twenty years has been so decided that we are surely justified in believing that it will continue, and at last enable us to understand much that is at present inexplicable to most men; for we must remember that there are some people who profess to understand everything, and succeed in deceiving the simple by a deluge of words.

It would serve no useful purpose to pass in review the eleven chapters of which the book consists. No important topic is omitted, and Professor Hare contributes an article on the surgical treatment of intracranial tumours.

This contribution to scientific and clinical medicine will still further advance Dr. Bramwell's reputation as a physician and author. It is a first-rate book, admirable in every respect.

Evolution and Dissolution in Disease. By C. Pitfield Mitchell. Longmans, Green, and Co., 1888.

The purpose of this book we must give in the author's own words. It is, viz., "An attempt to co-ordinate the necessary facts of pathology, and to establish the first principles of treatment."

The claim upon our consideration of an attempt such as this is a serious one, for, in view of the progressive accumulation of facts in medicine—an accumulation exceeding our powers of storage—we shall welcome very warmly any system which will help us to bring these facts together, and so make them more available.

The aim of the author is to apply to pathology those principles which have been established in the physical sciences, and which have already been applied with so much success in the interpretation of the laws of life by Herbert Spencer. Two formulæ, viz., the formula of dissolution, and the formula of evolution, each, as stated by Spencer, are then brought to bear on the facts of pathology, and, by the author, are found adequate to co-ordinate them. Mr. Mitchell travels over the whole range of pathology—inflammation in all its stages and in all its issues, the degenerations, new growths, malformations; then, in a separate section, special disease, which is made to include the diseases of the different systems of the body, and the diseases of the whole body, *e.g.*, the fevers. To each and all of these the above formulæ are applied. With this the chief part of the work is completed, but in a concluding part, headed Implica-

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tions, some important points in ætiology, with suggestions as to treatment, find consideration. This concluding part, though small, must, by the practical, be held to measure the rest of the work.

To examine more in detail. The formula of dissolution which the author quotes, and which, to readers unfamiliar with Spencerian phraseology, may sound very cumbrous and obscure, may be illustrated with advantage by an example:—When the sword or axe of the Frank broke in pieces the Soissons vase, and when, in turn, the axe of Chlodowig broke in the offender's skull, physically speaking we may interpret the events as follows:—The incidence of the blow on the vase or skull, the disappearance or spending of the force of the descending weapon, and the disintegration of a more or less complicated structure. It will be simpler to confine our attention to the case of the vase. The blow has fallen, its force has been spent in bursting the structure of the vase, indeed, its force has appeared in part, at any rate, in the flying fragments, and structure (the vase) has given place to relative absence of structure (the heap of fragments). The question before us is: may we see underlying the complexity of a pathological process a simplicity like to the above? To believe in an affirmative would be delightful.

Mr. Mitchell, taking inflammation in the first instance, selects a diagram from Ziegler, and he points to the picture of the inflamed parts, as exhibiting a condition which may be described as active disintegration. The vessels, from being contracted, have become dilated, and the tissues are becoming invaded by a host of cells, both white and red, which are flying, as it were, from a centre, instead of keeping to their orderly movements along prescribed paths. The picture is, in truth, very like a disintegration—the giving way of structure to the relative absence of structure; and this becomes still more apparent if we follow up the process to the production of an abscess, in which stage we have exchanged the complexity of the tissues for the simplicity of a cluster of white cells, floating in a liquid. So far as the process is considered in its results it may be said to conform strictly with the formula of dissolution. The part which has become the seat of inflammation has, indeed, passed "from a definite, coherent heterogeneity to an indefinite, incoherent homogeneity;" and, at the same time, the complex functions of the part have been replaced by relative absence of function. But this degradation of structure, and

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of function, is not the whole of the formula of dissolution, for the formula states that there is a "concomitant absorption of motion," and it implies that this absorbed motion is the cause of the above dissolution. In the case of the Soissons vase, none can deny that this is the case, for the loss of form and of function (its power to hold water or wine) was caused by the blow of the axe. But when we examine inflammation is this so? Mr. Mitchell answers yes, and he sees, in the various causes of inflammation, always the absorption of an excess of energy, *e.g.*, in the influence of heat, electricity, mechanical irritation, chemical agencies. But we think that the statement that chemical excitants of inflammation act always by the giving out of energy requires proof, and we believe that the proof will not be forthcoming. Still more difficult will it be for Mr. Mitchell to show how cold acts as a cause of inflammation, and here we do not mean merely that cold which acts on the tissues by prolonged starvation, by prolonged anæmia, but also that cold which in its intensity may at once be followed by the inflammatory process. Why, indeed, the abstraction of an excess of energy should not be as effective in destroying the vitality of a part as the absorption of an excess of energy, and should not thereupon be followed by inflammation, we do not see. True, in the former case, the formula for dissolution is no longer applicable; but is it applicable even in those cases where absorbed energy excites inflammation? The author sees in the altered movements of the fluids and corpuscles in the inflamed part the *equivalent* of that absorbed force which started the inflammation, much as in the disruption of the particles of the vase the energy of the blow of the axe was to be sought, but in reality there is no such equivalence in the case of the inflamed part. If an india rubber ball be distended with air and you prick it there will be no equivalence between the force of the prick and the energy let loose in the escaping air. Just as little will there be equivalence between the escape of fluids and corpuscles whose motions have been under restraint, and the force which removes that restraint.

These objections to the application of the formula *in its completeness* have struck us forcibly, and they recur in some of the subsequent chapters on the retrograde metamorphoses, etc.

The chapter on neoplasms is a complicated one, and some of the suggestions appear somewhat hazarded, *e.g.*, the relationship between the origin of growths in tissues and

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the distance of those tissues from the centre of the circulation. Mediastinal tumours are not uncommon, yet they arise near the fountain head!

In the chapters on special disease we find much that is very suggestive. The statement that the degradation of an organ in its structure and function occurs in the reverse order of its evolvement, *i.e.*, that the more elaborate mechanism and function are the first to disappear in disease, as in health they have been the last to appear—this, probably, is profoundly true. Then, again, the mode of origin of the scleroses is very admirably discussed.

Part III, headed Implications, is a very short section of the work, but it summarizes very clearly the main propositions contained in the two preceding sections; and, at the same time, it discusses some points in ætiology of cardinal importance. The question of heredity is really very ably handled, though we must dissent from some of the reasoning. This part will well repay careful reading. We would willingly do battle with Mr. Mitchell as advocates of heredity in the matter of predisposition, for whilst we do not believe that diseases are handed down as entities, yet we are convinced that there are two parts concerned in disease—the exciting cause, or that which *acts*, and the organism, or that which *reacts*, and that the one is as essential as the other. Will not the organism, as a more or less favourable field for the play of external forces, be subject to heredity?

But we may not fight this out, and we would only add that Mr. Mitchell's book is philosophical in its conception, and that it is well planned. It will incite the careful reader to much profitable reflection. It is a little to be regretted that the language is not as simple as it might be. Amongst the subjects considered we would specially single out the section dealing with special disease, and from the concluding section (Implications) the subjects—heredity and organic equilibration.

Whence Comes Man: From "Nature" or from "God?" By Arthur John Bell. London: Isbister, 1888.

Mr. Bell's work is an attempt to solve the great problem of the origin of existence. He first selects Professor Flint as the representative of theism, raises the same objections to the arguments from efficient and final causes as Kant, and pushes them with a good deal of shrewdness. Having satisfied himself that philosophical proof of the existence of a

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