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Abstract: We examine Charles S. Peirce’s mature views on the logic of science, especially as contained in his later and still mostly unpublished writings (1907–1914). We focus on two main issues. The first concerns Peirce’s late conception of retroduction. Peirce conceived inquiry as performed in three stages, which correspond to three classes of inferences:abduction or retroduction, deduction, and induction. The question of the logical form of retroduction, of its logical justification, and of its methodology stands out as the three major threads in his later writings. The other issue concerns the second stage of scientific inquiry, deduction. According to Peirce’s later formulation, deduction is divided not only into two kinds (corollarial and theorematic) but also into two sub-stages: logical analysis and mathematical reasoning, where the latter is either corollarial or theorematic. Save for the inductive stage, which we do not address here, these points cover the essentials of Peirce’s latest thinking on the logic of science and reasoning.

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