Physiological Remarks.—We can ascertain directly that the eye alters its refracting powers to suit its focus to different distances. Thus the image of a flame and of the retina becomes indistinct when the observed eye looks at an object much more distant than the flame. Or if a thread be held horizontally before a flame, its image on the retina will be seen when near the flame, but become indistinct or disappear when the thread is moved from the flame towards the eye. It also appears that neither the optic nerve nor its fibrils in the retina are adapted for receiving impressions from light; otherwise, when part of the retina is illuminated, the corresponding portion of the periphery should perceive light; and when luminous rays fall on the optic nerve, the whole field of vision should be lighted up, as if the whole retina were acted on. But this is not the case; for even less light is perceived when rays fall on the optic nerve than on other parts of the retina. It is therefore the nerve-cells and corpuscles of the retina which perceive the luminous undulations, and localise them to the point on which they fall.

The Practical Applications of the eye-speculum may be expressed thus:—It enables us to perceive alterations on the retina just as the unaided eye lets us see alterations of the cornea, iris, etc. Thus, congestion, varicose vessels, exudations on or in the retina, or between it and the choroid (the fibrin reflecting more powerfully, because less transparent than the retina, and obscuring the vessels). Short-sightedness may be directly detected by the curvature required for the concave lenses. The presence and degree of opacities of the crystalline will be more easily and certainly recognised. In short, nearly all that dissection has yet shown in the dead eye may, by this instrument, be recognised within the living one.

Part Second.

REVIEWS.

Class-Book of Botany, being an Introduction to the Study of the Vegetable Kingdom. By J. H. Balfour, M.D., etc. Part I.—Structural and Morphological Botany. 8vo. Edinburgh: A. and C. Black.

Dr. Balfour, in writing this “Class Book,” has assigned to himself the duty of carefully collecting all the known facts of the science of vegetable organography, and presenting these to the student in a condensed and attractive form.
Like many other physical sciences, botany has, during the last half century, made prodigious advances. It has engaged the attention, or rather has been made the life's business, of many of the most carefully-observing and philosophically-thinking men in the world of science. Any book, therefore, which professes to present a summary of the actual state of botanical knowledge, must embrace an extent of general doctrine, as well as an amount of individual details, not easily mastered, except by the student who applies himself to it with assiduity and earnestness of purpose. We suspect that many of those who attend lectures on botany, especially under the compulSOR of a medical curriculum, will be apt to take alarm at Dr Balfour's octavo, when they find that it is only Part First of the "Class-Book;" and we are free to confess, that to those who only wish to learn so much of botany as will enable them to pass current with a medical board, a good deal of the "Class-Book" will appear superfluous. But Dr Balfour, though a member of a medical faculty, bears in mind that he lectures to, and writes for, more than medical students; that botany is not a mere collateral department of medical instruction; that it forms an appropriate part of the education of a gentleman, be his profession what it may, as the science which lays open to him one of the most attractive chapters of the great book of the Creator's wisdom. It is absurd to look upon botany in any other light. We would insist upon its being attended to by all our medical students; but by no means upon any idea that it is directly of practical use to the majority of them when they become established in life. This truism is much in favour with a certain class of people, who call themselves the practical men, and who sneer at pure science, —i.e., at what they know nothing of. Cui bono? is their cry. Will a doctor's rhubarb answer his purpose a whit better, that he is at home with the Polygonaceae? or will his jalap be more successfully cathartic, that he can discuss most learnedly the claims of Exogonium to be held as generically distinct from Ipomoea? Certainly not; but his habits of observation will be improved, his knowledge of physiology, and of vital phenomena generally, will be more secure, because resting on a broader base, than if his attention had been confined to the human frame; and above all, if he have studied in a proper spirit, his mind will be enlarged and elevated. This is our answer to those who are perpetually calling to us, that of the students who attend botanical lectures, very few in after-life show any fruits from their phytological studies. It is quite true that only a very small number collect herbaria,\(^1\) or plunge into the momentous question as to how many prickles on a raspberry are required to constitute a distinct species of Rubus; but it is as true, that very few depart

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\(^1\) Some of them, however, do; and we wish that more of our brethren on foreign service did. Let no man be deterred from collecting, because he cannot classify and name. Let him gather and preserve specimens, noting habitat and time of collecting, and send home the collections to those who have more time, opportunity, and knowledge for correctly examining them.
from the botanical class-room without having acquired, if not some scientific, at least some mental, improvement.

We are not entitled, from anything that Dr Balfour's preface contains, to assert that these are his ideas; but we are led to suppose that they are, from the plan upon which his book has been written. He has made it a condensed systematic work, not a mere grinding book, and he has executed his task with perfect success. He has most scrupulously noted, and skilfully condensed, all the best-ascertained facts of his science; and by dint of pictorial illustrations, abundant even to profuseness, has made of his "Class-Book" a very elegant volume.

We look with interest for the second part of it; but we hope that the author and publisher will carefully consider the subject of expense. This first part costs half a guinea—nor is it dear at the money; but the second part must cost less. Students have many demands on their purses, and their class-books must not be too expensive.

The Diseases of the Bladder and Prostate Gland. By William Coulson, Surgeon to St Mary's Hospital, etc. London: 1852. 8vo. Pp. 485. Fourth Edition.

