

from diseases and accidents peculiar to childbirth amount to 4.83 per 1,000, they exceed this amount whenever women pass within the walls of lying-in hospitals—increasing to 5, 6, 7, and in one instance to above 19 per 1,000. If we confine our attention to puerperal diseases, we find that, while the death-rate for all England from these is 1.61 per 1,000, it mounts up in workhouses and other lying-in establishments to 3.3, 3.9, 4.1, and 14.3 per 1,000. In King's College Hospital lying-in ward, the puerperal disease death-rate was nearly 29½ per 1,000. By using Dr. Lefort's data, which give the death-rates from all causes at home and in hospital, in various European countries, it is shown that the approximate death-rate at home is 4.7 per 1,000, while in lying-in institutions it is no less than 34 per 1,000.

Miss Nightingale discusses the causes of these immense death-rates, which, she reminds us, occur among women undergoing not a diseased, but a perfectly natural condition, among whom a death "is little short of a calamity," and "almost a subject for an inquest." We cannot enter into the discussion, but we can say distinctly what is the impression produced by the evidence. It affords another illustration of the danger of unenlightened philanthropy. Some one takes pity on poor suffering women, and forthwith builds an hospital for them or gets it built, without a thought, apparently, of what organic laws of human nature he is about to violate. Nature takes no account of his good intentions, but just goes on, as Miss Nightingale has elsewhere said, "to levy her own cess in her own way."

The practical result of the whole discussion is that lying-in establishments, as at present managed, are destructive of human life, and should be forthwith closed, and that poor women should, as a rule, be attended at home.

The case, however, is not altogether hopeless; and Miss Nightingale proceeds to show how an institution for training midwives and midwifery nurses can be planned and managed without risk. The whole secret consists in assimilating the establishment to home conditions, whatever the cost may be. The evidence shows that in such an institution there would be no more risk than at home. The difficulty, as it appears to us, would be in the cost and in the perfection of management required, which could only be attained by persons practically conversant with physiological laws. But, at the same time, there can be no question of the superior advantages for training which such an institution would afford. This portion of the book is illustrated by plans of existing hospitals, and of the proposed training school. It contains a large amount of valuable detail in small compass, well worthy the attention of the medical profession and the public at large; concluding with an appeal to women, desirous of entering on medical studies, to make this department of practice their own.

The book, as its title implies, is tentative, and there is prefixed to it a quaint dedication to "the shade of Socrates' mother," including a call for help to "the questioning shade of her son, that I, who write, may have the spirit of questioning aright, and that those who read may learn not of me but of themselves." If this Socratic spirit of "questioning aright" were more cultivated, we should have fewer philanthropic mistakes, and science would be less troubled than it has been of late by dogmatic assertions and crude speculations.

### OUR BOOK SHELF

*Text-Book of Geometry.* Part I. By T. S. Aldis, M.A., Senior Mathematical Master, Manchester Grammar School. (Deighton, Bell, and Co.)

WE are much pleased with this book as a good text-book for teaching geometry. It is evidently the work of one who has been at the pains to consider well what are the difficulties which the average pupil encounters. It is the work, too, of one who has seen what the fault of the school teaching of geometry has hitherto been, and who is determined, as far as lies in his power, to remedy it. The evil of school-teaching has been that Euclid has been learned by rote, or when things have not been so bad as that, its propositions have been regarded too much as only abstract truths, which neither have been elucidated by, nor have been used to elucidate natural phenomena or the ordinary things of life. Mr. Aldis supplies this defect by an admirable series of examples and exercises appended to each proposition, calculated to give a practical turn to the whole study in the mind of a beginner, and to familiarise him early with the idea that he can really make use of the subject, and can give it a vast variety of application. Mr. Aldis frequently gives more than one demonstration of the same proposition. This also is very useful in teaching, inasmuch as it practically informs the pupil that the truths of geometry are independent of any particular demonstration of them, and gets him into the habit of approaching any problem from more than one point of view. The present is a first instalment. It contains pretty nearly what is in Euclid's first four books. J. S.

*Populäre Wissenschaftliche Vorträge.* Von H. Helmholtz. 2tes Heft. (Braunschweig: Verlag von F. Vieweg. London: Williams and Norgate.)

THIS part of Helmholtz's essays reminds us in many respects of Tyndall's lectures—in their clear and eloquent language, eminently adapted for popular comprehension, their freedom from technical expressions, except where these are unavoidable, and in the original mode in which well-known facts are dealt with and used to illustrate profound scientific truths. The work contains six lectures, of which three are devoted to recent advances in the theory of vision, one to the correlation of the physical forces, one to the conservation of force, and the last to the objects and advances of science. In the three lectures devoted to the eye, whilst extolling its perfection as an instrument in the mode in which we use it, he points out its various defects; the blind spot, the blind lines and striæ corresponding to the vessels, its incapacity to focus equally red and violet rays, the want of uniformity in its refraction as indicated by the lines that appear to proceed from a star, &c. He discusses the various colours of the spectrum, and represents this not in the mode usually adopted of a circle with segments of various sizes corresponding to the several primary colours, but as a triangle, of which green, violet, and red occupy the angles, and blue, yellow, and purple the sides, white having an eccentric position near the yellow. Violet, which he was formerly indisposed to regard as a primary colour, he again admits, and he seems inclined to advocate, as best explaining the phenomena of colour-blindness, the views of Young: that there are special nerves for perceiving red, green, and violet rays, an opinion that is less surprising in view of Brown Sequard's conclusions in regard to the number of channels for special sensations contained in the spinal cord, and which is also supported by the remarkable specialisation shown by Helmholtz himself to occur in the branches of the auditory nerve indicated by the phenomena of certain defects of hearing. The chapters on the correlation of the physical forces and the conservation of force, subjects that are now familiar to most scientific Englishmen, are very interesting, as being, to use the German phrase, amongst the original path-breaking essays on these subjects.

H. P.