962-01-58   **Erwin O. Kreyszig***, School of Mathematics, Carleton University, Ottawa, Ontario K1S 5B6, Canada. *Mathematics around 1900: Transition from one century to the next.*

Whereas projective geometry, complex analysis, and classical partial differential equations were dominant areas in 19th century mathematics – and essentially creations of that century, the 20th century created and developed functional analysis, topology, and abstract algebra as dominant areas of mathematical interest. This "modern mathematics" certainly shows drastic changes in both content and style, compared to the "classical mathematics" of the 19th century and before.

This talk will show the following. Material (on integral equations, the calculus of variations, on spectral theory, and so on) had been accumulating during an extended period of time during the 19th century. The turn of the century caused a noticeable increase of mathematical activity, which will be surveyed in terms of landmark events, in particular, between 1895 and 1907. This evolution led from the accumulation just mentioned to a crystallization of novel ideas and to the development of functional analysis and topology, two areas which during their early phases grew jointly in a process of mutual give-and-take, with functional analysis first taking the lead.

This discussion will concern seminal work by Poincaré, Volterra, Lebesgue, Fredholm, Hadamard, Hilbert, and Fréchet, with outlooks until about 1914 (F. Riesz, Hausdorff). (Received July 11, 2000)

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