keeping a long-anticipated engagement that a Committee of the British Association issues its first volume of tables of Bessel functions. Half a century ago, the Committee decided that the tabulation of Bessel functions was the most useful undertaking that it could promote." In fact, one of the tables in the *Treatise of Bessel Functions*, by Gray and Matthews, is credited to the Reports of the British Association for 1889, and in the revised edition of 1922 the Committee is quoted as intending "to publish at an early date a volume of fairly complete tables of Bessel functions."

But with the years the undertaking has grown until we now have one volume published, a second, on functions of other integral orders, in "an advanced state of preparation," and a third taking shape.

One hundred and seventy pages are devoted to the functions $J_0(x)$ and $J_1(x)$, which are tabulated to ten places of decimals (with second differences) at intervals of 0.001 for x from $x=0$ to $x=16$ and at intervals of 0.01 for x from $x=16$ to $x=25$. Then follow tables for the zeros of $J_0(x)$ and $J_1(x)$, the values of the functions $Y_0(x)$, $Y_1(x)$, $I_0(x)$, $I_1(x)$, $K_0(x)$, $K_1(x)$, together with auxiliary functions and coefficients useful in interpolation. The definitions of these functions through differential equations, power series, and recurrence formulas are conveniently and concisely given.

Mechanically the tables should be easy to use. The entries are in blocks of five with the integral part of each entry given only at the head of the block, unless a change in "characteristic" requires more frequent entry. In the opinion of the reviewer, this is an ideal arrangement for tables of this sort.

The comparisons made with other tables and the listing of errors found in earlier tables are both interesting and valuable.

The Committee has had the courage to say, "There is thus every reason to believe that the tables are completely free from error." Let us hope that nothing more serious has crept in than the trivial missing decimal point in the value of $J_1(7.840)$ which the eye casually picks up on page 80.

The British Association is making a valuable contribution in preparing these authoritative source books of numerical tables. The future volumes in the series on Bessel functions will be awaited with interest.

G. R. CLEMENTS

Essai sur les Fondements de la Géomètrie Euclidienne. By Julien Malengreau. Lausanne, Payot, 1938. 311 pp.

This book is intended as an introduction to a more complete treatise on geometry. The author gives a set of twenty-nine postulates, involving the undefined terms *point* and *distance*, and develops the resulting theory.

The problems of the consistency and independence of the postulates are not considered. As a matter of fact it is fairly obvious that rational euclidean 3-dimensional geometry R_3 (that is, the subset of a cartesian 3-space consisting of those points all of whose coordinates are rational) is an example of a space in which postulates 1 to 28 are satisfied. Postulate 29 (il existe au moins un pentapoint parfait) requires that the space be at least 4-dimensional, and 1–29 hold true in R_4.

There is no axiom of *continuity* (or *completeness*) such as the Dedekind cut axiom. On the other hand there is no closure axiom limiting the set of points on a line to a countable set. Likewise, there is no closure axiom limiting the dimension.

The treatment is elementary, as the proofs are all based on rational arithmetic. There are fifty-six figures which illustrate many of the postulates and theorems.

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