

accustomed to. That it would be gross cruelty, unworthy of the days we live in, to refuse to the majority of our suffering patients anything in moderation that would lighten their lot, no one would dream of denying. I cannot but think, nevertheless, that there are cases, especially those of moral insanity and ones characterised by an amount of wanton indulgence in their vagaries, in which a slight taste of some of the discomforts which, outside, would inevitably follow the breaking of human or natural laws, does substantial good. I have observed many insane persons of the types I have mentioned capable of exercising great self-control when they were made conscious that their pleasure, if not their comforts, would be curtailed in the event of their indulging in forbidden ways. As at present treated, however, they, in most instances, lose the bracing and healthy effects of adversity, and often do not suffer in the slightest from the consequences of their own acts, even when these are vicious and wanton. Such a state of matters would be admittedly utterly bad for any one in the general community, and it surely cannot be good for the many within our walls who have not gone far beyond the boundary that separates them from their sane brethren.

It is not a very rare occurrence to find patients sorry to leave and almost glad to remain in or return to an asylum, where they have experienced nothing but what was more agreeable and luxurious than they had previously been accustomed to. At first sight, an instance of this seems only creditable and pleasant to all concerned, but a deeper view would, I think, convince most people that the feeling is, at bottom, an entirely bad one for the patient, and that it would be better for him, and more tonic for his powers of self-control, were he to feel the necessity of calling these into play to keep himself at large in the outside world.

PART II.—REVIEWS.

Leçons sur l'Histologie du Système Nerveux. Par L. RANVIER, Professeur d'Anatomie générale au Collège de France, etc. Paris, 1878.

A course of lessons or lectures on the histology of the nervous system by one who is generally, and as we believe justly, regarded as occupying the very foremost rank among the anatomists of the day, cannot but be of interest to all engaged in the practice of scientific medicine, and to none more than to those who by histological inquiry or by clinical research are specially concerned with the study of nervous structure and phenomena. And it may be at once said that not only on account of the nature

of the subjects treated of in these lectures, but also for the manner in which they are discussed and set forth, will the volumes before us well repay careful perusal and study. The separate histological questions considered are indeed not numerous, but this is owing to the care and minuteness with which each in succession is discussed; minuteness coupled with a lucidity of exposition which is rare as it is admirable. It seems to us, indeed, in reading these lectures that we are actually in the presence of the teacher, that we hear his words and witness his demonstrations. Each point, as it is introduced, is taken up in a way which cannot fail to attract attention. The labours of other histologists in the field under discussion are given, their methods of research described, their opinions and conclusions passed in review. And then the subject is grappled with afresh; the processes recommended as best adapted to display histological structure are minutely described, the results examined, compared with each other, and delineated; the effects of experiments are adduced, physiological facts appealed to; and, finally, the conclusions arrived at are clearly enunciated. And if, by an occasional remark, we are reminded that the lecturer is addressing students of histology rather than matured histologists, and bestows hardly sufficient weight on the opinions of others when these happen to clash with his own, yet it must be added that doubts, when they occur, are freely expressed, and any want of definite knowledge fully admitted.

Coming to the more special consideration of the text, we observe that the author devotes the first sixteen lectures to the demonstration and description of nerve fibres, including the medullated (*nerfs à myéline*) and the non-medullated (*fibres de Remak*); the fibrous connective tissue and the vessels of nerves coming in for special study. The clearness of M. Ranvier's teaching, before remarked, is specially noticeable here. It is such that, given very ordinary materials, but given occasionally also it should be said for this country a "vivisection license," the student may readily investigate for himself the statements advanced by Professor Ranvier. In regard to the medullated fibres the description is most close and exhaustive, especially that relating to the *annular constrictions* (*étranglements annulaires*), and the *incisions of Schmidt*. According to the author the constrictions of the nerve tubes serve to prevent displacement of the myeline of the tubes, and are also the channels through which the

nutritive plasma gains access to the axis cylinders. We must express some surprise, by the way, at the statement made (p. 51) to the effect that all histologists have followed Henle, and fallen into his error in considering that the axis cylinder does not exist as such except as the result of *post-mortem* changes. In this country, at least, several of our most competent observers agree with M. Ranvier in holding a contrary opinion. Remak's fibres, the author holds, constitute a special system of fibres destined mainly, though not entirely, for the supply of the organic system, and he contests the theory which has found acceptance with some that they are to be considered as imperfectly developed medullated fibres.

In the examination of the nerve tissues M. Ranvier recommends specially the employment of osmic acid in one *per cent.* solution, both for hardening and also as a medium in which to dissect nerve tubules for examination in the fresh state. As staining fluid he brings into use *picro-carminate, carmine, nitrate of silver, and logwood. Careful directions are given for the employment of all these re-agents, those for logwood, a valuable but troublesome substance, being thus stated: "In a solution of alum of 1 to 200, pour drop by drop a strong solution of crystalline hæmatoxyline in absolute alcohol. The liquid assumes a pale violet hue at first, which gradually deepens at the same time that a precipitate is deposited. In a few days the liquid becomes deep violet and is then fit for use, its staining as well as its selective properties being at their *maximum*."