Mr Coulson's work on the "Diseases of the Bladder and Prostate" has long enjoyed a well-merited reputation. Since the publication of the third edition some ten years have elapsed—years, moreover, during which, if surgical pathology has not made many important advances, surgical writers have at least manifested unprecedented activity. And as diseases of the bladder, prostate, and urethra constitute no small fraction of the ills to which flesh is heir, and which it is the province of the surgeon to alleviate, we cannot wonder at the number of surgical treatises devoted to their description which have rained upon us from the press. To the literature of these regions, the chemists, physiologists, and physicians have very liberally, if not so bountifully, contributed. The microscope too has been brought to bear upon the subject, and with such success, that the scrutiny of urinary deposits has become a "little science," with which every student is expected to make himself familiar. Mr Coulson's work may be regarded as an encyclopedia of facts ascertained up to the present time; for, with great industry, the author has waded through the mass of literature to which we have just alluded, gathering materials from every available source, and weaving them into a connected form. We do not mean to insinuate that the treatise before us is a mere compilation; on the contrary, the practical experience of the author has enabled him to introduce much that is original and interesting in surgical pathology; and to the general excellence of
the commentary, in which means of diagnosis and of treatment are illustrated, we bear willing testimony.

The first eighty pages are devoted to the consideration of the different states of the urine in health and disease; and it is here that the author has chiefly availed himself of the labours of the physiological chemist and observations of the practical physician. A number of wood engravings are introduced, to illustrate the various forms of urinary deposits observed by means of the microscope. It may not be superfluous to record here our firm conviction, that various points in uroscopy still remain open for original investigation; and in particular, that the evidence which connects some of the rarer crystalline forms with certain chemical urinary constituents, is very flimsy, and absolutely requires confirmation. We have no doubts about the identity of the rhomboidal or lozenge-shaped crystals with uric acid; the prismatic and feathery phosphates, the beautiful octohedra of oxalate of lime are likewise acknowledged facts in animal chemistry; and the six-sided plates of cystine we admit to be highly characteristic. But the mystery of the dumb-bell crystals has not yet been solved. Are these curious bodies forms of oxalate of lime, as Prout and Golding Bird once maintained, or are they oxalurate of lime, as the latter now believes, or do they contain lime at all? Even some of the different forms of lithates have not been established on unexceptionable evidence. Thus, in the delineations given by Mr Coulson at p. 38, we find lithate of ammonia sometimes represented by dark nodules beset with crooked and pointed radii; and, in the drawing of lithate of soda on the next page, certain bodies are introduced, which we confess our inability to distinguish from the former. It may be that the same form is common to both salts, but in that case it were well that we were put in possession of some test, by which their different chemical composition might be readily discriminated.

The diseases of the bladder, including irritability, spasm, paralysis, and inflammatory affections of its different tissues, occupy eight chapters; one is devoted to cancer and tubercle of its mucous membrane, one to wounds and injuries, and one to hernia of the bladder.

The subject of urinary concretions, and the various operations practised for their removal, are next discussed. In the course of the comparison of the respective merits of lithotomy and lithotrity, we find a most lamentable example of the small reliance which can be reposed in medical statistics. It might be supposed that an honest appeal to the results of the practice of distinguished hospital surgeons would at least furnish an approximation to the true success or mortality which attends the latter operation; and to whose practice could the appeal be more appropriately made than to that of M. Civiale?

"M. Velpeau has published an analysis of the cases of M. Civiale, the most experienced lithotritist of the present day, which are arranged in five series:"
Series. | Number of Cases | Cured | Dead | Unrelieved, the stone remaining | Otherwise, Success in | Failure in |
---|---|---|---|---|---|---|
1st. | 83 | 41 | 39 | 3 | 41 | 42 |
2d. | 24 | 13 | 11 | 0 | 13 | 11 |
3d. | 53 | 30 | 15 | 8 | 30 | 23 |
4th. | 30 | 18 | 8 | 4 | 18 | 12 |
5th. | 16 | 6 | 7 | 3 | 6 | 10 |
206 | 108 | 80 | 18 | 108 | 98 |

"That is to say, of 206 patients operated upon, 108 (a very little more than 1 in 2) recover immediately; 80, or nearly 1 in 2½, die; and 13 retain the stone, and will be lost,—108 cases cured, to 98 in which death is immediately induced, or may not be averted within a brief interval of time. M. Civiale has, however, since published an account of his own cases, which differs most materially from the above statement.

"Of 303 patients, says M. Civiale, who underwent lithotrity, 296 were cured, and 7 died; of these only 6 were under my treatment; for M. Arnoux, who figures in this table, and in that of the relapses, was not operated upon by me a second time."

Here is truly a discrepancy! According to M. Velpeau, the cures effected by M. Civiale's procedure are 52·4 per cent.; the deaths which follow it, 38·8 per cent. According to M. Civiale, the cures are 97·7 per cent., the deaths 2·3 per cent.

In concluding our notice of Mr Coulson's treatise, we beg to congratulate him upon his rare good fortune in being the author of a surgical work, which has gone through four editions.

COLLOQUIA DE OMNIBUS REBUS.

COLL. II.—POLYLOGUE ON SPURIOUS FACTS IN MEDICINE, ETC.

TRANSFUSION OF BLOOD.—Chirurgus to Obstetricus. What do you suppose would be the effect of injecting one ounce of blood into the veins of a woman sinking from hemorrhage, after delivery?

Obstetricus. Much the same as from holding burnt feathers or hartshorn under her nose.

Medicus. Or injecting the blood into her ears.

Obstetricus. Very possibly. It might act as a fillip to the remaining power of action, but could be of no permanent advantage whatever. I lately saw a case of the kind, in which seven or eight ounces were injected without producing any sensible change.