

again the story of Confalonieri's arrest, trial, and condemnation, and implies that the Count was not so amiable as he is usually pictured; but no detractor has hinted that Confalonieri departed from dignity during his fifteen years of immense suffering.

Having terrified the Milanese by stern repression, the Austrians adopted the policy of encouraging all kinds of enervating dissipation. One of their favorite methods was to subsidize the Scala Theatre and to maintain there the most famous ballet in Europe. The habits of La Scala would not be likely, they thought, to engage in the more serious business of conspiracy. Signor Barbiera describes at length the reign of the ball-dancers—of Corrito, Taglioli, and the incomparable Fanny Elssler—whose triumphs have become legendary. The story is not wholly edifying, but it gives with sufficient exactness one of the nineteenth-century phases which had a bearing, however slight, on history. A considerable number of the Milanese dancers married into high life, and one, at least, who was the mother of Count Zichy's children, had a real influence on a dramatic crisis, if it be true, as Signor Barbiera states, that it was the threat to massacre her and her children which led Zichy to surrender Venice without a blow to the insurgents in March, 1848. Only a few weeks earlier Metternich had dispatched Fanny Elssler from Vienna to Milan, in the hope that her return might divert the Milanese once more from politics; but she danced in vain; the Milanese were cold, and the "divine" Fanny quitted their city, crestfallen, only a short time before the great uprising. Is it not possible, by the way, to establish once for all the truth or falsehood of the old gossip, here revived, that Fanny Elssler hastened the death of the Duke of Reichstadt?

Signor Barbiera devotes nearly twenty pages to Leopardi's sojourn in Milan, whither he went at the invitation of the publisher Stella to bring out a new edition of the Latin classics. The account is necessarily meagre, for Leopardi stayed only a few weeks, and Signor Barbiera has discovered nothing new of importance. He writes more fluently again when he takes up the story of the conspirators of Young Italy—especially of Count Rosales, one of the promoters of the seriocomic invasion of Savoy in 1834, and of Giuditta Siodoli, Mazzini's heroic coadjutress, and the only woman whom he seems to have loved. One wishes that Signor Barbiera, in describing her relations with Mazzini, had dropped his florid style and used the simple speech of facts. All that concerns Mazzini's political life has been so often written about that the time has come for recording whatever may throw light on his private and personal character, which shines the more the more it is revealed.

There are half-a-dozen other papers, on Bazzoni, Amari, Luigi Dottesio, and Giuseppina Perlasca, Duke Sigismondo Castromodiano, Massimo d'Azeglio at his villa on Lake Maggiore, and on Verdi and Giuseppina Strepponi, the singer who became his wife. They have the same qualities as their predecessors; and they all help, even by their defects, to illustrate the social and political life to which they refer. We tire of hearing that the women were nearly all irresistibly beautiful, and the men generally heartless lady-killers; but, notwithstanding, the book has more than a modicum of historical value, and it is usually entertaining.

*Mathematical Essays and Recreations.* By Hermann Schubert. Translated by Thomas J. McCormack. Chicago: The Open Court Co.

*The Study and Difficulties of Mathematics.* By Augustus De Morgan. Chicago: The Open Court Co.

Prof. Schubert's reputation will not be enhanced by his 'Mathematical Essays.' His essay on circle-squaring, with its ungainly German style, has to compete with the 'Budget of Paradoxes.' It contains nothing more except ancient quadratures noticed in every recent history of mathematics, Lindemann's demonstration of the impossibility of the geometrical problem, which is far better treated in Klein's 'Problems of Elementary Geometry' (Ginn & Co.), and one vague notice of a Hamburg crank. An essay on the mathematical-ly uninteresting subject of magic squares might easily have been compiled from President Barnard's old book on the subject. A paper on the fourth dimension is interesting only where it touches on the other world, where it ceases to be mathematical. Two chapters on number are commonplace and inferior. A discussion of the nature of mathematical reasoning seeks to carry us back to the ideas of the last century. It concludes with this remark:

"Mathematical knowledge, aristocratic as it may appear by the greater certainty of its results, will, so far as the advancement of human kind is concerned, never be more than a useless mass of self-evident truths, unless it constantly places itself in the service of the other sciences."

