necticut's claims overlap those of all its neighbors, West as well as East. They must provoke much damaging criticism, and sometimes be confronted with refutations as complete as the Quaker State, when fairly stirred up, made of the Nutmeg's usurpations of her soil. Massachusetts will maintain that Ohio's debt to Cutler is greater than to any man of Connecticut, and will resent the statements that her children who founded Connecticut were superior to their parents in the township idea, or in churches and schools, either doctrinally or practically; and will compare Connecticut boasting of her improvements to an infant perched on its father's shoulder, and exclaiming, "I am taller than papa!" Vermont will be indignant at the portrait of Ethan Allen, with the statement that Connecticut "sent him into the field." It was not in the name of Connecticut that the surrender of "Ty" was demanded. The Quaker State will hold Franklin as worth more to her than any score of Connecticut interlopers; six-sevenths of Ohio will say that too much is arrogated to their other seventh, the "Connecticut corner." On comparative study, then, something of the glories which have been heaped upon the threefold Connecticut will fare like the jackdaw's plumage in Æsop, until there is a more careful restatement and readjustment of interstate relations, obligations, and contributions.

Euclid: His Life and System. By Thomas Smith, D.D., LL.D. Charles Scribner's Sons. 1902. 12mo, pp. 217.

Dr. Smith's style is light and easy, *plena litteratæ senectutis oratio;* for the author is one who can speak of the quantification of the predicate as a novelty (it was only introduced in 1827), and who, in the words, "In our time, Gauss has shown," etc., refers to a publication of 1801. He has not forgotten his Greek, for he reads Proclus, and he constantly reminds us most winningly of what the education of a gentleman used to be. *Quid enim est jucundius senectute, stipata studiis juventutis?*

The little volume is not intended for scholars, but for those who know no more of Euclid and his science than they learned in the high school; and where the reader's attention may threaten to tire, he is refreshed by something of a facetious turn until he is ready to resume the more serious discourse. One will naturally not expect the author to have the least inkling of the way of thinking of modern mathematicians about the 'Elements.' He treats the "theory of parallels" in the good old way, taking his stand with those who were valiantly resolved to demonstrate that the theorem that the three angles of a plane triangle are equal in sum to two right angles, follows as a necessary consequence from certain premises concerning a plane, although it stared them in the face that these premises are equally true of the surface of a sphere, while the sum of the angles of a spherical triangle exceeds two right angles. Stated in this way, their undertaking was manifestly predestined to eternal failure. One-half of this state of things was clear to the mind of Euclid. That is to say, his confusion of thought about one-half of it arose from two subconscious assumptions, the recognition of which would have made him wholly right.

One of these was that space is immeasurably great. That he assumed this appears (among other places) in his supposed proof (I. 16) that the angles of a triangle are not *greater* than two right angles; and that he assumed it irreflectively is shown by the language of his second postulate compared with the use he put it to. It reads that a terminated straight line can be produced continuously (κατὰ τὸ συνεχές); but he applies it as if it read "can be prolonged beyond any assigned length." His other unconscious assumption is that all the figures with which he deals are finite. This is shown by his axiom (called the eighth) that the whole is greater than its part. For, of course, Euclid knew well enough that a straight line terminated at one end only, and endless in the further direction, is not made any shorter by cutting off a finite part of it, since what remains can be shoved along to cover the extension occupied by the whole, and, being endless, leaves no part uncovered. These two assumptions not being explicitly made, his proof of the sixteenth proposition which we have just (substantially) quoted, remains imperfect. To prove that the sum of the angles of a plane triangle is not *less* than two right angles, he plainly saw that a special assumption was necessary, and stated this in his fifth postulate (which Professor Smith calls the twelfth axiom) in such a form that it should manifestly appear the matter of fact it really is, and not a matter of pure reason, or an axiom. The whole tribe of old laudators of Euclid (of whom our author is one), though they all but deify him, fail to give him credit for understanding this matter, which they do not understand themselves; but, on the contrary, regard the postulate which proclaims his understanding of it as the greatest blemish upon his work.

