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1003-01-342 **Thomas Archibald*** (tarchi@mit.edu), Dibner Institute, MIT E56-100, 38 Memorial Drive, Cambridge, MA 02139, and **Rossana Tazzioli** (tazzioli@dmi.unict.it), Dep. di Matematica e Informatica, viale A. Doria 6, 91215 Catania, Italy. *Aspects of the Reception of Fredholm's Work on Integral Equations in France and Italy*. Preliminary report.

In 1899, Ivar Fredholm (1866-1927) devised a method for solving a type of functional equation where the unknown function appears under the integral sign, a problem going back to Abel and which had already received some study at the hands of Vito Volterra and Picard's student J. Le Roux. This rather special-sounding problem had profound resonances. For one thing, it could be combined with methods of Carl Neumann and Henri Poincaré to prove the existence of solutions to many boundary-value problems, and indeed to find these solutions using Picard's successive approximation method. Still more far-reaching were the insights it provided to David Hilbert who reinterpreted Fredholm's methods into the point of departure for what we now term operator theory on Hilbert spaces.

In this paper, we examine the first of these threads, mostly concentrating on French and Italian work of the period from 1902 to 1910. In this context, we see a strong connection to the roots of these problems in mathematical physics, and a pure-mathematical focus which goes well beyond the requirement of solving particular physically-motivated problems. (Received September 10, 2004)