Statistics are often so absurdly used, especially when employed in disputed questions, that they are frequently regarded with suspicion; and, for our own part, when examining an argument of which we are doubtful, we endeavour to sift and compare any figures which are used, and almost invariably find something wrong about them. Nevertheless, one cannot deny that when the subject is of sufficient generality to allow of figures being used, and when all modifying and disturbing influences are fairly eliminated, the proper application of statistics enables men to arrive at correct conclusions, besides helping them to resist their own prejudices and mental fallacies, and these conclusions can be stated in a more exact form than ordinary language can convey. Indeed, it is this very exactness which renders false statistics more liable to a thorough refutation than any other form of statement. We may be sure that the man who will garble figures will garble facts also; and though none can deny that statistics are sometimes put to an absurd use in medicine, on the other hand, when properly and carefully handled, they may add a great deal to our knowledge.

In the Report under review, Dr Bryden has used the great materials in his hands in a very judicious manner. As he is far too much the master of his subject to pass over any obvious fallacy, the work of the reviewer is reduced to pointing out a few of his principal conclusions. Dr Bryden undertakes to show how the sickness and mortality of our European army in India are affected by age, exposure, situation, and other general causes, so that we may gain some idea as to how the great loss of life may be prevented. As it would be inconvenient to reproduce the long columns of figures on which Dr Bryden bases his conclusions, we must be content in this place to cite some of the conclusions themselves:

"The young men will die from fevers in as great a proportion as the old men, sometimes in a much greater proportion; heat apoplexy, while it may attack men of all ages, is specially the disease of the old soldier; while under exposure all classes of the unacclimatized are prone to succumb to dysentery nearly in equal proportion. The old soldier continues to die, while the young soldier loses to a great degree his susceptibility to dysentery; and in the case of hepatitis, there is consistently a broad line of distinc-
tion between men above and below twenty-five, the ratio of liability being doubled in the case of the older class." — (P. 12.)

While the mortality of our soldiers increases very rapidly after thirty, Dr Bryden is prepared to admit a certain degree of what is generally called acclimatization. "Sir Ranald Martin," he says (p. 34), "has very well stated the truth, that, while the tendency of the British soldier in India is to deterioration and decay, there is acclimatization to heat, where the constitution is capable of adaptation. The old soldier landed in India dies or is invalided, and the old soldiers are the men above thirty. Every individual landing in India is obliged to pass through a process of adaptation to heat, and when this is completed he is left in a position better calculated to withstand the influences of the hot season. This acclimatizing process need not result in disease. In the young man's constitution the balance between the normal relations of the vascular system and the controlling nervous influence may never be disturbed or destroyed; but the tendency to end in disease is strong, and any attempt to force the process must terminate in disaster. This is the meaning of the excessive admission-rates and death-rates in the young regiments."

The loss of the British army by invaliding is very serious. Out of a total of 10,002—the loss from 1865 to 1870—3122 men were invalided, who spent from one to three years only in India. The average changes in a thousand men during a period of twelve years are thus given:—"469 died or were invalided, 193 were discharged (time expired), 200 were transferred, 22 purchased their discharge, and 116 remain with the regiment."

The diseases which are most fatal to soldiers below twenty are cholera and typhoid fever; hepatitis falls most severely upon old soldiers. "There is no acclimatization to hepatitis, and in the years from 1858 to 1863 the admission-rate shows but little variation. Hepatitis is, in short, a disease of deterioration. Drunkenness is one of the most powerful causes of heat fever and heat apoplexy." Nothing is more inimical to the acclimatizing process than the habitual use of alcohol.

Dr Bryden sums up (p. 47), "In every aspect in which we have viewed the soldier, the truth has forced itself upon us that his constitution is prone to decay under the influences to which he is subjected during the period of his service in India; as a young man he succumbs to one class of diseases, as an old soldier to another. The old man is not efficient for a lengthened residence if he comes old to India; and if his constitution is bad, or his habits intemperate, he dies. Young boys, who have to take their chance in common with the men of the regiment, are apt during the process of adaptation to heat, to die, or to contract disease which may lead to their being sent back to England as invalids, before they have attained the age at which a man becomes an efficient soldier in India; and a year absolutely healthy for the native, and favourable to the

VOL. XVIII.—NO. V.
acclimatized European, is that in which the young suffer, as a rule, most severely, since it is generally characterized by a prolongation of the hot season. Regiments coming to India for the first time require to be tenderly cared for, since the exaggeration of climatic agencies, or the presence of epidemic influences, tells upon such bodies far more than on those which have been habituated to cantonment life in India. The soldier, at the best, is adapted for a limited period only of Indian service, and he should begin his service young, as soon as his constitution is formed; the age at which the soldier is efficient may be reckoned to terminate soon after thirty.