This booklet is not intended for people who care to gain a profound understanding of Euclid, or to acquire any minutely accurate information, and therefore small slips are innocuous. But we should deceive our readers if we did not warn them that such slips there are, and thick as leaves in Vallombrosa. For example, we are told in sundry places that Euclid the mathematician was not Euclides "of Megæra." That is true, since that dreadful personage had no Euclid. But neither was our Euclid that eristic philosopher who lived in the town that had come to be called the " Edifices"—Τὰ Μέγαρα, the quantity of which Dr. Smith, with his Greek, will perceive if he thinks of the chatter of Penelope's suitors.

"μνηστῆρες δ᾽ ὁμάδησαν ἀνὰ μέγαρα σκιόεντα."

With singular obliviousness, he says that Alexander survived his master, Aristotle, for a year, although in different places in the book the dates of both deaths are rightly given. It is the same with the mathematical work. On p. 208 he begins an attempted demonstration of a proposition which has been fully proved to be indemonstrable. Here is a bit from which to judge it: "The triangles ABC, BAD have . . . an angle DAC . . . = angle ACB." Now, even without a figure, it is pretty clear that DAC is not an angle either of the triangle ABC or of the triangle BAD. It is no misprint, but a slip that brings the whole demonstration to ruin. Dr. Smith has four triangles, formed by the two diagonals and four sides of the quadrilateral

ABCD, and it was requisite to show that the pair of triangles he mentions were equal. He has become confused among the four, has inadvertently substituted a different triangle for one of them, and the whole demonstration is, consequently, a blunder. A "proof," substantially of the same thing (though the author appears not to see that it proves this or nothing), on page 213, is even more plainly inconclusive.

England is the only civilized country where it often happens that an educated man will write a book in which he makes it plain, sometimes even blandly confesses, that he has not taken the trouble to acquaint himself with the most accessible and pertinent facts. We must not blame an individual for following the established customs of his own country, but we are bound to instance at least one case among many in which Professor Smith shows himself the thorough Briton that he is in this respect. There is a considerable account and criticism of Legendre's treatment of parallels, which was certainly called for by the general plan of Professor Smith's book. But this account and criticism is based exclusively on Brewster's translation of Legendre's 'Éléments de Géométrie.' Now Legendre became dissatisfied with his original treatment of the matter, and in his third edition completely revolutionized it. Subsequently, he decided that his new demonstration was invalid, and in his ninth edition returned to the method of Euclid. Still later, he imagined that he had found a way out of the labyrinth, and in the fourteenth (and no doubt in some intermediate editions to which we are unable at this moment to refer) he made a new attempt, very curious and subtle, as it had to be to deceive Legendre, but quite worthless as a proof—namely, he distorts his triangle, so as to make one of the angles smaller and smaller, while the sides are so lengthened that the area of the triangle remains unchanged; and he thinks he proves that this process can go on until, that angle vanishing, all three sides lie in a straight line, *although the area of the triangle remains finite*, and without investigating to what limit the values of the other angles tend. Legendre, in an appendix, gives a still different attempt at a demonstration, which really begs the question, and in one edition is substantially admitted to do so. Of all these changes, Dr. Smith knows nothing, and his criticisms of what he does know of Legendre's work (concerning which two opinions are no longer possible for competent men) admit points that ought to be denied, and deny what ought to be admitted.

A particularly amusing case of writing in complacent consciousness of lacking proper information is a certain speculation about entirely known facts regarding the commentary on Euclid by Campanus—a speculation provoked by a similarly ignorant passage from a certain 'Short History of Mathematics,' which pushes the national custom to a conspicuous eminence. But we cannot give more space to this.

There is much in the volume about the educational value of elementary geometry. In the broad sense that mathematics is good mental discipline, and that modern mathematicians are the only men who reason with precision, we think the author quite right. That is as far as we can go along with him. To judge of the matter

It would be indispensable to inquire how far elementary metric geometry reasons correctly, and whether or not, in rendering its reasoning sound (without which it must be positively mischievous), it would not necessarily become far too difficult for the average boy. There is a way in which, by easy exercises, geometry would gradually develop great logical strength in almost any boy; but it supposes such a revolution in the methods of presentation and of instruction as would be practicable only in a country where teachers were more genuinely educated and had more leisure and stimulus to study than they have in ours. In default of that, the very inferior, but much easier, subject of the theory of numbers affords a far sounder discipline of the logical powers.

