of his sub-divisions), he recommends its careful administration till the gums are affected. Now, while we are not of the number of those who would deprecate the use of mercury in all cases of iritis, but, on the contrary, are of opinion that in certain sthenic cases it may be beneficially employed, we should certainly be very much averse to its administration in iritis occurring in scrofulous subjects. We consider Mr Jones ought to have alluded to the fact, that very opposite views are held upon this point, and to have referred to the large number of cases that have been published, in which neither mercury nor bleeding had been employed, and yet in which most
favourable results were obtained. Mr Zachariah Laurence, for example, published a very interesting series of successful cases in which opium was almost the only internal remedy used. What of itself might serve somewhat to shake one's belief in the universally beneficial action of mercury, is the fact, that iritis sometimes occurs in a patient already under the influence of that drug. Indeed, from the wonderful amelioration we have observed in incipient cases from the local application of atropine and belladonna, we are inclined to place far more reliance upon these local means than upon any general system of treatment. The employment of iridectomy in cases of recurrent iritis is only cursorily referred to, and its use in preventing a relapse considered problematical,—a case being narrated in which "iridectomy" did not secure the eyes against a first attack of iritis. But in the operation was the portion of iris removed from its ciliary attachment? for that is a necessary point in operating for recurrent iritis, while it is not essential in performing excision of a portion of iris for artificial pupil, for which object the operation was performed in this case. The operation of iridectomy is certainly not infallible in preventing a recurrence of the inflammation, but undoubtedly succeeds in a considerable number of cases, and deserves more consideration than is accorded to it in the passage we refer to. We were amused by the restrictions placed on the use of iodide of potassium in the following passage: "Iodide of potassium may be also tried under such circumstances (when mercury does not exert its usual curative effects), provided the pupil is not obstructed with lymph, for in this case the effect of the iodide will be to consolidate and fix the lymph so as to arrest the absorption of it." This he explains at another place to be due to the removal of the mercury from the system by the iodide!

One of the greatest improvements that have been effected in the operative department of ophthalmology during the last few years, is undoubtedly the modification of the operation of abscission of the front of the eyeball, introduced by Sir W. Wilde of Dublin and Mr Critchett of London, which consists in the introduction of needles armed with ligatures round the base of the part to be abscised prior to its removal; so that, immediately thereafter, the edges of the wound may be brought into apposition, the vitreous humour prevented from escaping, and a good stump obtained,—the result contrasting strongly with the old method of operating, in which the vitreous humour was allowed to escape, and the wound to heal slowly by granulation. We regretted to find no reference whatever made to this improved method of operating.

Under cataract, we find a long diagnostical table given, displaying "the principal points of difference between cataract on the one hand, and glaucoma with amaurosis on the other." As these diseases possess very few symptoms in common, such a table is unnecessary; it is perhaps serviceable, however, in giving in a concise form the leading characters of these affections. The removal of
hard cataracts through a linear incision in the cornea, (with the assistance of a scoop or modified curette,) in combination with iridectomy as first recommended by Schuft and von Graefe, and subsequently adopted and extensively practised (with somewhat altered instruments) by Bowman, Critchett, and others in London, is evidently not approved of by Mr Jones, as the whole subject is disposed of in eight and a-half lines! When we reflect that published reports of cases show that the results obtained from this operation may stand a favourable comparison with the ordinary method of flap extraction, a little more consideration might surely be given to it. This does not arise from want of space, as we find more than two pages allotted to the operation of reclination by corneal puncturation,—an operation which, to quote the author's own words, "has never come into use"! If we desire information on the removal of cataract by suction—a method of operating recently revived—where shall we find it? We have vainly searched for the least reference to it. Professor Sperino of Turin published, a few years ago, a considerable work on paracentesis of the cornea, which operation (repeatedly performed) he declared to possess, among numerous other remedial properties, the power of staying the progress, and even of curing, certain cases of cataract (especially the senile variety in its incipient stage). He supported his statements by adducing a large number of cases, in some of which great benefit was apparently experienced. Even if cataract could be thus cured, it is very doubtful whether a prolonged course of operative treatment such as this would be often had recourse to, but still it would be right to mention the possibility of curing cataract by such means. We cannot speak from personal experience on the point, but from the position held by Professor Sperino, his statements are worthy of notice. What, perhaps, has been most effectual in increasing the percentage of cures in cataract operations, is the improvement in the after-treatment; more especially, the employment of the elastic-pressure bandage of von Graefe, by which the lips of the wound are kept in accurate apposition, the motions of the eyes restrained, and the evil effects arising from coughing or straining of any kind, very much diminished. Upon this point the Manual is sadly deficient. In the paragraph on cataract glasses we find the statement, that the crystalline body contributes comparatively little to the convergence of the rays of light passing to a focus on the retina. If so, why is it that such strong lenses as from three to four inches focus are necessary for distinct vision after the lens is removed? How, too, can one explain the great alteration in the refractive power of the eye, which an increased curvature of the lens occasions in accommodating the eye to see near objects distinctly (equal to an artificial lens of five inches focus)?