We cannot follow Dr Bryden any further in his remarks on selections of stations of our regiments, and on the effect of the hill climates upon the constitution of the European soldier. We have tried to present what seems of most general interest, and we doubt not that those interested in pathology will recognise the value of his inquiries.

Die Schädelform nach Hinterhaupts Lage. Studien über den Einfluss der Geburt auf die Gestalt des kindlichen Kopfes. Inaugural-dissertation, vorgelegt der hohen Medicinischen Fakultät von Bern. Von Max Fankhauser, von Burgdorf. Bern: 1872.

The Skullform after Hinderhead Presentations. Studies of the Influence of the Birth on the Shape of the Child’s Head. Inaugural Dissertation, laid before the High Medical Faculty of Berne. By Max Fankhauser, from Burgdorf. Berne: 1872.

It is not often that we notice a work published in Berne, and this circumstance adds to our great pleasure in recognising and proclaiming the merits of this excellent unassuming essay of 110 pages. Recently we had occasion to point out the good work done, we are sorry to say chiefly abroad, by young men; and here is another example, in a work that would be creditable to the very best obstetric reputation—an inaugural thesis by a pupil of Breisky, the excellent Professor of Midwifery in Berne. Appropriately, the work is dedicated by pupil to master. It is of a simple kind, and therefore fitted to excite the emulation of all, even of country doctors, for there is nothing in it beyond the scope of the humblest powers of a zealous man in private practice.

The subject is a new one in midwifery. A little had been done of a very superficial kind long ago, and then the matter had been left. Now it is attracting much attention, and already we have very valuable results. The renewal of this branch of inquiry was the study of the greater deformities of the head produced in difficult labours, and to this department we are glad to name Barnes as a British contributor. His paper was on the Varieties of Form imparted to the Foetal Head by the various Modes of Birth, and appeared in the seventh volume of the London Obstetrical Transactions. Fankhauser has set to work up from the bottom; and work from
the very foundations was required, in order to make out the skull changes, if any, that are produced in natural or nearly natural labour when the foetus presents in its most common way. To this work we know no laboured contributions by British obstetricians; but Matthews Duncan has, accurately enough, simply described the changes, in his sketch of the Mechanism of Natural Labour, published by Dr Ritchie, in this Journal in June 1871. He gave to the chief changes (Verschiebungen) the name of shears, the proper engineering name, and so doing explained the philosophy of their production. But, besides shears, there falls to be studied in this topic the curious subject of equitation (Nahtverschiebung) or slippings of the edge of one bone over the other. For the expression of all these various changes, Fankhauser has introduced a scheme of excellent simplicity and brevity, which, however, will frighten some of our slow-coach obstetricians, for it gives to some of his sheets the repulsive look of a page covered by mathematical symbols.

To illustrate the admirable improvement of our intelligence, and the increased power of what may be called retrospective diagnosis, which the study of shears and overlappings affords, we may give a sketch of the conclusions arrived at in the chapter devoted to cases where there is little or no production of shears or overlappings.

The form of the head is symmetrical or nearly so, oval, generally broad posteriorly; forehead well arched; hinder head little prominent, not pointed, but round; there being a great resemblance to the form of the head after breech-presentation births. The caput succedaneum is generally absent, when present very slight. On subsequent (five days) measuring, the head remains nearly of the same form, but any want of symmetry is diminished.

The sutures, on the whole, present only slight overlappings, which may in part be absent, and in subsequent measurements are found little altered.

