

**THE EVOLUTION OF DISEASE WITH A
DISCUSSION OF THE IMMUNE REACTIONS
OCCURRING IN INFECTIONS AND NON-
INFECTIONS DISEASES; A THEORY OF
IMMUNITY, OF ANAPHYLAXIS AND OF
ANTIANAPHYLAXIS**

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The evolution of disease with a discussion of the immune reactions occurring in infections and non-infections diseases; a theory of immunity, of anaphylaxis and of antianaphylaxis by J. Danysz

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J. DANYSZ

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A THEORY OF IMMUNITY, OF ANAPHYLAXIS
AND OF ANTIANAPHYLAXIS

BY

PROF. J. DANYSZ

CHEF DE SERVICE, INSTITUT PASTEUR, PARIS

TRANSLATED BY

FRANCIS M. RACKEMANN, M.D.

ASSISTANT IN MEDICINE IN THE HARVARD MEDICAL SCHOOL; ASSISTANT IN
MEDICINE IN THE MASSACHUSETTS GENERAL HOSPITAL, BOSTON, MASS.



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TRANSLATOR'S NOTE.

In translating this work of Professor Danysz from French into English, an attempt has been made to preserve carefully the original meaning. The original work contains much repetition arising from the desire to emphasize and elucidate the author's theories and deductions on the evolution of disease: the translation also contains repetition but the translator has taken the liberty of omitting sentences, paragraphs and, in certain instances, whole sections, in order to present the book to the American profession in a more readable form. In particular, the case reports in the second section of the second part have been greatly shortened and many have been omitted.

In this book Professor Danysz has traced in a clear and logical manner the various stages in the development of acute infectious diseases; and proceeding along the same course, has developed an interesting theory of the evolution of chronic morbid states whose etiology and pathogenicity are today so little understood and whose treatment is therefore as difficult as it is unsatisfactory.

The book should be of interest to those who recognize the importance of a comprehension of the principles underlying the study and treatment of disease.

The translator wishes to thank Mr. G. S. S. Playfair for much valuable assistance in the translation.

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35901

PREFACE.

As the study of physical and biological phenomena, of the constitution of matter and of its manifestations becomes more extended and more precise, it tends to prove that the perpetual changes noticed in all things, consist in an uninterrupted series of decompositions and syntheses; and as the transformations of any one substance have a beginning and an end, it can be said that any substance in process of change undergoes an evolution of which the different successive phases are determined by the physical and chemical properties of its constituent elements.

Decompositions follow, as a rule, a very uniform path and lead to simple elements which may be considered as definite. Synthesis, on the other hand, is itself subject to evolution; it leads step by step to compounds that are more and more complicated, varied and numerous, and it is impossible to predict any end to these changes.

The final result of natural synthesis, the most complicated and the most perfect product known to us, is the chemical species which we may call "albuminoid micelle."¹ Its characteristic is that it rebuilds itself as it wears out, or, in other words, that it is continuously undergoing partial decomposition and at the same time a reconstruction of the

¹ The word "micelle" is used to define the units of albuminoid matter of every colloid in the same sense that the word "molecule" expresses the unit of chemical compounds. The word "particel" is used by many American authors in the same sense.

decomposed elements with simpler elements found in its environment, so that although always in an unstable equilibrium, it constantly retains its initial composition and structure.

It is easy to conceive that if the conditions of this "nutrition" of the "micelle" depend on what is provided by the surrounding matter, the "micelle" may decrease or increase in volume; that is to say, it may decompose faster or slower than it is constructed. When a sufficient quantity of building material is at hand, the increase in volume will predominate; and when its volume will have reached certain limits capable of modifying its conditions of normal nutrition, the "micelle" will split into two equal parts.

It is this *multiplication* which together with *nutrition* constitutes *life*.

The "micelle" develops as an *individual* and as a *species*; in its evolution it must obey the law which obliges every substance to replace in its complexes, the less stable or more soluble compounds by more stable or less soluble compounds.

The "micelle" will "age" because, as its elements become more stable, substitution becomes slower and slower; it will "die" when stabilization will have passed beyond certain limits, because a certain rapidity of exchange, producing a certain amount of heat, in a given time, is an indispensable condition of life.

The individual may die under these conditions; the species likewise, because the child-"micelles" will inherit the degree of stability acquired by the parent-"micelles."

When a cell's "micelles" find in their surrounding medium elements of which they are composed themselves, or other elements for which their own elements have no affinity, they can find nourishment and can develop in a normal manner; but when, on the contrary, they find strange elements,

requiring fixation by their affinities, the nutritive equilibrium will be modified; and when the proportion of "micelles" so affected among the "micelles" composing the plasma of the cell, will have passed beyond certain limits, the cell itself will become diseased and may die.

These are the general ideas which have guided us in the following study of pathological states.

In Part II the *secondary consequences* in the organism of the conditions of immunity and anaphylaxis, which result from recovery in infectious disease, or from an habitual or periodical digestion of antigens are discussed.

The study of these questions has led to the conclusion that all the chronic morbid states with their periods of acute crises alternating with longer or shorter remissions, originate from antigens, and are determined by the state of immunity-anaphylaxis of the organism. The necessary experimental confirmation of this hypothesis has shown in reality that the anti-anaphylactic treatment is of unquestionable efficacy in all those chronic diseases in which we have been able to apply it up to date (except organic mental diseases) and a long series of observations corroborates this.

We have obtained these results by non-specific antigens and in order to explain the curative action of these antigens, we have been obliged to assume the direct and predominating intervention of the nervous centers.

The work is concluded by a general theory of immunity, anaphylaxis, and anti-anaphylaxis, based on the structure, properties and function of the organism, and of the structural and functional units composing it.

J. DANYSZ.



CONTENTS.

PART I.

CHAPTER I.

THE THEORIES OF IMMUNITY (METCHNIKOFF AND EHRLICH). EXPERIMENTAL RESEARCHES INSPIRED BY THESE THEORIES.

Pathogenic Mechanism of Bacterial Infection. Toxic Action. Action of Bacterial Bodies and of the Products of Bacteriolysis when Considered as Heterogeneous Albumins. Properties of the Mixtures of Antigens with Their Antibodies. Ricin. Antiricin. Phenomena of "Surecharge"	17-32
---	-------

CHAPTER II.

PHYSICO-CHEMICAL PROPERTIES. TRANSFORMATION OF THE ARSENOBENZENES "IN VITRO" AND IN THE ORGANISM.

Physicochemical Properties and Constitution. Transformations "In Vitro." Transformations in the Organism Toxicity. Relations between Apparent Toxicity and Formation of Precipitates. Reactions of the Organism. Formation of a Specific Antibody. Experiments on the Fixation and Elimination of Luargol by the Organism .	33-44
---	-------