That the power of adjusting the eye for distinct vision of near and distant objects depends upon an alteration in the curvature of the lens, Helmholtz's experiments have placed beyond a doubt;
but the exact manner in which this alteration in the curvature of
the lens is effected is still a subject of controversy. The view
most generally entertained at the present time is, that when the
eye is at rest, or the power of accommodation paralyzed, the eye is
adjusted for distant objects, and that, when near objects require to
be seen, the curvature of the lens is increased by contraction of the
ciliary (or tensor choroideæ) muscle; vision being at the same time
rendered more distinct by a coincident contraction of the pupil.
Mr Jones, however, maintains that the eye at rest is adjusted for
the perception of objects at an intermediate distance, and that for
near or very distant vision the accommodative power must be called
into action; the accommodation for near objects being effected by
the circular, that for distant objects by the radiating fibres of the
ciliary muscle,—a view held by some continental authorities. This
view chiefly rests on the fact that the lens, during adjustment of
the eye for distant vision, has been found by Helmholtz to be
thinner than it is in the dead eye. But when we consider that the
lens, when relieved from the restraint of its capsule, has a tendency
to assume the globular form, and that after death there is great
relaxation of the tissues, favouring this tendency—this fact loses its
significance. Besides, if the eye when at rest were adjusted to
some intermediate point, one would expect in cases of paralysis of
accommodation (such as occurs after diphtheria, long-continued
fever, and other debilitating diseases), to find the patient's sight
most distinct at a moderate distance from the eye, which is not the
case. Mr Jones considers the radiating fibres of the ciliary muscle
to be under the influence of the sympathetic; consequently, in cases
where the sympathetic is paralyzed from pressure of tumours in the
neck or other causes, we should find the perception of distant
objects defective, but improved by the use of concave glasses,
which, so far as our observation goes, is not the case. It is well
known that the range or extent of accommodation gradually
diminishes as age advances, obliging most old people to use spec-
tacles. This arises chiefly from an increased firmness or rigidity
of the lens. Now, if accommodation were of a twofold nature, we
would expect our perception of distant as well as near objects to
become confused as age advances, and that to see remote objects
clearly, concave glasses should be worn. Daily experience tells us
that this does not occur.

The effect of atropine upon the accommodation which is generally
ascribed to paralysis, Mr Jones views as the effect of stimulation
through the sympathetic of the radiating fibres of the ciliary
muscle, and, in like manner, its action on the pupil as due to
stimulation of the radiating, rather than to paralysis of the circular,
fibres of the iris. We have not space to discuss this subject
here; his views, although apparently supported by some facts
which he adduces, are not those held by most oculists or physiol-
gists. We believe the dilatation of the pupil by atropine to be
due partly to stimulation of the radiating, but chiefly to paralysis of the circular fibres of the iris. Our author makes no allusion to the local application of the Calabar bean to the eye in cases of paralysis of accommodation, in which, besides affording great temporary improvement of vision, it has also been found of the greatest use in expediting recovery.

The employment of iridectomy in the treatment of glaucoma does not meet with much favour. Now, no one has ever put this operation forward as an "unconditional cure for glaucoma." No doubt, when it was first introduced, it was employed in all cases, however far advanced the disease might be, and of course it failed in a very large number, as they were unsuited for the operation, the optic nerve and retina having become completely paralyzed and altered in structure from the great and long-continued pressure to which they had been subjected. Thus considerable discredit was thrown upon its use; but now that suitable cases alone are submitted to it, its remedial powers are almost universally acknowledged, and if proof of this were wanted, we need only allude to the fact that most of those who opposed the operation when first suggested, are now its strenuous advocates. We must always bear in mind that the disease for which it is employed is one which, if left to itself, must almost infallibly lead eventually to complete loss of sight, so that, even if the results were less beneficial than they really are, it would still be advisable to give the patient the chance of recovering or retaining his sight. In the case cited by Mr Jones as one in which extraction of the lens and iridectomy had been performed, and in which glaucoma was nevertheless subsequently developed, the portion of iris excised was evidently merely a part of the pupillary margin which had fallen before the cataract knife in making the section, and this, as already explained, does not constitute the operation of iridectomy; and we often observe in such cases, when a portion of iris remains afterwards adherent to the corneal cicatrix, that the iris becomes more susceptible of irritation, and this may eventually lead to a glaucomatous inflammation. This also may serve to some extent to account for the want of success which in some cases has attended the performance of so-called iridectomy.