There is a different relation between the individual diameters from what is found when the shape of the head is considerably altered; especially the Mo and Fo (the mento-occipital and fronto-occipital) are shorter, while the SB and Bo (the sub-occipito-bregmatic and the biparietal) are longer, the last, indeed, being distinguished by its extent, occasionally equalling or surpassing the SB. In subsequent measurements all the dimensions undergo a slight increase; but this increase is not the same in all; yet in this respect they do not show such extent of difference among themselves as is observed in heads considerably altered in shape, in which the increase of SP and BP, and of the SB circumference, is much greater than the increase of other measurements.

The labour is marked by its facility and speed, and particularly by a very short second stage or expulsive period. The mothers are almost all multipare, with large pelvis and great driving or uterine power; only a few have slight pelvic contraction and somewhat weak pains. The children are spontaneously born, alive.

We have said that Fankhauser has had to work up the subject
from the bottom, and this remark is thoroughly confirmed and exemplified in his introductory chapters, where we find him showing the confusion and inaccuracy that exist in the ordinary and standard measurements of the head. In this point, which is only beside his great subject, he has done good work, which we recommend to all future writers of systems, as offering good points in this important department of obstetric metrology.

The Graft Theory of Disease: Being an Application of Mr Darwin’s Hypothesis of Pangenesis to the Explanation of the Phenomena of the Zymotic Diseases. By James Ross, M.D. London: J. and A. Churchill: 1872. 8vo, pp. 292.

This work is a remarkable intellectual tour de force, for the appearance of which, in its present form at least, we have, it seems, to thank Dr Anstie, but, as the title shows, it is to Mr Darwin that the author owes the original idea which he has adapted from biology, and employed in illustration of the pathology of the zymotic and other diseases. Now Mr Darwin is a man of unrivalled diligence and skill in observing and collecting facts, but his reasonings concerning these facts have not met with universal acceptance. His theory of natural selection has confessedly failed to explain all that it was intended to do, and has had to be supplemented by the theory of sexual selection, against which the penis of the raccoon, the cat, and the dog, as well as all the other facts connected with painful copulation, are a permanent protest, in spite of the ingenious plausibilities by which it is supported. But of all the remarkable theories promulgated by Darwin, that of pangenesis is certainly the hardest to swallow. It is vain to tell us that Hippocrates and other ancient authors, as well as some modern writers on biology, have employed language conveying ideas more or less akin to pangenesis; the seeming agreement in modern writers arises apparently more from the poverty of language than from identity of ideas, while, even in the quotation from Hippocrates—De aeris et locis—as to the semen coming from all parts of the body, the idea conveyed is only similar, but by no means identical. Hippocrates adopts a realistic mode of expressing a metaphysical fact which he cannot otherwise explain, but Darwin employs language quite as remarkable for its precision as for the obscurity and improbability of the ideas it so lucidly sets forth as facts. He says, “that during all stages of development the cells of the body throw off gemmules, which circulate freely through the system; that these gemmules multiply by self-division, and subsequently become developed into cells by union with other gemmules, or partially developed cells which precede them in the regular course of growths; that the gemmules are transmitted from the parents to the offspring—are developed in the succeeding generation, but often are dormant dur-
ing many generations; and, lastly, that the gemmules in their dormant state have a mutual affinity for each other, leading to their aggregation either into buds or into sexual elements.” Dr Ross does not, however, adopt this doctrine of pangenesis implicitly or in its entirety—he only adopts the gemmule and its power of fertilizing cells with which it may be brought into contact, pointing out also that the influence of what he terms the environment—that is, the incident forces—is capable of producing a great deal of the necessary differentiation of parts, for the production of which Darwin has had, by ignoring this, unnecessarily to multiply his gemmules. It may be doubted whether the influence of the environment is not more powerful in relation to development than even Dr Ross has had occasion to declare, and whether the semen does not contain potentialities rather than gemmules.

