But the author shows skill and imagination in his choice. His name is sufficient guarantee of accuracy, and although the form in which it is put, and the occasional badinage between the story-teller and the children may be distasteful to some, yet it is certain that all teachers will here find something to help them in their work and stimulate them to further research.

W. F. BUSHELL.

Integralgleichungen. Einführung in Lehre und Gebrauch. By G. HAMEL. 2nd edition. Pp. vii, 166. DM. 15.60. 1949. (Springer, Berlin)

This new edition is a corrected reprint of the first (1937) edition, but although it contains no new material a new issue is very welcome. The book is a most pleasant and readable introduction to the elements of the theory of integral equations, and should be of particular value to the increasing number of students who need a sound knowledge of fairly advanced mathematics for their attack on problems of mathematical physics and technical applications. English textbook literature on the topic is scanty, and of the numerous German accounts, Hamel's is perhaps the easiest to read.

The theory is brought in gradually by means of examples from vibration problems, potential theory, and so on, without any premature straining after generality. The methods of Fredholm, Schmidt and Hilbert are sketched, and in a final section the author returns again to special problems, some of interest chiefly theoretical, some arising from physical investigations. The excellent survey of fundamental theorems, and the wealth of interesting applications, set forth in a pleasant style not too concise for the novice, make this a most useful little volume.

T. A. A. B.

CORRESPONDENCE.

TCHEBYCHEFF'S FORMULA FOR NUMERICAL INTEGRATION

To the Editor of the *Mathematical Gazette.*

SIR,—On p. 50 of the *Gazette* for February 1949, Professor A. C. Aitken reviews Fort's book on Finite Differences, and mentions that Fort refers to Bernstein's proof that some of the n abscissae used in Tchebycheff's formula may be imaginary when $n > 9$.

In a paper on the motion and strength of ships, published in the *Transactions of the Institution of Naval Architects* for 1896, Captain A. Kriloff uses Tchebycheff's formula and states that even when $n = 8$ some of the abscissae are imaginary. In an earlier paper he had contributed in 1893 to the *Bulletin de l'Association Technique et Maritime,* he makes the same remark, and shows how the abscissae may be found fairly easily from Newton's formulae for the sums of powers of roots. He refers therein to Tchebycheff's original paper, " Sur les quadratures," (*Journal de Liouville,* 1874) but this does not consider numerical cases when n is greater than 7.

It seems that Kriloff's work, published in technical journals, may have escaped the attention of mathematicians.

I may add that many naval architects use 8 or 10 ordinates, and to avoid imaginaries, take $n = 4$ or 5 twice over.

Yours, etc., L. WOOLLARD.

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