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<i>The Resistance of Fixed Tissue Cells to the Toxic Action of Certain Chemical Substances:</i> PROFESSOR WM. deB. MACNIDER	601
Obituary:	
<i>Edwin Brant Frost:</i> DR. FRANK SCHLESINGER. <i>Reginald Oliver Herzog:</i> PROFESSOR KARL F. HERZFELD. <i>Memorial to Charles Darwin. Recent Deaths</i>	605
Scientific Events:	
<i>The Dedication of the Richard T. Fisher Memorial; The San Francisco Meeting of the American Chemical Society; Grants in Aid of Research for 1936 of the American Association for the Advancement of Science; Birthday Honors of the King of England; Awards in the Sciences of the American Medical Association</i>	609
<i>Scientific Notes and News</i>	611
Discussion:	
<i>The New Active Principle(s) of Ergot:</i> PROFESSOR M. S. KHARASCH and DR. R. R. LEGAULT. <i>Thiobarbiturates:</i> DR. ELLIS MILLER, DR. JAMES C. MUNCH and FRANK S. CROSSLEY. <i>The Use of the Term Pocono:</i> DR. GEORGE H. ASHLEY and DR. BRADFORD WILLARD. <i>Delayed Action of Selenium Poisoning of Live Stock:</i> PROFESSOR O. A. BEATH. <i>Aquatic Animals as Collectors:</i> DR. N. A. BORODIN. <i>Extended Hibernation in the Toad:</i> PROFESSOR P. A. DAVIES. <i>Ecological Note:</i> PROFESSOR E. A. VUILLEUMIER	614
Reports:	
<i>Grants for Research of the Geological Society of America; Grants for Research of the American Philosophical Society</i>	618
Scientific Apparatus and Laboratory Methods:	
<i>A Simple Photographic Recording Kymograph:</i> KARL DEISSLER, DR. GEORGE M. HIGGINS and DR. CHARLES SHEARD. <i>A Micro-method for Determining the Utilization of Carbohydrates and Polyhydric Alcohols by Microorganisms:</i> FRANK H. JOHNSON	619
Special Articles:	
<i>The Culture of Whole Organs:</i> DR. ALEXIS CARREL and CHARLES A. LINDBERGH. <i>Analysis of Rotatory Dispersion of Chemically Analogous Substances:</i> DR. P. A. LEVENE and ALEXANDRE ROTHEN	621
<i>Science News</i>	5

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THE RESISTANCE OF FIXED TISSUE CELLS TO THE TOXIC ACTION OF CERTAIN CHEMICAL SUBSTANCES¹

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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 Metchnikoff² of the protection and the resistance afforded tissues through the activity of wandering cells, and second, the chemical or humoral theory of Ehrlich³ 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 Cunningham⁹ 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'immunité 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.