Dr Ross starts from the discovery of Burdon-Sanderson’s microzymes as the true contagia of vaccinia, smallpox, etc., assuming the probability that all other zymotic diseases have similar particles, gemmules, or microzymes, which are their contagia. He next inquires whether these are true germs, each capable of maintaining the life of an independent organism, or are merely particles thrown off from one organism, incapable of independent life, but capable of becoming implanted in a living body and setting up certain modifying changes in it. In the course of his inquiry, he points out that the germ theory has certain difficulties in the way of explaining the facts of contagion, and that it certainly is not the only mode of explaining these facts; and he then propounds another hypothesis based upon the idea of the contagia being not germs but merely living gemmules; this he calls the graft theory; and he shows, that as a scion modifies the stock into which it is grafted, so these contagious gemmules modify the living body into which they are introduced; and, for an explanation of how this is done, he has recourse to a modification of Mr Darwin’s pangenesis.

The influence of the scion in occasionally modifying the stock, so as to cause fruit and flowers of the same appearance as those of the scion to come from the stock below the graft, is certainly remarkable; but it is exceptional; and if from any cause the scion becomes separated from the stock, it seems not to be permanent. In animal grafting the stock is even less influenced by the scion than in vegetables. Epithelial cells from the skin of a negro implanted in a white man’s leg have not hitherto, we believe, succeeded in blackening his skin, though they have contributed their quota towards healing his sore. A cat’s tail and various teeth have been grafted into a cock’s comb, but no change in the disposition, habits, or appearance of the bird have been recorded. The alterations produced in the vegetable stock evidently depend on some other cause than pangenesis, and are probably due to the mode in which the juices of the plants are elaborated, and the manner in which the circulation is carried on. The more, in fact, we inquire into the phenomena of grafting, the less resemblance we find between them and those
accompanying zymotic diseases. The graft theory may be a distinctive enough term, and may be a good contradistinction to the germ theory, but it is not the less a misnomer, the theory involved is simply pangenesis from beginning to end, only modified to suit the generation of zymotics as distinguished from the ordinary generation of individuals.

Dr Ross is a man of varied learning, a patient inquirer, and a logical thinker, and, in the application of his theory to the phenomena of smallpox and of inflammation generally, he has produced some chapters which are well worthy of careful perusal, the interesting mode in which he explains the principal facts in the history of smallpox according to his theory being quite remarkable. In the later chapters, however, having reference to the phenomena of constitutional disease, he is not so successful. The graft theory may be a misnomer, and pangenesis a mistake, but no one can read the chapters we have referred to, without feeling that we have in them a most remarkable approach towards a rational explanation of the consecutive phenomena of smallpox. The failure, however, of the theory when applied to constitutional diseases, and even when applied to other zymotics, such as scarlet fever, in the explanation of which it is by no means so successful, prevent us from feeling that we are on sure ground, and lead us, while admiring Dr Ross's learning and ingenuity, to desire further information before adopting his views; and this all the more, that he has the happy knack, which he occasionally employs, of quietly dropping troublesome points which are difficult of explanation. Witness his quietly dropping all reference to the spontaneous development of zymotic diseases, the possibility of which would be fatal to the importance of any graft theory of their development.

On Affections of the Heart and in its Neighbourhood. Cases, Aphorisms, and Commentaries. (Illustrated.) By Horace Dobell, M.D., etc. London: H. K. Lewis: 1872. Pp. 128.

The Heart and its Diseases, with their Treatment. By J. Milner Fothergill, M.D., M.R.C.P. London: H. K. Lewis: 1872. Pp. 382.

The former of these works consists, first, of some preliminary remarks on Cardiac Physiology, most of which are extracted from Dr Fothergill's prize essay on Digitalis; second, of a description of a most elaborate Heart-bed, invented, but not patented, by the author, which may be found useful in some few cases who are impatient enough to require it, and wealthy enough to procure it; third, of a short notice on Clubbing of the Finger-ends as a symptom of Cardiac Disease—this is illustrated by three photographs, in which the hands are certainly sufficiently distorted, but in none of which is the clubbing distinctly evident—the letterpress description is fortunately more clear; fourth, of a long chapter on Pain in the Heart and its
neighbourhood; fifth, of a short chapter on the Interdependence of Affections of the Heart, Brain, and Lungs; and, lastly, of a short notice of Dr Quain's Lectures on Diseases of the Muscular Walls of the Heart, in which he points out, that before we acknowledge any great increase in the frequency of heart disease in the present day, we must first ascertain how much of what is now rightly included under that rubric was formerly distributed among those of dropsy, apoplexy, and paralysis; he also refers in strong terms to sexual excesses, and especially to self-abuse, as a prevalent source of disease of the cardiac walls.

