

### The Physics and Chemistry of Paintings

Three Lectures given before the Royal Society of Arts, March 1937. By F. Ian G. Rawlins. Pp. 52. (London: Royal Society of Arts, 1937.) 2s. 6d.

THESE three lectures by Mr. F. Ian G. Rawlins are not only of the greatest interest to those who have specialized on the materials and methods used in painting pictures in the past, but are also epoch-making in that they mark a departure in the whole conception of their duties on the part of those responsible for the preservation of the priceless works of art contained in our public galleries.

The first realization of the part to be played in the systematic scientific examination of works of art we owe to Prof. Forbes, of the Fogg Museum, Harvard University, who opened a laboratory for the study of these questions. This was followed by the creation of a scientific department in the Louvre, and the establishment of laboratories in the British Museum under the able guidance of Dr. A. Scott, and to-day we have the laboratories at the Courtauld Institute under Mr. Daniel Thompson, and the appointment of Mr. Rawlins on the staff of the National Gallery.

In the opening lecture, Mr. Rawlins discussed the general problems and the physical and chemical properties of the materials out of which a picture is built up. In the second lecture he discussed the 'diseases' of pictures, and the experiments undertaken at the National Gallery for the systematic collection and examination of dust, and the microscopic examination of the surface of pictures through the Ultropak microscope fitted with crossed nicols to exclude reflection, and the uses of ultra-violet light in examining pictures. The concluding lecture was devoted principally to the use of X-rays, the description of the special apparatus at the National Gallery and the methods used to systematize and control results. He also described a very interesting new feature, the use of the Lovibond tintometer to measure the colour values of the surface of pictures and record the results of cleaning.

Mr. Rawlins touched on so many problems in the course of his lectures and suggested so many possible lines of inquiry that it is impossible to deal with them in a short notice, but he may be congratulated on having given a series of lectures which will be much appreciated by all students of this subject and form a valuable contribution to our knowledge.

A. P. LAURIE.

### Einführung in die Elektrizitätslehre

Von Prof. Dr. R. W. Pohl. Vierte, grossenteils neu verfasste Auflage. Pp. viii+268. (Berlin: Julius Springer, 1935.) 13.80 gold marks.

THE first German edition and the English translation of the second German edition of this book have already been noticed in this journal. The present fourth German edition, much of which has been entirely rewritten and brought up to date, will certainly not fail to have the same appeal as its predecessors.

The book makes interesting reading on account of its original method of presentation. The author

starts at once with crude conceptions of 'volt' and 'ampere' in the same way as text-books on mechanics start with 'kilograms' and 'seconds'. Well selected experiments—nearly every one of which is illustrated—serve to refine gradually these conceptions. Thus the modern theory of electricity and magnetism is developed in a clear-cut way. A presentation of this type forms not only a good introduction, but also it certainly helps to clarify the ideas of students who have approached the same subject on more conservative lines.

In the new edition the addition of two very clear chapters on "Matter in the Electric Field" and "Matter in the Magnetic Field" have to be specially welcomed. To avoid enlargement of the book the author has shortened the text in some other places, not, however, always to the best advantage. These shortcomings—they are very few indeed—will not trouble the type of reader who will consult the book in Great Britain, and if we are provided with a new English translation they may be easily remedied.

A. B.

### Biology in the School

By H. Alan Peacock. Pp. xvi+354. (London: William Heinemann, Ltd., 1937.) 10s. 6d. net.

AMONG the ever-growing list of books on the teaching of the biological sciences, the present work will find an honourable place. It is the result of many years of experience on the part of a public school science master. The book is intended as a volume of reference, and as such it is admirable. The spirit is eclectic, and Mr. Peacock suggests many lines along which secondary school work in biology may be undertaken and he avoids the pitfall of the rigid syllabus and method of treatment. "The ideal syllabus has not been constructed and when it has been, much of the infinite joy of learning and of teaching biology will have gone. Biology should be introduced into schools not only because of a practical value equal to, or greater than, that of the other sciences, but also because of its cultural value and the national necessity of thinking biologically."

All the book is useful, but particularly valuable are the sections on the library and the comprehensive book list both for scholars and teachers. The many external and human factors governing a choice of syllabus are dealt with admirably and there are numerous hints on the special technique of teaching the biological sciences—a technique which is still being developed. The foreword has been written by Sir John Russell.

W. L. S.

### Science fights Death

By D. Stark Murray. (Changing World Library.) Pp. x+149. (London: Watts and Co., 1936.) 2s. 6d. net.

THIS book tells briefly and simply what medicine is doing to advance our knowledge of disease. It deals with macroscopic parasites, with bacteria and with viruses, with hormones, industrial diseases, cancer and anæmia. It can be recommended to the layman as a trustworthy and readable sketch.