Great temporary benefit has often been derived in cases of glaucoma, from tapping either the aqueous or vitreous humours, and to this we ascribe the good results that have frequently attended Mr Hancock's "division of the ciliary muscle," and Mr Solomon's "intra-ocular myotomy;" operations which, as being extensively performed at some of the ophthalmic hospitals in this country, deserve a passing notice, but are not mentioned by Mr Jones.

We cannot pass over in silence a mistake of a somewhat important kind which has crept into Mr Jones' description of the operation for convergent strabismus,—viz., that the tendon of the internal rectus should be cut at some distance from, instead of close to, its insertion. The operation thus performed would certainly be more
potent, but would materially restrict the mobility of the eye. Of the many ingenious operations which of late years have been suggested in the treatment of various forms of strabismus, Mr Jones says little; and in particular the beautiful plan recently brought into use of curing divergent, the result of excessive operations for convergent, strabismus, by bringing forward the insertion of the internal rectus, thus at once rectifying the strabismus, and increasing the mobility of the eye, has been entirely overlooked.

The author also omits to mention the able researches, physiological and clinical, by which von Graefe has demonstrated the nature of many cases of blepharo-spasmus, and proposed what has proved in his hands a very effective treatment,—cases, namely, which depend upon reflex irritation of some of the branches, more especially of the fifth pair of nerves; division of which served to remove the affection.

Aware of the great benefits Mr Jones has conferred on our profession by his many valuable scientific researches, which have deservedly secured for him a position of high eminence, it is with great reluctance that we have felt ourselves compelled to point out that this manual is in many particulars behind the day, and that in some of its teachings it is altogether erroneous; but there are certain points which we can heartily commend to the attention of the profession, among which we may specify the descriptions of some of the subjective phenomena, the observations on paralytic affections of the muscles of the eye, and diseases of the eyelids, and, particularly, his admirable plan of operating for ectropion. Mr Jones certainly deserves well of the profession for the introduction of this operation, and we hope, that erelong, in suitable cases, it will be extensively employed. Should he favour the public with another edition of this work, we think that by a simplified classification, by judicious omissions, and by the introduction of some information which we seek for at present in vain, he might render it, in all respects, worthy of the confidence of the profession.

Chemistry for Students. By Professor Williamson. Oxford: Clarendon Press: 1866.

Lecture-Notes for Chemical Students. By Professor Frankland. London: Van Voorst: 1866.

Lessons in Elementary Chemistry. By Professor Roscoe. Macmillan: London and Cambridge: 1866.

Inorganic Chemistry. By the late George Wilson, M.D. Revised and enlarged by Stevenson Macadam, Ph.D. London and Edinburgh: W. & R. Chambers: 1866.
Practical Chemistry. By Stevenson Macadam, Ph.D. London and Edinburgh: W. & R. Chambers: 1867.

Elements of Qualitative Chemical Analysis. By W. H. Spencer, B.A. Macmillan: London and Cambridge: 1866.

Practical Chemistry. By W. Odling, M.B. London: Longmans: 1865.

Elements of Chemistry. 3d Edit. Part III. By W. A. Miller, M.D. etc. London: Longmans: 1867.

Teachers of Chemistry have long been in want of a short elementary text-book. The valuable octavos of Turner and Miller1 were too large and expensive for the majority of our students, requiring more money to buy, and more time to study them, than they could well afford. The excellent manual of Fownes was smaller and cheaper, rather by condensation of style than by selection of matter, while the school chemistries belonged, as a rule, to the age before the great chemical revolution, and were nearly useless to the student of the present day.

