Throughout the book are scattered references to results of contemporary analysts, and these contribute a certain amount of animation to the text, although the theorems quoted lead only to trivial conclusions in regard to the matter in hand. The style of the book is sufficiently elegant, and would be worthy of a more valuable scientific production.

<div align="right">J. F. RITT.</div>

*La Part des Croyants dans les Progrès de la Science au XIX$^e$ Siècle.* By ANTONIN EYMIEU. Première partie: Dans les sciences exactes. Troisième édition. Paris, Perrin et Cie., 1920. ii + 272 pp. Price 5 francs.

THIS little volume of entertaining but not particularly scientific summer reading is of interest to the mathematician chiefly because of the biographical material contained in the first chapter. It had its inception in connection with an anecdote which is often told of a verbal encounter in the Chamber of Deputies some thirty years ago. M. Charles Dupuy, speaking as rapporteur de l'Instruction publique, had spoken of the fatal anæmia of the facultés catholiques which, when they entered upon scientific studies, reached at last a stage where their faith called out, "Tu n'iras pas plus loin." The remark, so the official journal of the day records, was hailed with cries of approval from the Right, at which manifestation an opponent exclaimed, "As if there had never been any Christian scholars!" To this M. Dupuy replied, amid laughter, that it would be an interesting thing to see the list.

What M. Eymieu proposed for himself some five years ago, when the first edition appeared, was to meet the challenge and to show that it was those of religious faith who made the greatest contributions to the exact sciences in the nineteenth century. He admits, however, that it is an impossibility to prepare a complete catalogue of scientists and of their religious beliefs, and so he sets about to furnish a brief list, limited to the greatest contributors to mathematics, astronomy physics, and chemistry.

In mathematics M. Eymieu has selected the names of Gauss, Cauchy, Poincaré, Lagrange, Abel, Galois, Riemann, Weierstrass, and Hermite as representing the great research scholars—"les grand initiateurs," of whom, as he says, "de l'aveu de tous les bons juges, trois . . . dominent son

histoire," namely, Gauss, Cauchy, and Poincaré. It is of
interest to observe that two out of these three who are said
to have dominated the mathematical history of the century
are French. Of the nine great leaders, four are also of the
author's nationality, or five if we count Lagrange, who spent
the latter part of his life in Paris and who was of French
extraction; three are German, and one is a Norwegian. Out
of the nine, the author proves to his satisfaction that five and
probably six were religious men, that two (Lagrange and
Galois) had no interest in religion, and that there remains a
doubt as to the position of Poincaré. The two leading mathe-
matical astronomers he takes to have been French, namely,
Laplace and Leverrier, and each he claims to have been pos-
sessed of undoubted religious faith.

What is chiefly interesting in the work is that which the
French call the "causerie" in which the author indulges. It is
his gossip, his anecdotes about men, and his happy method
of quoting interesting passages from speakers like Poincaré,
Arago, and Bertrand that make the book readable. Such a
human touch is seen in his quotation from that troublesome
young Bolshevik, Galois, who was too advanced even for a
France that claimed to stand for the most progressive thought
of a century ago. The incident is well known, but is always
interesting when one considers the sudden closing up of a
life that was mentally brilliant and physically and morally a
failure. The night before the duel in which he met his death
he wrote to his republican patriots: "Je meurs victime d'une
infâme coquette et de deux dupes de cette coquette. C'est
dans un misérable cancan que s'eteint ma vie. . . . Adieu,
j'avais bien de la vie pour le bien public."

M. Eymieu has been more successful in his selection of the
nine great leaders, however open to criticism this may be,
than in his choice of other great mathematicians who were
distinctly religious in their faith. It is with some surprise
that, among these "grands mathématiciens qui furent aussi
de grands croyants," one finds that Boncompagni's name
"leads all the rest." Boncompagni was a great man, and a
great historian of mathematics, but he was not a great mathe-
matician. The second name in the minor list is that of Joseph
Bayma "que les journaux américains, en annonçant sa mort,
proclamaient 'le géant des mathématiques,'"—after which
statement it is quite unnecessary, at least for purposes of
review, to examine the list any further.

The fact is that M. Eymieu has done his cause no good in the eyes of a scientific reader. His selections of men have not, in general, been made with care; indeed, they have not been made with ordinary knowledge. He has not scientifically gone to work to secure his information, as witness his uncertain results concerning the faith of Simon Newcomb. He has simply set about to support the belief of the uneducated or the half educated man of his own religious faith. It cannot be expected that he should have done for the dead what Professor Leuba did with respect to the religious beliefs of living scientists, but no one who has worked in the history of mathematics can fail to see that a much stronger case could have been made, and legitimately made, if the author had studied the problem with greater care.

It is evident to everyone that the most difficult thing to weigh in a scientific balance is the religious belief of mankind. The reasons are equally evident. One thing is clear, however,—that the study of the exact sciences no more tends to lessen this religious faith than the study of commerce, of civics, of sociology, or even of theology. The history of the exact sciences offers abundant illustrations of this fact, and evidence of a more convincing kind than that which M. Eymieu has adduced. Indeed, it would be a strange and inexplicable thing if scientific investigation should fail to show that mathematics, that branch of knowledge which is continually in touch with the infinite and is continually revealing the mysteries of the eternal, should fail to foster religious faith to an extent not reached by the other subjects of human study.　　　　　　　　　　　　　　DAVID EUGENE SMITH.

*The Early Mathematical Manuscripts of Leibniz.* By J. M. CHILD. Chicago, 1920. iv + 238 pp.

THIS important work consists of translations of various Latin manuscripts of Leibniz found by Dr. C. I. Gerhardt in the Royal Library of Hanover about seventy-five years ago. These manuscripts were published by Dr. Gerhardt as parts of three works which he wrote on the origin of the differential and integral calculus,* and have long been known in their

---

* Historia et Origo Calculi Differentialis, a G. G. Leibnizio conscripta, Hanover, 1846.

Die Entdeckung der Differentialrechnung durch Leibniz, Halle, 1848.

Die Geschichte der höheren Analysis; erste Abtheilung: Die Entdeckung der höheren Analysis, Halle, 1855.