implication in general) to the rule of syllogism—is wholly fallacious; the real source of the difference lies in the change of sense of the middle term; that to confound in a middle term the sensus compositi and the sensus divisi is a source of danger has been a commonplace of logic since the time of the scholastics. That an inept symbolism is made use of in mathematics, which has for a fundamental interest the point and the "variable" (i. e., individuals, or singulars) would be of no consequence, but Russell and Peano treat this "addition" as constituting an important improvement over the logic which preceded them—that of Peirce and his school—instead of which it is simply erroneous.

F. N. COLE,
Secretary.

ON THE HEINE-BOREL PROPERTY IN THE THEORY OF ABSTRACT SETS.

BY DR. E. W. CHITTENDEN.

(Read before the American Mathematical Society, October 26, 1918.)

O. VEBLEN and N. J. Lennes have shown that in the presence of certain linear order axioms the Heine-Borel property is equivalent to the Dedekind cut axiom.* O. Veblen† and R. L. Moore‡ have used this property in systems of axioms for geometry and analysis situs.

M. Fréchet established the theorem that in a class (V) normale a subclass $\mathfrak{Q}$ has the Heine-Borel property if and only if $\mathfrak{Q}$ is compact and closed.§ This result was extended to systems ($\mathfrak{Q}$; K^{1367}) by T. H. Hildebrandt.||

E. R. Hedrick calls attention to the fact that the Heine-Borel theorem, in the enumerable case, is a consequence of the closure of derived classes.¶

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* Cf. O. Veblen, "The Heine-Borel theorem," this BULLETIN, vol. 10 (1904), p. 436–439.

† "A system of axioms for geometry," *Transactions Amer. Math. Society*, vol. 5 (1904), pp. 343–384.

‡ "On the foundations of plane analysis situs," ibid., vol. 17 (1916), p. 131.

§ Sur quelques points du calcul fonctionnel," *Rendiconti di Palermo*, vol. 22 (1906), p. 26.

|| "A contribution to the foundations of Fréchet's calcul fonctionnel," *Amer. Journal of Math.*, vol. 34 (1912), pp. 281–282.

¶ "On properties of a domain for which the derived set of any set is closed," *Transactions Amer. Math. Society*, vol. 12 (1911), pp. 285–294.