The fourth chapter is, however, the more important one, both as to its subject and also in its length, for it occupies more than one-half of the whole work. A portion of this chapter was published about three years ago in the Medical Press and Circular. It consists mainly of a series of aphorisms laid down by the author as the results of his experience, and illustrated by forty-eight cases more or less fully narrated. Unfortunately, comparatively few of the fatal cases were examined after death, and therefore the author's view regarding their actual nature is neither confirmed nor the reverse, and must be taken for what it is worth. Pain in the region of the heart, however, arises from so many different causes, and, even when truly cardiac or aneurismal in its origin, is so often temporarily relieved by treatment directed to the stomach, that we fear this chapter, though a very interesting one, cannot be accepted as of much practical value.

Dr Milner Fothergill is already so well and so favourably known by his most instructive volume on the Action of Digitalis, that we are grieved to say we are disappointed with his present venture. There is a great deal of good work in it, but it has been both written and published in haste. The proof of the latter is, that it is full of trifling typographical errors; the proof of the former is evident in the want of clinical experience exhibited in its pages, coupled even with ignorance of contemporary literature. Dr Fothergill, for instance, talks in various parts of his work of tricuspid stenosis as if it never existed, or had never been diagnosed; but tricuspid stenosis, the result of cardiac rheumatism, though a rare, is by no means an unknown lesion. Within the last ten years three well-marked cases have been recorded in our own pages, and in one of these the diagnosis was accurately made by Dr Haldane during the life of the patient; while our own experience in the post-mortem theatre has taught us that it is very much more frequent than these isolated published cases would lead us to suppose. Dr Fothergill also states, that in mitral obstruction, the pulse is small and regular in bulk and time; and he contrasts this with the pulse of mitral dilatation, which, he says, is irregular in time, at least in its later stages; but clinical experience has taught us, as it will no doubt also teach him, that extreme irregularity of the pulse, though not in itself a positive indication of mitral stenosis, is yet much more frequently associated with it than with the opposite condition of the auriculo-ventricular
opening. Moreover, what shall we say of one aspiring to be a teacher in cardiac disease, who commences his teachings with such a statement as the following—"When the light thus falls on the thorax, a faint movement may be seen at the fifth intercostal space, synchronous with each radial pulse"? (P. 12). But an apex beat, synchronous with the radial pulse, would revolutionize cardiac physiology, and upset all our present ideas of cardiac pathology. In his remarks on cardiac innervation, Dr. Fothergill shows that he has read Professor Rutherford's instructive lectures (in the Lancet) on the Physiology of the Circulation; he must therefore, in his calmer moments, be fully aware of the error of such a statement, and of its disastrous results in relation to diagnosis, and a little more extended knowledge of contemporary literature would recall to his memory an egregious diagnostic blunder committed by a late distinguished physician, because he accepted as a fact, what Dr. Fothergill could only have stated from inadvertence—an inadvertence, however, which relates to a matter of such vital importance in regard to diagnosis as to condemn the book in its present form. Dr. Fothergill has already done such good work in relation to cardiac disease, and there is in this imperfect and hastily-written work so much promise of future excellence, that we hope by-and-by, when time and experience shall have mellowed his views, and taught him the value of the old motto, 

Festina lente, to meet him once more in this domain which he has chosen for his own.

On the Functional Diseases of the Renal, Urinary, and Reproductive Organs; with a General Review of Urinary Pathology. By D. Campbell Black, M.D., L.R.C.S. Edin., etc., etc. Pp. 350. London: J. and A. Churchill: 1872.

This work is not an easy one to criticise. It cannot be either faintly praised, or coldly passed over. There is much in it that a critic, if so minded, might hold up to ridicule—bits of fine writing which, selected at random and gibbetted in inverted commas, might easily afford merriment; wild theories unsupported by evidence; a sort of free-lance character eminently provocative of rebuke; but with all this, there is so much cleverness, bonhomnie, and frankness, and apparent honesty of purpose and distaste for quackery, that hostile criticism is disarmed. Besides this, the author has attempted a very difficult task, to discuss the subject which advertising quacks have rendered nauseous, in a manner which, though certainly free from pedantry, may almost be liable to the reproach of want of dignity. There is much evidence of haste in the whole work, and here and there the arrangement has rather a patchwork character; still it is an interesting, original, and will probably prove a useful work. The author can hit hard and fairly himself, using the club rather than the rapier, and that with a rollicking good-nature suggestive of Tipperary, but which may provoke many a retort; and some of the
digressions, especially those in notes, have a flavour of past and present local squabbles sufficiently amusing.

