one could hear, 'Duchess, how ever do you fix your hair?'" Another is a personal experience. She had obtained invitations to the Mansion House for a Southern gentleman and his daughter.

"Rarely," she says, "have I felt so humiliated as I was by the deportment of this sometime Governor of a State—this haughty, self-sufficient slave-owner, who thought himself the equal of any peer in the room, but who, from time to time, relieved his cough in that American mode which Mrs. Trollope characterized as disgusting."

The "vice of slavery" is ingeniously held accountable for that sometime Governor's bad manners, but we feel that he should bear the whole blame of causing a nice young lady an anguish which is keenly remembered for forty years. Mrs. Crosland forgave him more easily than she could forgive Miss Mitford, whose selfishness on a certain occasion put her to great discomfort, and to whom she devotes several pages that show a perfectly righteous asperity.

The reminiscences end in the early sixties, and we regret that they have not been carried further. Though they cannot be described as brilliant or exciting, they are full of amiability and good sense, and make a most readable addition to pictures of life and manners in the early Victorian era.

An Elementary Treatise on Fourier's Series and Spherical and Ellipsoidal Harmonics. By William Elwood Byerly. Boston: Ginn & Co. 1893.

Lectures on Mathematics, delivered in August and September, 1893, at Evanston, Ill. By Felix Klein. Reported by Alex. Ziwet. Macmillan & Co. 1894.

NOTWITHSTANDING its name, so redolent of Helicon, there is mighty little poetry in Spherical Harmonics. The blessed, after a thousand years' performance on harps, may possibly betake themselves to setting one another problems in modern geometry; but to spherical harmonics we may confidently assert they will not resort. This subject might be called the conveyancing of mathematics, since it teaches how to express facts in a form which, though it affords no insight into causes or essences, but on the contrary is blind and bewildering, is for all that quite indispensable for making the mathematician master of his data. The usual problem is this: A certain quantity has a value at every point of some surface—most usually, that of the earth. This value—it may be elevation above or depression below the sea level, or the distance of the sea level from the centre, or the force of gravity, or a magnetical constant, and so on—has been ascertained at many points, and is assumed to vary continuously. (Most experts will say no such assumption is made.) Then, spherical harmonics shows us what we may presume to be the approximate values at points where the quantity has not been observed. Moreover, it affords a general expression for the value; still further, it shows how to cut up the quantity into parts, each of which is susceptible of further mathematical treatment. It is, thus, a theory (for so mathematicians use the word theory) of great utility; and, like other utility-mathematics, is tedious, difficult, disagreeable, and unbeautiful. This is a circumstance which breeds many loathers of mathematics, because these disagreeable branches are taught first.

The present treatise is undoubtedly the best in our language upon this subject. Its only rival, that of Todhunter, always an unnecessarily dry book, is now pretty antiquated likewise. Mr. Byerly adheres to one point of view pretty consistently, exhibits the doctrine under its best aspect, and leads us into it by the easiest road. It is a branch which nobody but a practical mathematician will care for, and which every practical mathematician has to master.

When we turn from this book to Klein's lectures, we seem to be passing out from a tremendous, rattling factory, with its grimly earnest, unlovely economy, into the pure meadows with the really vastly greater, but infinitely calm, agencies of sunshine, breeze, and river. Here, in only a hundred pages, the moving impulses of modern mathematics are set forth in a way in the highest degree instructive and interesting to every mathematician, without any tax upon his energies. Felix Klein, we need hardly say, is generally considered as the most interesting, if not the greatest (certainly *not* in all respects), of living mathematicians. For such a hundred pages as these the mathematician may search in vain. The small compass renders the process of mathematical cogitation all the clearer, and strips it of details which in other books obscure it; and particularly of details of demonstration that are often wrongly taken to be the soul of mathematical thinking. Such a lesson as this book affords of the conduct of mathematical research the younger student (it is not for beginners) will not easily find. Those who know Klein need hardly be informed that the lectures range over a large part of recent mathematics. The following passage (in which we take the liberty twice to put *experience* in place of "conception") is interesting:

"We are forced to the opinion that our geometrical demonstrations have no absolute objective truth, but are true only for the present state of our knowledge. These demonstrations are always confined within the range of space experiences that are familiar to us; and we can never tell whether an enlarged experience may not lead to further possibilities that would have to be taken into account. From this point of view, we are led in geometry to a certain modesty, such as is always in place in the physical sciences."