Handbook of Birds of the Western United States. By Florence Merriam Bailey. Houghton, Mifflin & Co. 1902.

Bird students have long wanted a comprehensive manual of Western birds that should correspond to Mr. Frank M. Chapman's authoritative and attractive manual of Eastern birds. The book just published by Mrs. Bailey meets the need in a highly satisfactory way. The author records original observations on nearly every page, and she has thoroughly explored the literature of Western birds even down to publications of which the ink is hardly dry. Though the book is in the main a systematic work, it begins with short essays on the migration, the distribution, the economic value, and the protection of birds, and methods of studying them and of preparing specimens. Several local lists and a bibliography complete the introductory matter. The main body of the work takes up systematically every species and subspecies of bird in the United States west of the hundredth meridian. An important feature is the system of keys similar to that employed by Chapman and Ridgway. Illustrations are given for nearly all the birds, many of them from drawings by the best of our bird artists, Mr. Louis Agassiz Fuertes. Some of the other illustrations, particularly those made from photographs of skins, do not quite reach the nicety of execution otherwise uniform in the book.

The keys and the numerous illustrations make the work of identifying birds comparatively easy. Suppose that the student has in his hand a certain bird closely associated "with the fields of dry cornstalks and the smoky, budding wood-lots" of early spring, and with the frosty stubble and sere thickets of autumn. The key shows him, by the character of the bill and the size and position of the hind toe, that the bird belongs to the order of gallinaceous birds. Turning to the special key to that order, he finds that because his bird is without spurs, metallic plumage, and naked head or vaulted tail, it is excluded from the family of turkeys and pheasants, and falls into that of grouse, partridges, and quails, the Tetraonidæ. There are a dozen genera in this family, but a key supplemented by marginal drawings of the diagnostic parts of birds of the different genera is a sufficient guide. Of the two main divisions of the family, this bird belongs, not to the group in which the legs are feathered down to the base of the toes, but to that in which the contrary is true; further, it belongs to the subdivision that has no ruff, thus being separated from the ruffed grouse; still further, it fits into the minor division having the tail more than half as long as the wing, and the claws moderate. Since its head is not crested, however, it is excluded from the group of partridges. There remains for it, then, only the genus Colinus, and because it has a white throat and under parts lightly and irregularly barred, it must be *Colinus virginianus*, the common bob-white. For identifying birds in the field, without specimens, a "field key" is appended to the book.

Under each species the author notes color, measurements, and general structure, distribution, food, and character of nest and eggs, and generally adds an original description of the bird's appearance, habits, and landscape setting. In this last work, which is the most attractive part of the text, Mr. Vernon Bailey has given considerable assistance. The following extracts show the interesting style of the descriptions:

"The magpie is a feature of the landscape, whether seen in flight as a black air-ship, with white side-wheelers and long, black rudder moving against a background of red cliffs in the Garden of the Gods, or seen standing as a lay-figure on a stone wall in a Mormon village. There is always a freedom and largeness about his proceedings. Sometimes he will take wing so near that you see the green gloss on his back, flying with even water-level flight far and away, till he becomes a black dot and disappears beyond your field of vision. His masterful, positive character is not lost even when he goes squacking about his daily business. Whatever he does or says, he claims the attention of the neighborhood, except when he has a secret to hide. . . .

"The road-runner is one of the most original and entertaining of Western birds. The newcomer is amazed when the long-tailed creature darts out of the brush and races the horses down the road, easily keeping ahead as they trot, and, when tired, turns out into the brush and throws his tail over his back to stop himself. Even the oldest inhabitant likes to talk about the swift runner, whom it takes a 'right peart cur to catch,' and who eats horned toads, comes to drink and feed with the hens in the dooryard one day, and the next may be hunted vainly in the dense chaparral or cactus where it makes its home." . . .

