be a source of so much confusion to one to whom English is the native language and who has been brought up to use the English system of weights and measures, how much greater must be the confusion to a person brought up on the relatively simple metric system and perhaps attempting to read a paper in a tongue which is foreign to his own and to translate these units into the metric system! If we can not have the metric system in everyday life, let us at least have it in our scientific journals!

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SCIENTIFIC BOOKS

Cloud Studies. By ARTHUR W. CLAYDEN, M.A. Second Edition. E. P. Dutton and Co., N. Y.

STUDENTS of nature should be pleased that another edition of Clayden's "Cloud Studies" is now available. Mr. Clayden has given a great deal of time to developing the art of cloud photography and the result is a series of beautiful cloud photographs which should introduce any reader to a knowledge of the different cloud forms. These cloud forms are called by the names adopted at the International Meteorological Conference at Munich in 1891, a modification and extension of the cloud nomenclature introduced by Howard in 1803.

Mr. Clayden has been an enthusiastic observer as well as a photographer of clouds and in his introduction he tells how to observe clouds easily by means of a blackened mirror. Such a mirror diminishes the glare and brings out in a wonderful manner the detailed structure of the finest cirrus and enables one to observe right up to the edge of the sun. It enables one to view the clouds looking downward instead of in the unnatural position of stretching the neck and the face upward. In the more comfortable position of gazing downward into the mirror long-continued observations may be made and one form of cloud can be watched changing into another.

Beginning with the highest cloud forms Mr. Clayden takes up in succession the different forms of clouds beginning with the highest. In chapter III he pictures, describes and names no less than nine forms of cirrus, quite distinct from each other; but some of these are transition forms and border closely on cirro-cumulus and cirro-stratus. Chapter IV is devoted to cirro-stratus and cirro-cumulus, and numerous examples of each form are given. It is difficult to photograph the widely extended sheets of cirro-stratus so that most of the photographs partake of the cirro-cumulus type. Chapter V takes up the "Alto" clouds, alto-stratus and alto-cumulus. It is almost impossible to photograph the widespread, almost uniform, dark sheets of alto-stratus so that most of the examples given are of alto-cumulus. Chapter VI is devoted to the lower clouds, stratus, strato-cumulus and nimbus. The different types are illustrated by photographs, but these are much less satisfactory than those of the upper clouds. Owing to the absence of color in the photographs it is difficult for an inexperienced person to tell whether dark patches are clouds or sky. This difficulty can be overcome only when it is possible to photograph in colors.

In chapter VII he takes up the cumulus which is perhaps, the best known cloud and easy to photograph. In chapter VIII is described the cumulo-nimbus or shower cloud. Some photographs show the anvil-shaped top of the cloud and others the massive cumulus-like structure of the cloud. Here again we miss the absence of color to distinguish cloud from sky. In chapter IX he discusses clouds which form in wave-like lines and ripples and finally in chapter X has an excellent description of methods of photographing clouds and of determining cloud heights by photography.

The strength of the treatise lies in its photographs and descriptions of clouds. Mr. Clayden has clearly been a student of nature and not of books. His discussion of how clouds are formed and the physical processes involved is very inadequate. It is true that he rightly attributes cloud formation to adiabatic cooling of moist air by expansion and refers to the work of Aitken and Wilson as to the necessity of nuclei for condensation of moisture in droplets. He makes no mention, however, of the usual formation of cloud sheets in inclined strata and ignores the work of Bjerknes and other writers who show that the chief cause of cloud formation and of the ascent of air in inclined strata is the contrast of adjacent bodies of air at different temperatures and the overrunning of colder air from the direction of the pole by warmer air from the south and east.

H. H. CLAYTON

Die Vögel Mitteleuropas. Herausgegeben von der Staatl. Stelle für Naturdenkmalpflege in Preussen. By DR. OSKAR and FRAU MAGDALENA HEINROTH. Hugo Bermühler Verlag, Berlin-Lichterfelde. Lieferungen 1–10; 1924–1925; pp. 1–80; 16 colored plates; 42 black plates.

THE first ten parts of this work appeared between July, 1924, and April, 1925. They are devoted to an account of part of the order Passeriformes of central Europe, *i.e.*, Germany, and they include the wren, water ouzel, accentors, thrushes, flycatchers, waxwing, shrikes, swallows, and the beginning of the Old World warblers, in all thirty-one species.