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<i>Shall We Lose or Keep Our Plant and Animal Stocks?</i> : PROFESSOR WALTER LANDAUER	497	<i>nary Tract</i> : PROFESSOR GEORGE N. PAPANICOLAOU and VICTOR F. MARSHALL. <i>The Adsorption of Thrombin on Fibrin</i> : DR. WALTER H. SEEGER, MARIE NIEFT and EUGENE C. LOOMIS	515
<i>Disease of the Heart</i> . DR. ALFRED E. COHN	499	<i>Scientific Apparatus and Laboratory Methods</i> :	
<i>Obituary</i> :		<i>An Easily Assembled Machine for Making Cotton Plugs for Culture Tubes</i> : PROFESSOR ORTON K. STARK. <i>Microviscometer</i> : DR. ELLIOTT R. WEYER. <i>The Use of Double-Cycle A and B Scales on Straight Slide Rules</i> : DR. CARLTON E. BROWN	521
<i>Recent Deaths</i>	502	<i>Science News</i>	12
<i>Scientific Events</i> :			
<i>The Argentine Declaration; Rehabilitation of the Physically Handicapped; The American Chemical Society; The American Academy of Arts and Sciences</i>	502		
<i>Scientific Notes and News</i>	504		
<i>Discussion</i> :			
<i>Comparative Scientific Strength of Universities</i> : DR. GEORGE GAYLORD SIMPSON. <i>The Effect of Motion Pictures on Body Temperature</i> : DR. N. KLEITMAN. <i>Growing Rubber in Costa Rica</i> : RAFAEL W. KEITH	506		
<i>Scientific Books</i> :			
<i>Individuality</i> : PROFESSOR H. S. JENNINGS	509		
<i>Reports</i> :			
<i>War Research at Mellon Institute, 1944-5</i> : DR. W. A. HAMOR	510		
<i>Special Articles</i> :			
<i>Crystallization of Southern Bean Mosaic Virus</i> : DR. W. C. PRICE. <i>Inactivation of the Irritant Toxicants of Poison Ivy and Related Compounds by Tyrosinase</i> : PROFESSOR IRWIN W. SIZER and CLEMENS E. PROKESCH. <i>Urine Sediment Smears as a Diagnostic Procedure in Cancers of the Uri-</i>			

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SHALL WE LOSE OR KEEP OUR PLANT AND ANIMAL STOCKS

By Professor WALTER LANDAUER
THE UNIVERSITY OF CONNECTICUT, STORRS, CONN.

GENETICISTS have learned to produce hereditary variations at will; they have succeeded in multiplying greatly the frequency with which mutations occur; but they have not yet brought under control the direction of these events. The future may well hold the secret of how to overcome the randomness of changes in the hereditary substratum of organisms, and we may thereby master the fashioning of plants and animals "according to plan." Until this time has arrived, however, we shall do well to keep in mind the words of William Bateson, "Variation leads; the breeder follows." The art of breeding, the art of producing new combinations of genes, rests entirely on the raw materials—the mutations—as they are provided by nature.

The uses to which new mutations and varied gene combinations may be put are manifold. Geneticists and biologists generally seek material which will aid in an analysis of development and evolution. Students of human and veterinary medicine are interested in those forms of life which are most likely to contribute to the understanding and control of disease. Breeders of livestock and of crop or ornamental plants search for types which will enhance the pleasures and profits to be derived from their stocks by heightened disease resistance, greater vigor, increased yields or particular esthetic values. The present war has dramatized the need of various industries for plant materials with specified qualities, many of which could not be obtained. Stocks which

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