The first who attempted to supply this demand for a short text-book, was Professor Williamson. His "Chemistry for Students" is a very remarkable little book. One of our greatest theoretical chemists has produced a text-book containing absolutely no theory —nothing but a clear statement of carefully selected facts. This peculiarity will, no doubt, recommend the book to a large number of teachers, who reasonably prefer their own theoretical views, and would gladly avoid the trouble of contending those which their students find in their text-books. Unfortunately, Professor Williamson's book is disfigured by a number of errors of the press unusual even in a scientific treatise. The list of errata appended to it is large, but might easily be doubled by any one without much trouble.

The next book in our list is the direct antithesis, or rather complement, of Professor Williamson's. The latter contains nothing but fact, while Professor Frankland's "Lecture-Notes" are almost exclusively theoretical. The object of the work renders this necessary, as it is written expressly for the purpose of saving the time which a student generally consumes in copying into his note-book the formulae and equations on the black board. Every teacher has, no doubt, often regretted, with Professor Frankland, "the great amount of labour which an earnest student expends in noting down the reactions and the names and formulae of substances which are presented to his notice in the lecture-theatre," and will agree with him that "he is thus greatly interrupted in following the arguments and explanations of the speaker." The book is exactly

1 A third edition of Miller's "Organic Chemistry" has just been published, which fully maintains the high reputation which Dr Miller's "Elements" deservedly enjoy as advanced text-books.
what it professes to be, and is invaluable to any one who wishes to obtain an elementary, and, at the same time, an accurate view of modern chemical theory. The author uses, to express the constitution of substances, two new modes of notation,—his own symbolic formulæ, and the graphic formulæ of Dr Crum Brown. By means of these, the most complicated chemical compounds and reactions are made intelligible even to a beginner. The book has at first sight a somewhat repulsive appearance, from the mass of formulæ which bristle in every page; but it must be recollected that it is not intended to be an independent treatise, but a supplement to a course of lectures.

Roscoe’s “Lessons in Chemistry” is an admirable school-book. Concise without obscurity, elementary without meagreness, it is a book we should strongly recommend to those who wish to know what chemistry is without becoming chemists. Though intended for schools, it contains almost all that a medical student is expected to know of the science; and we have no doubt it will become a very popular text-book.

Dr Macadam has given us a new edition of the “Manual of Inorganic Chemistry” of the late Dr George Wilson. He appears to have contented himself with translating the formulæ and equations of the last edition into the language now generally used by chemists. From the length of time which has elapsed since the work was first published, it is to be regretted that Dr Macadam did not re-write it entirely, as his “Text-book of Practical Chemistry” shows that he was well able to do.

Notwithstanding the lack of systematic text-books on chemistry, we have long had abundance of practical treatises. Among new books of this class, we may mention Spencer’s “Elements of Qualitative Chemical Analysis,” which is accurate and well-arranged. A large size of page is used, and the author is thus enabled to exhibit at a glance the reactions of each group.

A new edition has been published of Odling’s well-known “Practical Chemistry,” probably the best book of its kind for a medical student.

Histological Demonstrations: A Guide to the Microscopical Examination of the Animal Tissues in Health and Disease; being the Substance of Lectures delivered by George Harley, M.D., F.R.S., Professor in University College. Edited by George T. Brown, M.R.C.V.S., Professor of Veterinary Medicine, and one of the Inspecting Officers in the Cattle Plague Department of the Privy Council. London: Longmans, Green & Co.: 1866.

There is a want of a good, short English work on Histology. The best treatises on the subject in our language, either, like Dr Sharpey’s, or Todd and Bowman’s, form part of larger works on
anatomy or physiology, or, like the translation of Kölliker's excellent Manual, are too large in size, and too detailed to suit a beginner. Kölliker's work, the style of which is, unfortunately, somewhat tedious and unattractive, is less a text-book than a work of reference for consultation by the anatomist, or by the advanced student, who is devoting special attention to the study or investigation of minute structure. What is needed, within a brief compass, is a clear outline of the science of histology, with simple and correct descriptions of the principal structures or tissues, prefaced by proper directions for handling the microscope, and preparing the different objects for examination. The histological demonstrations of Professor Harley and Mr Brown appear to be designed to supply this deficiency. The text has been prepared by Mr Brown from Dr Harley's notes, and with his concurrence, and is intended to represent the method of instruction practised, and the principal information conveyed in Dr Harley's lectures and demonstrations in the Physiological Laboratory of University College. The idea of the work originated with Mr Brown, who was so satisfied with the success of Dr Harley's method of teaching as to desire to extend the benefit of it to a wider circle. The little book is full of matter. Within about 260 pages are comprehended an account of the microscope and apparatus, with the mode of using them, and a description of the minute structure of tissues and products, both healthy and morbid, including parasites, while numerous woodcuts, many from Kölliker, and some original, are introduced for the purpose of illustration.

