theorems represented by Sturm's famous paper in the first volume of *Liouville's Journal.* When we consider the great importance of these questions both theoretically and in physical applications it is hard to justify their omission in what claims to be a Handbook of the whole theory of linear differential equations. This omission may, perhaps, be in part made good in the second volume.

Although Professor Schlesinger's treatise fails to meet some of the demands which it seems to us may fairly be made of a Handbook. it is certain, owing to the great amount of information which it contains in accessible form, to fill an important place in every mathematical library.

<div align="right">MAXIME BÔCHER.</div>

HARVARD UNIVERSITY,
  *December,* 1896.

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# TABLE OF THE FIRST FORTY ROOTS OF THE BESSEL EQUATION $J_0(x) = 0$ WITH THE CORRESPONDING VALUES OF $J_1(x)$.

Presented to the American Mathematical Society at its Third Summer Meeting, September 1, 1896.

BY R. W. WILLSON AND B. O. PEIRCE.

THE first ten values of $x$ for which Bessel's function of the zeroth order, $J_0(x)$, vanishes have been given to ten places of decimals by Meissel.* The next thirty roots of the equation, $J_0(x) = 0$ and the values of $J_1(x)$ corresponding to these forty roots have been computed by us by means of Vega's ten place table of logarithms† except in the few cases where a greater number of places was necessary, and for these we have had recourse to Thoman's tables.‡ All the values have been checked by duplicate computation and the first four values of $J_1(x)$ by comparison with Meissel's tables.

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* *Math. Abhandlungen der K. Akad. der Wissenschaften zu Berlin,* 1888.
† Thesaurus Logarithmorum Completus, Lipsiae, 1794.
‡ Tables de Logarithmes à 27 Décimales pour les Calculs de Précision, Paris, 1867.