Appended to the lectures are ten pages on the history of modern mathematics in Germany.

The English Church in the Nineteenth Century, 1800–1833. By John H. Overton, D.D., Canon of Lincoln and Rector of Epworth. Longmans, Green & Co. 1894.

DR. OVERTON'S studies for 'The English Church in the Eighteenth Century' brought him to the threshold of his present task. In the former case he was collaborating with another; this work is all his own. It is well done, and the first four chapters are particularly interesting, dealing as they do with the more personal aspects of the matter. The chapters on "The Church and Education" and "Church Societies" may be even more valuable to English churchmen, but their appeal to the general reader is but faint and far away. It is evident that, stopping short at 1833, the very year in which the Oxford movement began, Dr. Overton has denied himself the climax of his history. But he has done this advisedly. The history of the Oxford movement has been written many times, and the light that has been thrown upon it has done much to darken the preceding period. By way of introduction to his 'Oxford Movement,' Dean Church wrote a few pages on that period, but in the manner common to the historians of the movement—to paint in a background dark as possible, so that the virtues of the movement might be brought out in sharp relief. Dr. Overton has not gone to work deliberately to convey a different impression, but he has only had to tell the story of the time and of its work to show that there were men before Newman and his set who had "a work to do in England" and did it tolerably well.

It is Dr. Overton's impression that the Church had reached its low-water mark before the close of the eighteenth century, yet she continued to lose favor while she steadily improved. This was because her failure had been gross and patent to all eyes, while the improvement was within narrow limits and less obvious to the assailant seeking for grounds to justify the energy of his attack. Dr. Overton's catholicity is remarkable. He is so good a churchman that he has a good word for men of the most opposite tendencies and conclusions. He has three chapters, "The Orthodox," "The Evangelicals," and "The Liberals," and we cannot imagine that the inheritors from either of these branches will fancy they have any reason for complaint. It is, however, to the Orthodox, by whom the High Churchmen before the High Churchism of Newman are intended, and the Evangelicals, that he attributes the most of the improvement from 1800 to 1833. The former are less dwelt upon than the latter, as they should be, for the reason that they have had more than a fair share of attention heretofore. The inveterate toryism of the old High Churchmen has perhaps led to an exaggeration of their attachment to "the happy constitution of our Church and State" of which we have heard so much. But Dr. Overton is himself obliged to admit that practically their attachment to this constitution was something very different from the indifference to it, or contempt for it, of the Tractarians. These, too, would have had the Church and State one, but that one would have been the Church. The fact is, the temper of the old High Churchmen was political and that of the new High Churchmen was ecclesiastical. Keble belonged to both parties in succession, and it was only his attachment to the old order, his intense toryism, that kept him in the English Church, as such, when others went to Rome.

Keble's 'Christian Year' was published in 1827, and though Walter Bagehot called it a dilution of the weaker part of Wordsworth, it is the only religious book of the period that has now any general circulation. Moreover, Keble's ability was almost singular among a feeble folk. It is like passing from death to life to pass from Dr. Overton's second chapter to his third. The Evangelicals had life in themselves, if they had little scholarship or taste or intellectual ability. One of their own party said, "There are persons who secretly, if not avowedly, associate the ideas of piety and imbecility, and who do not hesitate to decide that he who professes to be governed by Christian principles must be deficient in natural understanding." One of the saints "cut his violin strings and never afterwards replaced them," nor went to a picture exhibition; another regretted her time spent with Shakspere as a robbery of God, and excluded from her shelves "all the furniture of a worldly library." These sentiments and actions were characteristic of the Evangelical party, but to the same party we owe preeminently the abolition of the slave trade in 1807 and the abolition of slavery in 1833, though we must not forget that Granville Sharp and Thomas Clarkson led the way. The chapter on the Liberals is enlivened by the name of Sydney Smith and a few characteris-