Useful as this little book is in some respects, we regret that we cannot recommend it as a treatise on histology. We are not disposed to find fault with such a mere put-off as the chapter on the internal ear, for example, because, where so many subjects are treated of in a small space, completeness is impossible. It would have been preferable, however, either to have given a fuller description, or to have omitted it altogether. Certainly the delicate and beautiful structures of the cochlea are too difficult for examination by the beginner, although a knowledge of them is useful and interesting, and might stimulate the young inquirer to future research. But such omissions are of minor importance in an elementary work. What is of more consequence, is that the information, so far as it goes, should be useful, correct, and well arranged. Now, the plan of the book is, we think, on the whole, good, and well adapted for a practical guide. The directions for using the microscope, and preparing objects for inspection, are sufficient, with a little assistance, to enable the inquirer to set to work for himself. But it is with the more purely histological part that we find reason to be dissatisfied. The descriptions of many of the tissues are neither so clear nor so accurate as we should have expected, and the principles of histological science, so far as they are given, are very unsatisfactory. In short, though useful as a working manual, the treatise cannot, without certain corrections and improvements,
be regarded as an accurate exposition of the present state of histology.

At the very beginning of the histological part, in treating of cells, we are told that "the ultimate fibres of muscles are formed of corpuscles arranged in rows," and that "even the seemingly homogeneous filaments of fibrous tissue are associated with occasional nuclei, which bear testimony to their cellular origin." Now, these statements, though true in a sense, and as representing the peculiar views of certain observers, are quite erroneous as general propositions, and are calculated to confuse and mislead. The account of the origin of cells, in like manner, sets out with the assertion that, "1. Cells may arise from a formative fluid, derived from the blood, called the blastema;" and no reference whatever is made to the great principle, which, right or wrong, is one of the leading ideas of modern histology, that cells arise exclusively from pre-existing cells, "omnis cellula 6 cellula." Even supposing that Dr Harley does not agree with this maxim, so strenuously maintained by Virchow and his school, yet surely some prominent notice ought to have been taken of it. In the same way the description of fibrous tissue is very defective, and throughout there seems no endeavour to simplify the study of histology, by a judicious classification of tissues. So far as it is an exposition of histological science, the book might have been written twenty years ago.

In the chapter on muscle we find a repetition of the usual confusion, for which we do not specially blame Dr Harley, but which has been already too long retained in our text-books. "Two kinds of muscle," we are informed, "exist in the animal body, differing from each other in structure and function—1. Voluntary muscle, which contracts under the influence of the will; 2. Non-voluntary muscle, which acts independently of the will." The author then proceeds to the "Examination of Striated or Voluntary Muscle," which is followed by that of "Involuntary Muscle, Striated variety," and finally, the "Non-striated variety." How any one could derive clear notions from such distinctions, it is difficult to understand. Voluntary and involuntary muscle are first stated to differ in structure as well as in function; then striated is put as equivalent to voluntary (striated or voluntary muscle), and immediately afterwards, involuntary muscle is introduced by the striated variety. It is certainly time that all this confusion should cease. Many years ago, John Reid pointed out that there was no propriety whatever in the distinction of muscular tissue into voluntary and involuntary, and that error would certainly ensue from regarding the striped fibre as the voluntary, and the smooth as the involuntary. It had long been known, for example, that the muscular fibres of the heart in man, and of the upper part of the oesophagus, were striated, yet no one could for a moment suppose that they are voluntary. Yet the true distinction by which all confusion may be avoided is sufficiently simple. No
muscle is voluntary or involuntary in virtue of any peculiarity of structure, but solely in consequence of its nervous connexions, which may render it subservient to voluntary, or involuntary, motion, including reflex and other varieties of it. The difference between the striped and the unstriped fibre is, not that the one is voluntary and the other not, but that the former is designed for rapid, and the latter for slow, action. This is a fact which their behaviour under stimulation clearly demonstrates. It is easy to understand, on this principle, that as the muscles which obey the will must act rapidly in order to be efficient, so they must be composed of the striped kind of fibre. On the other hand, most of the involuntary muscles, like those of intestines, require to act slowly and continuously, and are consequently made up of the smooth kind of fibre. But in such an involuntary muscular organ as the heart, whose peculiar function implies celerity and precision of contraction and relaxation, the employment of the striped fibre is again required. It is proper then to speak, if we please, of voluntary and involuntary muscles or muscular organs, in respect of their nervous relation; but in classifying muscular tissue, we ought to speak only of the striped and unstriped or smooth, not of voluntary and involuntary. And this accuracy of language, which is required to avoid confusion in human anatomy, is still more necessary in comparative histology. For the medical student it is especially needful. Again and again have we heard students, in disputing with their fellows, maintaining that the fibres of the heart must be non-striped, because the heart was an involuntary muscle. In examination-questions by the different boards the same confusion is frequently obvious, and is sometimes made the occasion of so-called catch questions. And we have even witnessed an anatomical lecturer, skilful in dissections, and in naked-eye anatomy, but unpractised with the microscope, assure his audience, more solito, that muscular fibre is divided into the voluntary or striped, and the involuntary or smooth, and immediately proceed, somewhat unluckily, to instance the heart as the principal involuntary muscle, and point to a diagram of smooth muscular fibre-cells as the kind of fibre of which the ventricles are composed. But so long as confusion exists, errors must naturally follow. We add only one word more. So far back as 1845, Kölliker demonstrated, as others have often done since, that the smooth muscular fibres are made up of spindle-shaped fibre-cells, yet we find Dr Harley, after repeating the old description of the fibres, making the dubious statement, “that some authorities consider involuntary fibres to be constituted of elongated nucleated cells cemented together.”

