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THE RESISTANCE OF FIXED TISSUE CELLS TO THE TOXIC ACTION OF CERTAIN CHEMICAL SUBSTANCES[1]

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ANY consideration of the general question of tissue resistance has of necessity to first take into account the two monuments in this division of understanding and later the particulate research which these initial contributions stimulated. First, the biological conception of Metchnikoff[2] of the protection and the resistance afforded tissues through the activity of wandering cells, and second, the chemical or humoral theory of Ehrlich[3] which postulated the production on the part of tissues reacting to injurious agents of substances highly specific in nature which had the ability to bind or destroy those agents which had incited their formation. The fundamental work of Metchnikoff has been amplified and made specific through investigations of a major character by Aschoff,[4] Mallory,[5] Maximow,[6] Sabin,[7] Gay,[8] Cunningham[9] and their pupils so that at the present time the wandering phagocytic cells of the

[1] This investigation was made possible through a grant from The Josiah Macy, Jr., Foundation. Address delivered before the General Session of The Federation of American Societies for Experimental Biology; Detroit, April 13, 1935.

[2] Metchnikoff, "L'immunitié dans les maladies infectieuses." Mason et Cie., Paris, 1901.

[3] Ehrlich, *Deut. Med. Wchnschr.*, 17: 976, 1891.

[4] Aschoff, *Ergeb. inn. Med. u. Kinderh.*, 26: 1, 1924.

[5] Mallory, *Jour. Exp. Med.*, 3: 611, 1908.

[6] Maximow, *Arch. Path.*, 4: 557, 1927; *Arch. exp. Zellforsch.*, 5: 169, 1928.

[7] Sabin, *Physiol. Rev.*, 2: 38, 1922.

[8] Gay, The Harvey Lectures, 1930–31, Williams and Wilkins, Baltimore.

[9] Cunningham, *Am. Jour. Physiol.*, 59: 1, 1922.