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.

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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.

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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

mixed membership, however, the British Association is in a different—and also more difficult—position. Interpreters are needed, if not in the Section rooms themselves, then in the public press. Leading newspapers prefer that their own correspondents or contributors should perform this function, but there are many others which would gladly make use of notes and articles on scientific subjects suitable for the general reading public.

In the United States an institution entitled "Science Service" was established a year or so ago to provide such popular articles as a scientific news syndicate, and it now supplies about fifty American newspapers, and several in Canada and other parts of the world, with news Bulletins sent from Washington every day except Sunday. "The first consideration in a Bulletin story," says a circular of instruction to writers of articles, "is to tell of or interpret a scientific event. But the news stories must be so well written that large national newspapers will use them without rewriting or revision, either in form or language. Write your story so that those who know nothing about science will understand and want to read it. Weave in the scientific background that the man in the street does not have. Use simple words. Make your story as graphic as if you were talking about it." It is pointed out, in addition, that " 'By Science Service' must stand for accuracy of content and implication."

In order to establish this publicity agency for science, a generous benefactor gave a large sum to a Board of Trustees which includes among its members several of the most distinguished men of science in the United States. The whole field of scientific activity everywhere is covered by "Science Service," and the Bulletins are first-rate examples of what can be done to present scientific progress in popular and yet accurate form. We understand that the demand for the Bulletins from newspapers is now sufficient to make this admirable news agency practically self-supporting.

Here, then, we have an excellent example of what can be done successfully for the popularization of science; and it is obvious that the constitution and methods of such an organization are very different from those of the British Association, though the aims of both are "to promote general interest in science and its applications." We believe that the National Union of Scientific Workers contemplates establishing a similar scientific news agency to that of "Science Service," and a beginning has already been made by the British Science Guild by the issue of Publicity Pamphlets sent to the newspaper press for reproduction in whole or in part without payment. Since January, 1921, the Engineering Foundation of New York has been issuing a series of such "Research Narratives," each containing the story of some research, discovery or notable achievement in science or engineering. In one form or another these narratives have found their way through practically the entire range of the public press in America as well as the technical journals.

It is clear, therefore, that we in the British Isles are much behind the United States in the provision made for publicity for science. Our scientific societies are second to none, and the number and value of papers published by them are higher now than ever they were, yet no adequate agency exists to extend the knowledge of this work beyond scientific circles and thus to create in the public mind a feeling of pride in our scientific achievements. A great opportunity awaits the benefactor who will provide a liberal sum to establish a British science publicity service comparable with what has proved so effective in America. Political, social, religious, temperance, labor and scores of other organizations regard it as a duty to carry on their propaganda by means of leaflets and like publications, but science is content to keep its message to itself. It is no wonder, therefore, that the community understands so little of the value and meaning of science. Let us hope that means will soon be forthcoming to establish a bureau which will not only make the proceedings of annual meetings of the British Association widely known and easily intelligible, but will also, throughout the year, continue to interpret scientific advances to a world eager to learn of them but unacquainted with the technical vocabularies in which they are commonly expressed.—*Nature*.

SCIENTIFIC BOOKS

World Weather, Including a Discussion of the Influence of Variations of Solar Radiation on the Weather and of the Meteorology of the Sun. By HENRY HELM CLAYTON. 8vo. New York, The Macmillan Co., 1923. Pp. XX, 393; Figs. 265; Pls. XV.

"WORLD WEATHER" embodies the results of the author's investigations, study and thought during his association of more than twenty years with the Blue Hill Observatory, and, more recently, during his term of service as chief of the forecast division of the Argentine Meteorological Office. Those who have followed Mr. Clayton's writings throughout this time will see in this volume the careful elaboration and critical analysis of many of the views which he first announced a good many years ago. "World Weather" is far more a discussion of certain selected topics in meteorology than it is a general text-book of that science. In fact, it is not a text-book at all, in the ordinary meaning of that term. It is true that there is a consideration of certain general matters such as