In conclusion, the book, we repeat, may be useful as a guide to work with the microscope in the investigation of minute structure, but it is not to be relied upon as accurately representing the present state of histology, either in its general principles or its details. Perhaps in a new edition these faults may be cor-


rected. There are also some inaccuracies due to want of care, which should be removed. Thus, at p. 173, we are told that "A corpus luteum is formed after the escape of the Graafian follicle from the ovarium;" and such words are found as "vibrines," "foliae," "ciliae," "dermis," "ptyriasis," and "schirrus," which is so spelt wherever it occurs. The woodcut representing the cornea (fig. 135), also gives a very inaccurate idea of the structures composing it.

Histology is in truth only a branch of the great science of development. It can never be really understood until it is studied in that connexion. But, meanwhile, even in the present modes of teaching it, it serves as the foundation for a great and important part both of physiology and pathology, and it is essential that its principles should be accurately explained.

Orthopraxy: The Mechanical Treatment of Deformities, Debilities, and Deficiencies of the Human Frame: a Manual. By Henry Heather Bigg, Assoc. Inst. C.E., Anatomical Mechanist to the Queen and Prince of Wales, the Royal Hospitals of Chelsea and Greenwich, the Board of Ordnance, the Admiralty, the East India Department, St George’s, St Thomas’, Guy’s, Middlesex, King’s College, Royal Free Hospital, etc. London: John Churchill and Sons: 1865.

This work, we are told in the preface, is founded upon four others which, at different dates, during the last ten years, the author has given to the public. Two of these describe artificial limbs, another is on the subject of localized movements, or muscular exercise in the treatment of deformities, while the fourth, which has already been favourably noticed in this Journal, is devoted to the mechanical appliances necessary for the treatment of deformities.

These works have not been merely bound up together, but so modified and recast, as really to result in a new and very complete work.

An introduction of considerable length, begins with a rather clever special pleading in behalf of "mechanical therapeutics" as a new branch of the healing art; an unsuccessful attempt to prove that "mechanical therapeutics" should be considered a branch of medical science; and some sensible remarks on the necessity of its being practised as a separate mechanical craft. The name Orthopraxy is then introduced and defended, and a rapid and amusing summary given of the history of orthopraxy from the days of Hippocrates down to the volunteer movement of our own day.

The remainder of the work is divided into four chapters, and each of these again into three sections,—the latter being devoted to the deformities, debilities, and deficiencies of the four great regions.
of the body: head, upper extremities, trunk, and lower extremities, each of which has a separate chapter.

The work is very full and elaborate, illustrated with numerous wood-engravings, and written in a pleasant amusing style. In the mechanical ingenuity and completeness of the very numerous instruments and appliances, there is scarcely anything left to be desired; as surgeons, we might find more to criticise in the cases to which they are applied.

