university presses, scientific organizations and individuals, for distribution among Russian universities, technical schools and scientific organizations. The American Relief Administration undertook, at its own expense, to receive in New York, warehouse, repack and transport to Russia and finally to distribute there in detail, under the recommendations of a special committee of responsible Russian scientists representing the major universities and societies, all material collected.

This undertaking, resulting in the collection in America and distribution in Russia of over 25,000 pounds of recent American scientific literature, most of it of excellent quality, has now been entirely completed, and a full statement rendered by the American Relief Administration to the American committee of the exact distribution of every piece of scientific literature. A host of grateful acknowledgments from the beneficiaries to the donors of the material, as well as to the American committee and the American Relief Administration, have been received and are a pleasing testimonial to American sympathy and generosity. Many of these acknowledgments express two hopes: first, that more American scientific literature can be received, and, second, that the Russian organizations may soon be in position to send their own publications in exchange for those received. However, as the American Relief Administration has now completed its work in Russia and has withdrawn all of its personnel, and as the mails are now open to private sendings to and from Russia, and the Smithsonian Institution's Bureau of International Exchange is now functioning again as regards Russia, the committee will not undertake further service.

The American Committee, in closing its labors, wishes to express its own warm thanks, in addition to those it has been asked to express on behalf of the Russian beneficiaries, to those many scientific organizations and men who generously participated in this unusual relief undertaking. I wish also to add my personal thanks to SCIENCE for the use of its columns in making the appeals necessary for these attempts to aid Russian scientific men in their period of distress.

VERNON KELLOGG
NATIONAL RESEARCH COUNCIL

ENTOMOLOGICAL ILLUSTRATIONS

IN the course of a review in a recent number of SCIENCE Dr. A. D. MacGillivray[1] takes the opportunity to comment adversely upon a certain type of illustration that is now being used to some extent by entomologists. I am not especially concerned with his remarks as they apply to the particular paper reviewed, but as they are intended to apply to entomological illustrating in general I happen to be somewhat interested.

Says Dr. MacGillivray,

> Figures where one half shows the dorsal surface and the other half the ventral surface are being produced by many authors. This is to be deplored because such figures never give the perspective of the insect as a whole that can be secured from complete figures of each surface, while there is always confusion and doubt as to the accuracy of the structures located on and near the meson, and [he adds with an insouciance worthy of a congressman] so long as the government is financing the project, the question of expense should not be a serious one.

Now I have perhaps used this type of illustration as much as any one, for I count something over 300 published figures of this sort for which I am responsible. Furthermore, I have induced my students to use it also, and I am inclined to believe that it will eventually be recognized as a standard method in entomological work. Consequently, I feel impelled to rise to its defense.

If any other excuse for this reply be considered necessary it may be found in my belief that the matter of the proper type of illustrations to accompany our systematic work in entomology, at least, merits the most serious consideration. I am committed to the belief that the willingness and the ability to produce figures, or the possession of such financial support as is necessary to have them produced, is a part of the necessary equipment of any systematist who wishes his work to endure. The character of these figures is a most important matter.

Dr. MacGillivray's use of the word "perspective" is somewhat peculiar, for of perspective as it is understood by artists these figures in question contain none whatever. I take it that he means the general shape and appearance of the insect and this being the case I am unable to see that his objection has any force. As a matter of fact it is just as easy to gain a sufficiently clear conception of the general form from these drawings as from any other after one has become accustomed to them. Such a drawing, like a topographical map, requires a certain amount of interpretation but is none the less usable.

The objection that confusion may arise as to the exact character of structures on the meson has some slight foundation, but Dr. MacGillivray's sweeping statement that there is "always" doubt concerning them is a trifle too all-inclusive. My experience with these figures has extended through such diverse groups as the Anoplura, Mallophaga, Coccidae, Aphidae, Psyllidae, Hippoboscidae, Streblidae and Nycteribiidae, and I have yet to find a case where the obscuring of structures on the median line is of any very great importance. In a few cases where there is

[1] MacGillivray, A. D., "The Maskell collection of coccidae," SCIENCE, LVII, 734, 1923.

a longitudinal median sulcus which coincides with the line separating the two halves of the drawing there may be some trouble. In other cases of median structures, such as setae, there are very obvious ways of avoiding the difficulty.