This condemns the great body of recent mathematics; but it is sufficiently refuted by Prof. Schubert's own chief contribution to mathematics, which in no way considers the desiderata of other sciences, but is crowded with such propositions as this: "The number of surfaces of the second degree touching any nine given surfaces of the second degree is 666,841,088." These are certainly not "self-evident truths."

De Morgan's book is one we are glad to see again. Though it was never a work of any moment, it might, especially when it was first printed in 1836, be useful to those whom all mathematics puzzle. Since that time, mathematics has been revolutionized, above all in its philosophical aspect, and nobody did more to refute some of the logical notions here put forth than De Morgan himself. The portrait of the author is a likeness, though a very wooden one, altogether inferior to the photograph in his widow's memoir of him.

These two books are the second and third volumes of an easy mathematical series of publications, of which Lagrange's 'Lectures on Elementary Mathematics' formed the first. The undertaking is commendable. We suggest that the editor would do well to have somebody at his elbow to prevent his speaking of Schubert as mainly distinguished as the author of a school arithmetic, or of De Morgan as a man to be compared with Huxley and Tyndall, but far higher than either of those two as an investigator of his science. The publishers should also understand that mathematics has begun and is still advancing quite as rapidly as chemistry, and that an old survey of mathematics is of as little use, except historically, as an old text-book of chemistry. It does not need a Lagrange to write an introduction to elementary mathematics.

A paper-weight will fulfil its function no whit the better for having been broken off the Great Pyramid. What is required is a sound, all-round understanding of the drift of modern mathematics, especially in its philosophical and logical aspects. There are many men and women in the country who could write much better books for modern beginners in mathematics than either Lagrange or De Morgan, or any other of the great men of the past.

*Naturalism and Agnosticism.* [The Gifford Lectures delivered before the University of Aberdeen in the years 1896-'8.] By James Ward, Sc.D. London: A. & C. Black; New York: Macmillan. 1899. 2 vols., pp. 302, 294.

When Mr. Balfour, a few years ago, assaulted in debate, under the name of Naturalism, the modern views which have evolved out of and supplanted the old Materialism, many of his professional critics hastened to object that the system which he attacked was a creature of his imagination, and that, even if there were a consistent body of such doctrine, the name itself of Naturalism was badly chosen. But now we have Dr. Ward, a professional if ever there was one able to speak with the authority of the schools, endorsing Mr. Balfour's terminology, and selecting the same name to designate the mistaken tendency in modern scientific thought of which he gives in these volumes so careful an analysis. For the Cambridge professor examines with admirable lucidity the three chief forms in which Naturalism commonly occurs, in the mechanical theory, the theory of evolution, and the theory of psychical "epiphenomena," and shows how in each of these cases the root-error of Naturalism recurs, arising from the natural tendency to take as ultimate truths about the reality of things what are only methodological assumptions, made by a special science in pursuance of its proper object of systematizing a certain aspect of experience. He traces with untiring patience the details of the process whereby the theories of evolution and psychophysical parallelism (as naturalistically interpreted) connect themselves with and merge into the mechanical theory, forming an imposing system of Naturalism which pretends to formulate all things in terms of matter (or, perhaps, some still more shadowy "non-matter") and motion, and for which the conceptions of freedom, activity, causation, consciousness, purpose, and value have become otiose and unmeaning.

Dr. Ward goes on to show that the naturalistic view of the world is not self-sufficient. It had set out from the dualistic assumption, a *caput mortuum* of the "two-substance" metaphysics of Descartes, that mind and matter were alien and different in kind. In this dualism it could not hold the balance even, but was forced by its method to assign the primacy to matter, as being alone scientifically calculable and measurable, and to treat mental phenomena as the "epiphenomena" of an automaton which had, inexplicably, grown conscious—thereby relapsing into practical materialism. It had subsequently realized that matter in itself was unknown and unknowable. Hence it had struck up an unnatural and ill-assorted alliance with an Agnosticism which betrays it into the hands either of scepticism or of a spiritualistic and ideal-