In the treatment of spinal disease, especially, we believe that the use of mechanism is, in many cases, much to be deprecated; in all, it is to be used with extreme caution.

As a surgical mechanist, however, we must allow that it is Mr. Bigg's duty to be able to devise and supply mechanical aid for every case in which it is ordered, and, this we think, his work proves he is thoroughly able to do.

The section on artificial arms is one of the most interesting in the book, the number and variety of the instruments which can be fitted on to the stump being very great; from the useful fork, and the more dangerous pen, to the nail-brush or file, the reins, the pacific rake and hoe, the more doubtful pruning-knife, and the unmistakable dagger or gun. A most ingenious artificial hand is described by which a celebrated French operatic singer, who had lost his right arm above the elbow, was enabled again to use it for the purpose of histrionic declamation, and with it to draw his sword from its scabbard.

"A hand thus constructed," says our author, "when the fingers are placed in a natural position, leaves nothing to be desired in the way of symmetry. Often, indeed, the artificial hand is more symmetrical in aspect than the natural, and, in a spirit of coquetry, the gloved substitute is frequently displayed in preference to the real hand." A most fascinating account of the artificial leg, invented by Dr. Bly, of Rochester, U.S., shows what may be done by the surgical mechanist for losses of the lower limb; the free movements of the knee and ankle, combined with strength, being almost as wonderful as the powers given by springs and catgut to the fingers of the artificial hand.

The work is got up with very great neatness and taste.

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The Toxicologist's Guide: a new Manual on Poisons, giving the best Methods of Manipulation to be pursued for their Detection (post-mortem or otherwise). By John Horsley, F.C.S. London: Longmans and Co.: 1866. Pp. 70.

This little manual gives the tests of all the ordinary poisons, with the exception of the mineral acids. Mr. Horsley is an experienced chemist, and has evidently studied with care the reactions of the
alkaloids. These are given in detail, and the colorations spoken to are rendered more intelligible by means of a plate representing seventeen of the coloured reactions. On comparing two copies of the Guide, however, differences in the shade of colour are observed in similar plates. This may depend on their being hand-coloured by persons not aware of the importance of preserving the exact tint. In a subsequent edition this should be looked to. For where substances are spoken to as being present from certain changes of colour produced by re-agents, it is especially necessary that there should be no dubiety as to the exact shade of colour. This illustrates, however, the danger of trusting implicitly to colour tests alone in determining the presence of poisons. No doubt, Mr Horsley tells us, p. 68, that "the practised eye is a much better judge of quantity, by the intensity of shade produced, than the most accurate balance is of weight," and gives us at the same time directions for the detection of 100,000th of a grain of strychnia. Such a statement, and also the detailed reactions of rare alkaloids, might lead some to suppose that the detection of these substances was an easy matter. Our author warns such, however, that "as regards the 'vegetable poisons,' it is very questionable whether, having been absorbed and passed through the circulation, they can be found at all;" and with reference to infinitesimal quantities, he is careful to add, "of course this is understood as applying to the pure poison (free from organic matter)." That is the difficulty—the toxicologist is called upon to conduct a search for alkaloidal principles in the midst of organic matter undergoing putrefaction. It is easy for the chemist, with the substance separated and specially prepared, to devise tests for it, and by dilution, to estimate the quantity present by the intensity of the colour produced by the various tests. But all this is of no practical importance, unless we have processes which enable us to separate the poison from organic matter in such a state of purity as to allow of the satisfactory application of the tests. In giving these reactions in detail, Mr Horsley's manual conducts the analysis of poisons on a definite plan. The process for the detection of unabsorbed poison is first given, and this is followed by that for poisons which have been absorbed and contaminated with organic matter. The various steps of the analysis, in both cases, are carefully described; and we agree with the author in thinking, that advantage is gained by the positive statements of a concise manual, which have all been tested by an experienced chemist, as "reference to larger works in cases of emergency is often attended with inconvenience."
Cancer: A New Method of Treatment. By W. H. Broadbent, M.D., London; Assistant-Physician to St Mary’s Hospital, and Lecturer on Physiology at the St Mary’s Hospital Medical School. Pp. 28. London: John Churchill and Sons. 1866.