BOOKS OF THE WEEK.

Barnes, Anna M. The Red Mirlok. (Containing also Shan Folk-Lore Stories, by W. C. Griggs.) Philadelphia: American Baptist Publication Society.

Beylié, L. de. L'Habitation Byzantine: Les Anciennes Maisons de Constantinople, Supplément. Paris: Ernest Leroux.

Brooks, J. G. The Social Unrest. Macmillan.

Buchheim, C. A. Schiller's Wilhelm Tell. Rev. ed. by Hermann Schoepfeld. (Clarendon Press Popular Classics.) Henry Frowde.

Budge, E. A. W. A History of Egypt, from the End of the Neolithic Period to the Death of Cleopatra VII., B. C. 30. 8 vols. (Books on Egypt and Chaldea.) Henry Frowde.

Burton, William. A History and Description of English Porcelain. London: Cassell & Co.; New York: A. Wessels Co. $10.

Carlyle, Thomas. The French Revolution: A History. Introduction, etc., by J. H. Rose. 3 vols. London: George Bell & Sons; New York: Macmillan. $9.

Daley, J. G. The Rose and the Sheepskin. W. H. Young & Co. $1.

Eberhardt, Max. Gedichte. Chicago: Koelling & Klappenbach. $2.50.

Fernald, J. C. Scientific Side-Lights. Funk & Wagnalls.

Flint, Robert. Agnosticism. Scribners. $2.

Grimm, Herman. Unüberwindliche Mächte. 2 vols. Berlin: J. G. Cotta'sche Buchhandlung; New York: Lemcke & Buechner.

Hooker, Richard. Of the Laws of Ecclesiastical Polity. The Fifth Book. Macmillan.

Hulbert, A. B. Indian Thoroughfares. (Historic Highways of America.) Cleveland: The Arthur H. Clark Co.

Jordan, D. S. The Philosophy of Despair. San Francisco: Paul Elder and Morgan Shepard.

Leadbeater, C. W. Man Visible and Invisible. John Lane.

Lee, Sidney. Queen Victoria. A Biography. Macmillan. $3.

Lockwood, G. B. The New Harmony Communities. Marion (Ind.): G. B. Lockwood.

Mead, Elwood. Irrigation Institutions. (The Citizen's Library.) Macmillan. $1.25.

Memoirs of Francois René, Vicomte de Chateaubriand. Vols. V. and VI. (Translated by Alexander Teixeira de Mattos.) G. P. Putnam's Sons.

Mortimer, A. G. The Creeds: An Historical and Doctrinal Exposition of the Apostles', Nicene, and Athanasian Creeds. Longmans, Green & Co. $1.80.

Nietzsche, Friedrich. The Dawn of Day. (Translated by Johanna Volz.) Macmillan. $2.50.

Norris, Frank. The Pit. Doubleday, Page & Co. $1.50.

Oliphant, T. L. K. Rome and Reform. 2 vols. Macmillan. $7.

Perry, W. C. The Boy's Iliad. Macmillan. $1.25.

Phillimore, J. S. Sophocles. Longmans, Green & Co. $2.

Remarks and Collections of Thomas Hearne. Vol. VI. Oxford (Eng.): Oxford Historical Society.

Shea, J. G. Early Voyages Up and Down the Mississippi. New ed. Albany: Joseph McDonough.

Smith, J. T. The Art of Disappearing. W. H. Young & Co. $1.50.

Spalding, J. L. Socialism and Labor, and Other Arguments. Chicago: A. C. McClurg & Co. 80c.

Stinson, S. S. Whimlets. Philadelphia: Henry T. Coates & Co.

Von Zittel, K. A. Text-Book of Palæontology, Vol. II. (Translated by C. R. Eastman.) Macmillan. $2.75.

Wolfson, A. M., and Hart, A. B. Essentials in Ancient History. American Book Co. $1.50.

Works of Jane Austen. 5 vols. (The Hampshire Edition.) G. P. Putnam's Sons.

Writings of James Monroe, Vol. VI. G. P. Putnam's Sons. $5.