

SCIENCE

FRIDAY, NOVEMBER 3, 1916

THE NEW PHYSIOLOGY¹

CONTENTS

<i>The New Physiology</i> : DR. J. S. HALDANE	619
<i>The University of Illinois Hudson Bay Expedition</i> : T. E. SAVAGE, F. M. VAN TUYL	632
<i>Scientific Notes and News</i>	632
<i>University and Educational News</i>	634
<i>Discussion and Correspondence</i> :—	
<i>Sunlight and the Magnetic Needle</i> : DR. F. C. LORING. <i>Gumbotil</i> : DR. GEO. F. KAY. <i>The Evolution of Herbs</i> : DR. CHARLES ROBERTSON. <i>Horse Flesh and the Diet of Early Man</i> : DR. C. F. LANGWORTHY. <i>Another Typical Case</i> : W. E. ALLEN. <i>Science in the Service of the Nation</i> : PROFESSOR WM. E. RITTER	635
<i>Quotations</i> :—	
<i>Science and Industry</i>	641
<i>Scientific Books</i> :—	
<i>Pogue on the Turquoise</i> : DR. GEORGE F. KUNZ. <i>Alexander on the Mythology of All Races</i> : ALICE C. FLETCHER	642
<i>Notes on Canadian Stratigraphy and Paleontology</i> : KIRTLEY F. MATHER	645
<i>Methods of Criticism of "Soil Bacteria and Phosphates"</i> : PROFESSOR CYRIL G. HOPKINS AND ALBERT L. WHITING	649
<i>Special Articles</i> :—	
<i>The Light-producing Substances, Photogenin and Photophelein of Luminous Animals</i> : PROFESSOR E. NEWTON HARVEY	652

LOOKING back on the history of physiology we can see that there have been various turning-points in general physiological theory, and consequently in the trend of research. Particular discoveries or series of discoveries, often in allied sciences, have led to these turning-points.

The last great turning-point in physiology was about the middle of last century. Up till then it was generally held that in a living organism a specific influence, the so-called "vital force," controls the more intimate and important physiological processes. Inspired by the rapid advances of physics and chemistry, the younger physiologists of that time broke away from vitalism, and maintained that all physiological change is subject to the same physical and chemical laws as in the inorganic world, so that in ultimate analysis biology is only a branch of physics and chemistry.

The subsequent progress of physiology has shown that all, without exception, of the physical and chemical hypotheses then advanced in explanation of intimate physiological processes were far too simple to explain the facts; but the general conclusion that biology is only a special application of ordinary physics and chemistry became firmly established, and is still what may be called the orthodox creed of physiologists. It may be truly said that most physiologists look upon this creed as something which has been established for all time, and that they would be inclined to regard any deviation from it as harmful

¹ A lecture delivered before the Harvey Society, New York, October 14, 1916.