The chapter on the Conditions affecting the Secretion of Urine, with Special Reference to Suppression, is not satisfactory nor well arranged. Diabetes is discussed, and we are told it is, in one of its stages, intimately connected with deficient oxidation (p. 25). Again, that deficient oxidation of effete tissue must be looked upon as the immediate cause of gout and rheumatism. Suppression of urine from renal calculi is discussed at length, and illustrated by a long case from Dr Black’s own practice, the pathology of which is very doubtful, but which is certainly not one of suppression. We may conclude the first chapter by a characteristic extract:—“What is medical science? A few, a very few, ultimate facts; a chaos of isolated assertions and contradictions, innocent of the parentage of reason, but greedily accepted, according to the law of supply and demand, by a gullible public; ideas selected from the confusion of untutored brains (for that is of no matter, or rather it is an advantage) as fancy and the purpose to be subserved determine; a system of introducing into human bodies heterogeneous compounds and mixtures of which little, to effect changes of which less, is known; removing substances when they are believed to exist in the blood coincident with particular symptoms, and introducing them when they do not—a conflict in which nature often conquers. Like the schoolboy, running with his heart in his throat over the treacherous quagmire, the modern physician is unable to find a firm footing in the medicine of later days, and his dalliance with remedial (?) applications, and endless experiments on frail humanity, are comparable simply to the relations which subsist between the ‘fast’ young man and his tailor, or the ‘girl of the period’ and her accommodating milliner.”—(Pp. 65, 66.)

Now, half the fun of this sentence would be lost, had we not discovered, on Dr Black’s own authority, that “it is absolutely an ultimate fact, that this valuable preparation (tr. ferri muriatis, Pharm. Edin.) acts not only on the bladder, but I believe the prostate gland, and the corresponding organs in the female” (sic!).—(P. 233.)

The chapter on Functional Diseases of the Bladder contains a good deal that is trite and commonplace, even to a description of a case of retention after ligature of external piles, and also is filled up by a long disquisition on rupture of the bladder, which is certainly not a functional disease. The account of the literature of this subject is very imperfect, and evinces a considerable want of knowledge of the essentials of this very dangerous accident.

With Chapter IV. begins the real work of the author, on the Pathology and Treatment of Nocturnal Enuresis and Spermatic Incontinence. A dash into Feuchterleben’s views as to the sympathetic system heralds a confession of faith “in the theory which associates hysteria with some disturbance of ovarian, vaginal, or...
uterine coësthesia" (p. 159); but this is followed by a well-reasoned and manly discussion of the unsavoury subject. The practical observations on Treatment are sensible—nothing particularly new in drugs or vehicles. A pill, containing one grain and a half of powdered camphor and a grain of powder of opium, is given at bedtime, and forty minims of the tincture of steel is to be taken thrice daily in a wineglassful of water.

The remaining chapters discuss Sterility in the Male, Impotency in the Male, and anomalous Urethral Discharges, to which we must refer the reader. The book is nicely got up, and the table of contents and index are admirably arranged.

_Cancer: Its Varieties, their Histology and Diagnosis._ By HENRY ARNOTT, F.R.C.S., Assistant-Surgeon to St Thomas's Hospital, and Joint Lecturer on Morbid Anatomy in the Medical College. Illustrated by Lithographic and Wood Engravings, from Drawings by the Author from Nature. 8vo, pp. 86. London: J. and A. Churchill: 1872.

The author of this work has set himself to a hard, some would say an almost hopeless, task. He tries to present to his readers as clearly as possible the present stage of the inquiry into the classification of malignant growths by their microscopical structure. Among his qualifications for the task, he has one most important one, hopefulness; for he says, "Amongst the infiltrating tumours, some are far more truly malignant than others, and the degree of this malignancy—in other words, the prognosis of a tumour—can, in many instances, only be definitely settled by the microscope."

