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H. J. Bhabha and the birth of the second family of elementary particles RAMANATH COWSIK, Washington University — Homi Jehangir Bhabha was one of the great pioneers of theoretical high energy physics, known to present day physicists through extensive eponymous citations to Bhabha scattering. Perhaps because of this, much of his other superlative contributions have been well nigh forgotten. In this presentation, we provide an overview of a sequence of papers written by Bhabha during an 11-month period between December 1936 and October 1937 that argue in a compelling way for the presence of a massive charged particle very similar to the electron in every way, except for its mass, which he estimated to be in excess of 100 m_e. This particle is called a muon and today it is classified as a member of the second family of elementary constituents of matter, along with the muon-neutrino, charmed and strange quarks. These three new members of the family were discovered after a gap of nearly 25 years; in the decade of the 1960's.

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