

The text amounts to little more than a description of the plates and is too scrappy to give a connected view of the subject. The book, however, is well produced, and will be valued for its excellent star maps and examples of celestial portraiture.

Denkmäler mittelalterlicher Meteorologie. No. 15 (Schlussheft). Neudrucke von Schriften und Karten über Meteorologie und Erdmagnetismus herausgegeben von Prof. Dr. G. Hellmann. Pp. lviii+269. (Berlin: Asher and Co., 1904.)

This is the final volume of a valuable series of publications which we owe to the energy of Prof. Hellmann. In them we have had brought before us the more interesting abstracts and reprints of early works dealing with meteorology and terrestrial magnetism. Prof. Hellmann has thus made available to those interested in these subjects, the records of ancient times, which to many would have remained unread and possibly unknown.

In the present volume, which deals more especially with meteorology, we have presented to us a set of twenty-six separate parts ranging from the seventh to the fourteenth century. Many others have been taken from printed works, but some of them, as we are told in the preface, are here published for the first time.

Further, many of these old texts have here been translated into German so that those who are not familiar with old Saxon, old English, old Norwegian, or Arabic will still be able to gain a good insight into the ideas of the Middle Ages.

In the introduction to this volume Prof. Hellmann gives a brief sketch of the character of meteorology at these periods, and adds a short and interesting summary of biographical facts relating to the writers of the texts to which reference is here made. An appendix contains additions and corrections to the earlier numbers.

For the labour involved in bringing together and preparing this collection of old texts a large debt of gratitude is due to Prof. Hellmann, and it is hoped that from time to time, when further ancient writings are brought to light, he will render them in like manner so conveniently available.

The Birds of Calcutta. By F. Finn. Second edition. Pp. vi+136. (Calcutta: Thacker, Spink, and Co; London: Thacker and Co., 1904.)

THE fact of a work reaching a second edition may generally be taken as an indication that it has received the seal of public approval, and that it accordingly needs no commendation from us. In the present instance, a ready reception would seem to be assured to the new edition, since many additions and improvements have been made. The most important addition is undoubtedly the series of life-like cuts of Indian birds, which adds very largely to the interest of the little volume; but it is also satisfactory to find that the arrangement and nomenclature have been revised so as to bring the work into harmony with the volumes on birds in the "Fauna of British India," to which it may serve in some degree as an introduction. Mr. Finn has a vivacious, if sometimes flippant, style, which removes his works from the "dry-as-dust" category; but in some cases, as in the application of the term "disreputable" to the babler, we venture to think some of his epithets might be better selected. To a former resident the omission of the adjutant stork from the list of Calcutta birds seems strange, but it appears that for many years these weird birds have ceased to visit the city of palaces.

R. L.

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Toning Bromide Prints. "Photography" Bookshelf Series, No. 16. By R. E. Blake Smith. Pp. xv+104. (London: Iliffe and Sons, Ltd., 1904.) Price 1s. net.

INSTEAD of producing a black and white bromide print it is often desirable to change the normal tone to suit the subject photographed. There are many methods by which this change of tints can be obtained, and these pages are devoted to describing the various processes that are available. The material on which this book is based first appeared in a series of articles in *Photography*, but in the present handy form it will be found more convenient for workers. The author gives a good detailed account of each case, and discusses the probable effect of the different processes on the permanence of the finished picture. Workers with bromide papers will find this book of considerable service.

LETTERS TO THE EDITOR.

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Charge on the α Particles of Polonium and Radium.

WITH reference to the interesting letter on this subject by Prof. Rutherford in last week's NATURE, I should like to point out that in my paper "On the positive electrification of α rays and the emission of slowly moving kathode rays by radio-active substances" (*Proc. Camb. Phil. Soc.*, xiii., p. 49) I have described experiments which demonstrate the communication of a positive charge of electricity to bodies struck by α rays from polonium or radium. I had considerable difficulty in disentangling this positive charge from the copious streams of slowly moving negatively electrified corpuscles which I found were given out by these substances, and the experiments in which I finally succeeded in doing this were not completed until a few days after the reading of the paper on November 14, and are not referred to in the abstract quoted by Prof. Rutherford. A description of them will be found in the paper which has lately been published. I may take this opportunity of saying that I have recently found that uranium also gives out slowly moving corpuscles, so that this effect seems a general property of radio-active substances. The velocity of these corpuscles is very small compared with that of the β rays, and is more nearly of the order of the velocity of the corpuscles emitted by metals when exposed to light.

J. J. THOMSON.

Cavendish Laboratory, Cambridge, March 4.

A CONVERSATION I had with Prof. Bragg, of the Adelaide University, in passing through Adelaide last summer suggested some thoughts in regard to the nature of the α rays which may be of interest in view of Prof. Rutherford's letter in last week's NATURE. Prof. Rutherford announces that he has at last succeeded in detecting the positive charge carried by the α rays of radium by using a magnetic field to deflect and remove the slow-moving electrons present with the α particles. He says, "I think these experiments undoubtedly show that the α particles do carry a positive charge, and that the previous failures to detect this charge were due to the masking action of the large number of slow-moving electrons emitted from the plates." These results, while they afford a welcome confirmation of the conclusions drawn from the evidence of the magnetic and electric deviation suffered by the α rays, do not, to my mind, finally settle the question.

It must be admitted that the α particles in ordinary circumstances do carry a positive charge. Certain evidence, however, seems to point to the conclusion that the α particle at the moment of its expulsion from the parent atom is uncharged, and that it derives its positive charge from secondary causes, independently of, and subsequent to, the expulsion process. To devise a crucial experiment which