"Malignancy" is discussed under three different stages or degrees:—1. Recurrence _in loco._ 2. Infection of glands. 3. Formation of new tumours in other seats or organs. A good observation is made of a case of recurrence after the removal of an apparently isolated tumour amid muscles, in which the characteristic cells of the tumour were found in the tissues of the neighbourhood, though the growth itself was easily detached and appeared to be encapsuled. When discussing infection of glands, allusion is made to the views of MM. Cornil and Ranvier, "who have demonstrated that into the minute alveoli, which, packed with cells, form the characteristic structure of scirrhus, lymphatic vessels open, affording a direct and easy means of conveying the special juices, and possibly cells of the cancer, to the nearest lymphatic glands." Under the head of Secondary Tumours in other Parts, some very interesting cases are cited illustrating different ways in which tumours may be disseminated from liver to lungs, from glands to a serous membrane, from trachea to lung, and from optic nerve to cauda equina. From this it will be seen, and from many other points mentioned in the work, that Mr Arnott is not willing to allow the assumption of a previously-existing blood taint in cancer.
In the second chapter, a sensible practical account of the author's manner of examining tumours is given, and the reasons of his preference of sections to scrapings. In the third chapter, the diagnostic value of cancer-cells is discussed; and most surgeons will agree with the opinions expressed, that the distinctive features are to be sought in their arrangement, rather than in the form of the cells themselves. The following is the author's definition of a carcinoma:

"A tumour in which a more or less dense fibroid growth forms a sponge-like or cavernous framework, whose alveoli are filled with loose cells of an epithelial type, grouped together disorderly, bathed in a clear fluid, and having no visible intercellular material."—(P. 22.)

Now, while allowing the substantial accuracy of this definition, it is rather lumbering, and, we fear, demands a higher standard of precise scientific thought than is common in the profession, before it will be recognised as a description of an ordinary hard scirrhus. This chapter contains some most excellent observations on the life and development of the cancer-cell, and its relations to the stroma.

Villous, haematoid, melanotic, colloid, and myxoma, are the varieties of carcinoma described in the next chapter. The account of the pathology of colloid is exceedingly good and clear.

Sarcomata are next described, distinguished from carcinoma by the one great character, that the bulk of the tumour is built up of simple cells, bound together by a scanty, homogeneous, or granular semi-fluid substance, while in carcinoma the cells are quite free from any visible intercellular material, and float in the meshes of a fibrous stroma. The varieties of sarcomata are, spindle cell, round and oval cell, myeloid, and glioma, melanotic, osteoid, mixed, lymphadenoma, psammoma. We can hardly say yet, that this classification is much of an improvement upon its predecessors.

Epithelial cancer is described as a cancr oid rather than a cancer, and with it is grouped rodent ulcer.

In the last chapter, under the head Practical Summary, an attempt is made to show the diagnostic value of the usual signs of malignancy in the several forms of cancer.

On the whole, this work shows that the author has worked hard and honestly in the attempt by the microscope to classify the tumours; and if we cannot say he has succeeded, he has certainly made a valuable contribution to the literature of the subject.

The work has no index, and a most insufficient table of contents.

The Beginnings of Life: Being some Account of the Nature, Modes of Origin, and Transformations of Lower Organisms. By H. Charlton Bastian, M.A., M.D., F.R.S. London: Macmillan and Co.: 1872. 2 vols., pp. 1115, with an Appendix of 155 pp.

