quencies of these genes than is known in the case of any other gene whatsoever. The enrolment in wartime of vast numbers of donors has produced a correspondingly great opportunity for the extension of knowledge. But it also increases the possibility of unreliable bodies of data. Mass grouping may, on occasion, be very inaccurate as, for example, when gross errors are made through such faults as the use of stale serum or infected cells. It is true that a small percentage of errors would not matter much from this point of view, so long as they were random. Often, however, they may not be random, in which case even a small proportion of wrong groupings might lead to erroneous conclusions. For example, in the British Isles, the population of which is serologically variable, variations in the frequency of gene *A* are of great interest, as shown by the work of the Galton Laboratory and its Serum Unit. If workers in one area, owing to a lack of the precautions described in the Medical Research Council memorandum, wrongly assign a number of A_2 and A_2B persons to groups *O* and *B*, while in a neighbouring area this source of error is absent, a false conclusion on geographical or racial variation might easily be drawn.

Bernstein's well-known test does to some extent provide a check; it can be discovered whether the observed group frequencies are in unreasonable proportion. But only one degree of freedom is available, so that a discrepancy is difficult to interpret. Furthermore, errors may cancel each other (as I found in one large body of material).

The Medical Research Council memorandum should lead to much improvement. It is true that the mass statistics will usually be obtained from the registration of donors, this being carried out at a time when cells alone can be tested. Nevertheless, gross errors and biased errors should be largely eliminated: a great gain in regard to this fleeting opportunity, automatically available during a war and at no other time.

J. A. FRASER ROBERTS.

STRUCTURE OF CLOUDS

Cloud Reading for Pilots

By A. C. Douglas. Pp. x+120. (London: John Murray, 1943.) 10*s*. net.

THIS excellently illustrated little book contains 164 photographs of clouds taken by the author, who is herself a pilot. The treatment of cumulus and altocumulus is especially good, and there are several series of photographs of the same cloud taken at short intervals, showing the changes in progress. The majority of the photographs are from the ground, but a few are from the air. Both the illustrations and the descriptive matter reveal a keen and intelligent observer.

The text contains a brief outline of the physical processes of cloud formation, and includes the usual text-book diagrams of ascending air at fronts. Actually these are highly simplified, and the real processes are still imperfectly understood, providing plenty of scope for future work, from the point of view both of meteorology and of aviation. The book contains some useful hints for pilots, but an attitude of caution should be adopted towards predictions deduced from cloud structures, since the actual sequences of events are extremely variable. Prof. Brunt, in his preface to the book, indicates how the pilot can co-operate with the meteorologist and help with his own observations.

There are no major errors, and though some statements are not quite accurate, very few of these refer directly to the clouds. Strictly speaking, altocumulus castellatus (p. 77) should refer to clouds above 8,000 ft., the lower type being stratocumulus castellatus. The roll type of cloud shown in Fig. 59 is not due to thermal convection. Emphasis is rightly laid on the importance of ice-crystals in anvils, and this also holds for altostratus and all clouds from which precipitation normally originates. The distant shower shown in Fig. 60, and the "virga" (precipitation below clouds) in Fig. 62 probably consisted of snow-flakes, which form threads much more clearly visible than those due to raindrops. Indeed the melting of snow-flakes may terminate the tufts of virga, though evaporation is more frequent. A nebulous or 'watery' sky is usually due to snow-flakes or small ice-crystals.

The book can be recommended to pilots, and meteorologists can study the photographs with advantage.

INSECTS OF MEDICAL IMPORTANCE

A Handbook for the Identification of Insects of Medical Importance

By Dr. John Smart; with Chapters on Fleas, by Dr. Karl Jordan, and on Arachnids, by R. J. Whittick. Pp. x+269+13 plates. (London: British Museum (Natural History), 1943.) 15*s*.

THE great importance of certain groups of insects and other arthropods as vectors of disease-producing organisms affecting man, is universally recognized. In this way the subject of medical entomology has come into being and it is one which displays continuous rapid growth.

With an insect believed to be implicated in disease transmission, the first requisite is to ascertain its name. Accurate identification is of paramount importance, since the behaviour of closely related species may be totally different and demand different repressive measures. In normal years, time and facilities are usually available for sending specimens to a central institution for naming by specialists. Under war conditions, however, such procedure becomes greatly interfered with and an undue amount of time lost before the desired information is obtained. Often the specimens and correspondence are liable to loss in transit and the whole matter has then to be reopened on a fresh basis. The present volume is intended to obviate these drawbacks by providing the means for the identification of any insect known to be of medical importance. It is concerned with all the Old World species that come under this category. An elementary knowledge of entomology is assumed, and users of the book will find, after some practice, very little difficulty in following the tables and descriptions. These, moreover, are accompanied by good clear illustrations, many of which are original.

The authors are to be commended on having written a reliable and up-to-date treatise well adapted in every way for the purpose it is intended to serve.

A. D. IMMS.