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## *TENDENCIES OF MODERN ELECTRICAL RESEARCH.*

MODERN electrical research may be divided into two principal groups. Faraday's discoveries in electro-chemistry form the central part of the first group. The characteristic feature of the second group is Faraday's view of electro-magnetic phenomena, the view, namely, that electric and magnetic forces between material bodies act contiguously, that is from point to point through the intervening medium, the lumeniferous ether. These two groups are the foundation pillars which support the splendid edifice of the modern science of electricity. Faraday laid its foundation and he also raised the most essential parts of its splendid structure. But this structure bears to-day so many marks of the genius of Maxwell, Thomson, Helmholtz and Hertz that in our admiration for the exquisite detail which we owe to these great followers of Faraday we often forget the original design and the designer. Even so eminent a mathematical physicist as Poincaré can write profound mathematical treatises on modern electro-magnetic theory with scarcely a mention of Faraday's name.

A broad view of the tendencies of modern electrical research is obtained by comparing the fundamental concepts concerning electric and magnetic phenomena which pre-

*An address delivered before the New York Academy of Sciences, April 28, 1895.