After the thorough ventilation which the subject of the treatment of cancer by injections has lately undergone in the correspondents’ corner of the weekly Medical Journals, we need at present hardly do more than merely express our opinion that Dr Broadbent has fairly made out his claim to the credit of introducing a method of treatment which aims at the solution and absorption, not the destruction, of tumours by sloughing.

Having adopted the idea of injections of the cancerous tumour by the hypodermic syringe, in the hope of retarding or arresting its growth, Dr Broadbent selected acetic acid for the following reasons:

1. This acid does not coagulate albumen, and might therefore be expected to diffuse itself through the tumour. The effect would thus not be limited to and concentrated in the point injected.

2. If it entered the circulation it could do no harm in any way, either by acting as a poison or by inducing embolism.

3. Acetic acid rapidly dissolves the walls and modifies the nuclei of cells on the microscopic slide, and might be expected to do this when the cells were in situ.

4. It had been applied with advantage to open cancer and to cancerous ulcerations.

“The experiment was made, and it was found that acetic acid, though in healthy tissues it causes very severe smarting and burning, unless very strong, gives little pain when thrown into malignant structure. On the other hand, it acts energetically on cancer, but has comparatively little effect on normal structures.”

Dr Broadbent’s cases are four in number, besides a fifth reported by Mr A. Cooper. For details we must refer to the pamphlet; but the cases were:

1. Scirrhus of breast, recurrent after two removals. After various applications of acetic acid by injection, and carbolic acid and glycerine to the surface, the ulceration is reported, after five months’ treatment, to be nearly healed.

2. Secondary cancer of glands in axilla, with enlargement of the arm. Contraction of the diseased glands, and diminution of the swelling in the arm.

3. Cancer of the rectum, with obstruction. Pain palliated, and obstruction diminished, by weekly injections of acetic acid.

4. Cancer of the tongue, with enlarged glands. By injections the size of the tumour was diminished, and the ulceration became less fetid.

The fifth case—reported by “Mr Alfred Cooper, of St Mark’s Hospital for Diseases of the Rectum”—is so remarkable as to deserve quotation, but so astounding in its results as simply to be incredible. Without venturing to throw a single doubt on Mr
Cooper's veracity, we prefer the possibility of a mistake in diagnosis, even by a surgeon to a special hospital, to such an absolute overturn of all our surgical principles as would be required in accepting this most unique case. We simply quote it *in extenso*, without further remark:—

"The disease was of long standing; the patient's sufferings were extreme, and he was in the last stage of exhaustion. There was evidence also of extension of the disease to the liver; no hope could be entertained of saving life, but it seemed possible that some relief might be given, and at the worst an opportunity would be afforded, by post-mortem examination, of ascertaining the effects of the injection.

"I saw the case with Mr Cooper on July 6th. On examination the finger came upon a mass of disease apparently filling the entire pelvis, and the canal by which faecal matter passed could not be made out. About eighty minims of acid were injected at twice. The manipulations and the entry of the acid gave pain, and he was weak and ill afterwards. A long drive in a cab contributed to this, as he was exhausted before any examination was made. The injection was repeated on the 13th. He experienced no marked relief till, on Aug. 28th, he passed a solid substance, described by himself as 'being large enough to cover a crown-piece, and as tough as chamois leather,' after which he suffered less. His strength, however, was exhausted, and he died on September 7th.

"On post-mortem examination, the obstruction in the rectum was found to have entirely disappeared, and no trace of the tumour was to be found. The liver and other abdominal organs were extensively affected with cancer."

Dr Broadbent recommends that the injection should be gradual, that the proportion of the mixture of acid with water should vary with the case, but should never be so strong as to cause pain. From what experience we have yet had of this method of treatment, we believe it worthy of the fullest trial, and indulge the hope that in some cases it may cure; in others, palliate; in others, again, (and perhaps these may be the most frequent and the most useful), prepare the way for other remedies by diminishing the size and subduing the tendency to increase of malignant tumours.

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The Use of the Laryngoscope in Diseases of the Throat, with an Appendix on Rhinoscopy. By Morell Mackenzie, M.D. Second Edition. London: Hardwicke: 1866.

The fact that, within a very short time, a second edition of this work has been called for, justifies the favourable comments which were passed in these pages upon the first edition. It is sufficient now to add that Dr Mackenzie has, by careful revision, amplification, and the addition of woodcuts, made his book more than ever deserving of the attention of those who desire a full, concise, and simple guide to the art of exploring, and of applying remedies to the posterior nares and larynx.