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Boston, MA 02108. *Kurt Gödel's Last Work on the Power of the Continuum*. Preliminary report.

There are many purveyors of bad mathematics. Squaring the circle, doubling a cube and trisecting angles are just a few well-known ill-conceived pursuits. Crank mathematicians are not always amateurs, and sometimes good ideas are generated on bad problems. But there is a further case of the first-rate mathematician, who already has an established publication record in a particular field, then has a further valuable insight, but adopts a particular argumentative approach that has a gap. In such a case we might say that the situation is not ultimately hopeless. Such was the case with Gödel's later work on the 'true power of the continuum' in which Gödel endeavored ([1970a], [1970b]) to prove that  $2^{\aleph_0} = \aleph_2$ . Gödel drew on early results on cardinals based on Hausdorff's redefinition. Although Gödel was a preeminent expert in this field, and his new approach to this problem drew on a solid basis, his proof is flawed, as he himself later acknowledged. While his methods did not in and of themselves lead to further progress on this front, Gödel's later position that  $2^{\aleph_0} = \aleph_2$  has been to a certain extent vindicated by later deep arguments that show that this result can be obtained from large cardinal axioms. (Received September 17, 2017)