nearest neighbor. A great disintegrating tendency arises from this fact; and there seems to be a growing feeling that it is necessary to take steps to combat it. Probably this can be done in no way better than by having non-technical developments of connected bodies of doctrine in many modern subjects. For such a treatment the exposition in Huntington's Continuum may possibly serve as an ideal toward which to labor, but nevertheless an ideal which probably can be attained only in relatively rare cases owing to the nature of the topics themselves.

R. D. CARMICHAEL.

A Course in Mathematical Analysis: Differential Equations, being Part II of Volume II. By EDOUARD GOURSAT. Translated by EARLE RAYMOND HEDRICK and OTTO DUNKEL. Boston, Ginn and Company, 1917. viii + 300 pp.

To the translators it seemed best, for the purposes of American schools, to issue separately the two parts of the second volume of Goursat's Cours d'Analyse Mathématique; and this has been done with the approval of Professor Goursat. The treatise before us consists of the second half of the second volume.

This work is too widely known for us to give here a statement as to its contents; it is too favorably known for us to attempt an analysis of its main characteristics. The excellent translation is worthy of the original. The printing and in fact the whole mechanical make-up are appropriate to the contents.

On page 109 insert "the" between the fourth and fifth words of line four. On page 115, line 4, "Appel" is printed for "Appell." "Mécanique" is spelled incorrectly in the last line of page 151.

The sentence in lines 3–5 of page 102 the reviewer would be pleased to see put in stronger terms. Concerning the differential equation

$$y^{(n)} + a_1 y^{(n-1)} + \cdots + a_n y + a_{n+1} = 0$$

it is said: "It may, however, happen that a point α is a singular point for some of the coefficients a_i without being a singular point for all the integrals." Here "all the integrals" might be replaced by "any of the integrals," as one sees from

the equation

$$y'' - \frac{2 \sin x}{\sin x - \cos x} y' + \frac{\sin x + \cos x}{\sin x - \cos x} y = 0,$$

of which the general solution is

$$y = c_1 e^x + c_2 \sin x.$$

Here the coefficients have poles but the general solution is an entire function. Such equations of the second order are readily formed in unlimited number by determining each one so as to have two entire functions as particular integrals, these entire functions being chosen so that their real zeros do not separate each other. This fact is an immediate corollary of Sturm's zero-separation theorem.

R. D. CARMICHAEL.

Elementi di Aritmetica, con note storiche e numerose questioni varie per le scuole medie superiori, Parte prima: *Numeri interi—Operazioni, divisibilità, numeri primi.* (Third edition, Trimarchi, Palermo, 1916. vi + 134 pp. Fourth edition, 1918. 132 pp.) By Professor GAETANO FAZZARI, of Palermo. Price, L 1.60.

THIS arithmetic includes, as is common in European texts, much algebraic material. Thus discussion of such topics as the laws of commutation and association, and the euclidean process of finding G.C.D. appear. The fundamental operations of arithmetic are discussed both from the elementary point of view and from that of the higher mathematics.

The Hindu method of "multiplication in one line," by obtaining successively those products which contain units, tens, hundreds, $\cdots$, is explained. Division by use of the complement, frequently a convenient method, is given, illustrated by the division of 47830219 by 68947. The process is as follows, and may be regarded as division by 100000 − 31053.

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                  31053
47830219 :        68947
186318            -----
-------             693
6646201
 279477
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9256789
  93159
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 349948
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