I am aware that in addition to these objections there is the further one that these drawings are the source of acute mental pain to some because of their "inartistic" appearance. This is a purely subjective difficulty that arises from a very common misconception of the purpose of a scientific illustration. A scientific illustration is not intended merely as a pretty picture and it has nothing to do with art. Its purpose is merely to present in the simplest and most accurate manner the things that it is desired to show and its production involves nothing more than good draftsmanship. If in addition to these qualifications it is also artistic—whatever that may mean—so much the better. But I can point to many entomological illustrations that have completely lost their scientific value in the often labored strivings of their makers to be artistic.

The advantages of these divided drawings are several. In the first place there is the very great saving in the cost of the blocks. Obviously, the presentation of full drawings of each side of an insect would cost just twice what these divided figures cost. I am inclined to believe that no one will disagree with me when I remark that this is not an unimportant factor. In the second place, there is the saving in the time of making the drawings, a saving that amounts to at least one third. I doubt if any one who has not himself undertaken the production of the figures to accompany an extended paper appreciates what this means. There is also the saving of space in printing. There is the convenience of having the two sides of an object so figured that they may readily be compared. Such advantages seem greatly to outweigh any objections that I have thus far seen urged against these figures.

G. F. FERRIS

STANFORD UNIVERSITY

FOREST DISTRIBUTION IN THE NORTHERN ROCKY MOUNTAINS

J. E. KIRKWOOD, professor of botany in the State University of Montana, has written a book on the "Forest Distribution in the Northern Rocky Mountains," which has appeared as Bulletin No. 247, State University Studies Series No. 2, Missoula, Montana, 1922. It is illustrated with 45 figures, some of which are photographs of forest scenery, some of them are graphs of precipitation, temperature and general humidity, while some are maps and profiles of topography. After an introduction in which the principal collections and the botanical collectors are mentioned, the author describes the topography of Montana and its climate (with tables and diagrams).

In tracing the sources of the vegetation, Professor Kirkwood refers to the rich flora of the Tertiary Period in giving the past history of the plant life of the region with lists of the principal genera. The migrations of the present day species into the northern Rocky Mountains is considered with some fulness. The author describes the northern element which appears to have moved southward along the Rocky Mountains into Montana. The eastern contingent includes a number of trees and shrubs. The western element be believes is the most conspicuous in the forest flora of the mountainous region, and he gives a list of species which have entered from the west, or northwest. Other details of possible migration are included.

Chapter IV deals with the General Forest Aspects where coniferous vegetation is dominant with yellow pine and Douglas spruce as the prevailing trees over the greater part of the region. East of the divide, the forest is more open, and assumes a more xerophytic aspect. In a number of tables the composition of the forests of its different forest sections is given with the range in altitude of each species. Percentage compositions are included. The forest zones and formations are then presented in some detail. Professor Kirkwood describes the foot hill vegetation, the slide rock succession, the forest of the western valleys, and the forests of the montane, or Canadian belt, where *Pinus contorta, P. albicalis, Picea Engelmanni* and *Abies lasiocarpa* are the principal species. The subalpine zone of the Montana Rockies (the Hudsonian Zone of Merriam) has a few trees, a limited number of shrubs and herbaceous perennials. The forests are broken into limited tracts by meadows, bogs, lakes, rock fields, snow fields, chasms, etc. A summary and bibliography complete this contribution of 180 pages to forest botany.

JOHN W. HARSHBERGER

UNIVERSITY OF PENNSYLVANIA

QUOTATIONS

SCIENCE AND PUBLICITY

THOUGH the British Association welcomes membership from the general public, it is not too much to say that the presidential addresses, and most of the papers presented to Sections, are intended for audiences of special scientific workers. In the case of a body like the British Medical Association, membership is limited to professionally qualified men, and in the Sections, therefore, no attempt need be made to deal with scientific subjects in popular terms. With its