The observations of Professor Ranvier on the microscopic appearances of the *living* nerve fibre will be read with interest, and coming from so high an authority may, we venture to think, satisfy the objections and scruples of those who see in all re-agents as applied to the study of animal tissues a fatal source of fallacy and error. In the lung of the *living* frog, by means of the apparatus of Holmgren, M. Ranvier demonstrates in the nerve fibres traversing the organ, the axis cylinders, the annular constrictions, and the incisions of Schmidt, just as he has done after the application of osmic acid in the case of the nerve fibril removed from the animal. On this head we regard M. Ranvier's summing up as having an importance and a significance not easy to over-estimate. He concludes in these terms—"Being

* Picro-carminate of ammonia—A substance formed by adding a solution of carmine in ammonia to a saturated solution of Picric acid and evaporating. M. Ranvier recommends a solution of one *per cent.* for staining.

thus able to distinguish in the living nerve all those conditions previously demonstrated by means of re-agents, we are warranted in concluding that our re-agents are good, and that the results obtained by their means are reliable."

The important subjects of the degeneration and renewal of nerves after section in the living animal are next treated of at length. The degenerative changes which take place in the peripheral end of the nerve so cut are considered by M. Ranvier to be the following: There first occurs a transverse segmentation of the myeline (white substance of Schwann) of the fibres, and conversion of that substance into globular masses. This change is associated with fatty degeneration of all the protoplasmic elements of the nerve bundles. The axis cylinders of the fibres next break up at intervals, and finally disappear. When the regenerative process commences nothing but the external sheaths of the nerve tubes containing fatty cells and granules and occasional small masses of protoplasm remain, and this transformation is found to extend along the entire *peripheral* portion of the cut nerve. In the *central* end of the nerve the principal change which occurs has reference to the axis cylinders, which become hypertrophied and markedly striated. These alterations form the starting point of the regenerative process, new axis cylinders being formed by longitudinal segmentation of the original rods, and each new axis cylinder serving as the origin of another nerve tube. It is by the growth of these nerve tubes of new formation in the *central* segment of the cut nerve, and their penetration into the peripheral portion, that continuity and regeneration of the nerve is brought about.

We cannot here do more than mention the two remaining subjects treated of by M. Ranvier in the present volumes. These subjects comprise a description of the nervous arrangement in the electrical organ of the *Torpedo* with special reference to the mode of termination of the nerve fibres therein; and, finally, a most exhaustive inquiry into the termination of nerves in striated muscular fibre, in which the author passes in review the numerous opinions which have been held on this important question, and demonstrates the result of the most recent researches in respect to it.

A large number of highly illustrative plates greatly enhance the value of the work, and as to each there is attached a full explanation, a very small knowledge of French will enable any one, if a little practised in histological research, to grasp

the leading facts presented by the author. But the method of study inculcated by M. Ranvier, the careful investigation, the cautious deduction, the philosophic reasoning, can only be appreciated by a close study of the lessons themselves, and this we venture earnestly to recommend to those engaged in anatomical or pathological research.

Modern Philosophy, from Descartes to Schopenhauer and Hartmann. By FRANCIS BOWEN, A.M., Alford Professor of Natural Religion and Moral Philosophy in Harvard College. London: Sampson Low, Marston and Co.

A glance through the pages of this volume is enough to show that it is not what, by its title, it purports to be, namely, a treatise on Modern Philosophy, from Descartes downwards to Schopenhauer. It contains a very full account of Kant's philosophy, and goes into great length in describing the two latest German outcomes of modern thought, those of Hartmann and Schopenhauer; but it has not a word to say of Hume, and leaves out of consideration altogether the origin and increase of that current of philosophical thought which has been growing stronger and stronger, until it now almost carries everything before it. No one would obtain from Mr. Bowen's book the least notion of the true filiation of modern philosophy; when he says, therefore, that he has endeavoured to present a full analysis and criticism of the systems only of those great thinkers whose writings have permanently influenced the course of European thought, we are disposed to think that he has mistaken what has permanently influenced his own thought for a permanent influence upon European thought—two very different things. Mr. Bowen's philosophical ideas are by no means the measure of European thought. It would be sad if they were, for they seem to have been singularly unprogressive: nearly forty years of diligent inquiry and reflection, he tells us, "having served only to enlarge and confirm the convictions with which I began, and which are inculcated in this book." If a man, at the end of a period of forty years, thinks just what he did at the beginning of it, we should be apt to think it was high time for him to retire from the teaching of philosophy to University students.

This just criticism made, we gladly testify to the interesting and instructive way in which Mr. Bowen has done the