1077-K1-1196 **Daniel C. Sloughter*** (`dan.sloughter@furman.edu`), Department of Mathematics, Furman University, Greenville, SC 29613. *The Consequences of Drawing Necessary Conclusions.* Preliminary report.

Benjamin Peirce defined mathematics to be "the science which draws necessary conclusions." His son, Charles Peirce, pointed out a significant consequence of this definition: mathematics, out of all the sciences, relies upon no other science. A mathematician seeks out the consequences of given hypothetical relationships. In doing so, he need not concern himself with either the nature of the objects involved, or how it is that we come to know them.

In particular, mathematics is independent of philosophy. Yet this does not lessen the importance of the work of the philosopher of mathematics: an account of the nature of mathematical knowledge is of fundamental importance to our understanding of the nature of human knowledge as a whole. As G. H. Hardy pointed out, anyone "who could give a convincing account of mathematical reality would have solved many of the most difficult problems of metaphysics." In attempting to find this account, philosophers need to pay close attention to exactly what it is that mathematicians do. Although the philosophy of mathematics need not have any influence on mathematical practice, it is a matter of vanity for mathematicians to think that the philosophy of mathematics is worthwhile only if it were to have some such influence. (Received September 17, 2011)