The first thing we have to remark in regard to this work is, that the copy sent us is imperfect, two pages (cxlix.–cl.) being wanting.
The imperfection does not, however, interfere with the general arguments of the work. Dr Bastian commences his work with an elaborate inquiry into the nature and source of the vital forces, and of organizable matter. In this he brings us gradually to see that all matter—containing as fundamental components carbon, oxygen, hydrogen, and nitrogen—is organizable, and that the word Life is a mere mental symbol connoting the sum total of the properties which distinguish what are called "living bodies," as much depending on the mere qualities and nature of the material aggregate which displays them as the properties of a metal or crystal on the results of the nature and mode of collocation of their component atoms. We have long been acquainted with similar views as to life, though these have been occasionally somewhat differently expressed; and some of us, at least, have regarded these properties as inalienably associated with the potentialities existing in the reproductive cells, derived from the first parent, or first parents, of every species in the organic world. In the succeeding part of his work, Dr Bastian shows this idea to be, from his point of view, an absurdly limited one; for, to evolve Life, or living action, he asks for no pre-existing germs, but merely for the presence of organizable matter exposed to the subtle influences of Light and Heat. The development of life in this mode he terms Archebiosis, and it resembles wonderfully what we have been long accustomed to under the term of the molecular theory of development, which Dr Hughes Bennett has done so much to illustrate. It does not appear, however, that Dr Bastian requires the presence of molecules, though molecular matter is the earliest stage of a development which subsequently progresses into various well-known forms of lower organic life.

The last part of his work Dr Bastian devotes to another mode of development, termed by him Heterogenesis, or the process by which already existing forms of life give rise to wholly different forms that exhibit no tendency to evolve into the parental type, or at any subsequent period to revert to it. This, too, is no novelty: more than twenty years since, Dr Gros described the evolution of those beautiful green animalized organisms termed Euglæna from a transformation or differentiation of the cell-contents of a fresh-water Alga; and similar observations have since been made by many other skilful observers. The Euglæna, in their turn, may be differentiated into fungus germs, into diatoms, desmids, amœbæ, or rotifers. So that, among the lower organisms, there would seem to be no stable partition between what is animal and what is vegetable, the one being capable of being differentiated into the other, and vice versa, according to laws as yet unknown.

Dr Bastian's work contains a most full and careful exposition of all the doctrines relating to spontaneous generation. He himself deals with these doctrines as facts, and applies them to supplement the Darwinian theory of evolution,—in explaining how the Foraminifera, for instance, still present the same simple type which they
exhibited in the most distant period of geological time—a fact which would be inexplicable, were the theory referred to true, as, according to it, they must long since have been variously modified, but which is readily understood if we conceive this simple type to be continually evolved *de novo*. It is obvious that, before Dr Bastian's opinions can be employed to support or controvert either Darwin's or any other views, the experiments on which they rest must be satisfactorily confirmed; and it may be many a long day before this is done. Meanwhile, we cordially recommend the work to those of our readers who take an interest in this question, which has a not unimportant bearing upon certain modern theories of disease, alike of man, beast, and plant—of which we may take cholera, cattle-plague, and potato-disease as the most striking examples,—and that all the more, that our endeavours to avert these and other diseases are very largely influenced by our ideas as to their mode of origin and propagation. Our adoption of the doctrines of spontaneous evolution and of heterogenesis into pathology would certainly revolutionize all our notions of such diseases, and would influence in a most remarkable manner our efforts at prevention.

*Year-Book of Therapeutics, Pharmacy, and Allied Sciences.*

Edited by Horatio C. Wood, jun., M.D. New York: William Wood and Co. 1872. Pp. 360.

About a year ago, the first part of a quarterly serial was issued, which bore the name of "New Remedies," and was under the same superintendence as the present Year-Book. On referring to its contents, we find them so nearly exactly alike, that there can be no doubt, though it is nowhere mentioned, that this Year-Book is simply "New Remedies" in a different form. Though the editor has taken a whole year to elaborate this volume, he has not taken the trouble to correct one of the mistakes into which he fell in the early numbers of his serial. Dr Donkin, of skim-milk celebrity, still figures as Dr Duncan; and our own Professor Lister is concealed beneath the time-honoured name of Liston. These, and a number of other similar blunders, show that Dr Wood has not even been at the pains to collect his material at first hand, but has taken it where he happened to find it most readily, swallowing everything without inquiry and without verification, and reproducing them now in the same crude form they were at first given to the world. Hence we have, in the earlier part of the volume, a long and elaborate statement of the marvellous cancer-curing powers of condurango, which, some pages on, we find has been clearly proved to have no virtues at all. Where so many modes of treatment and formulae are collected from all parts, it is impossible but that some useful things have been included; but the work has no scientific value, and, even as a practical compendium, it is not above the level of a druggist's receipt-book.