But that day has passed. Organization among scientific workers has increased at a tremendous pace during the past few years, largely through the energy of the officers of the organizations of special branches of science. The growth from two thousand to almost six thousand in the membership of the American Chemical Society within the past four years is only typical of the relative activity in other societies.

With such an increase in organization membership it has now become a physical impossibility to longer realize the old ideals of the American Association for the Advancement of Science, and so we hear more and more of withdrawal movements. The example of the zoologists, naturalists and anatomists, during the last convocation week is going to be more and more followed by other societies.

Does this mean the dismemberment of the American Association for the Advancement of Science, the giving up of the opportunity to come in touch with fellow workers in allied sciences, the loss of a national association of organized science? Truly this would be a calamity.

Can such a calamity be avoided?

In the hope of at least provoking discussion, the following suggestions are submitted, in full realization of their imperfections, but nevertheless, as based upon an honest effort to look the situation squarely in the face.

First. Let the American Association for the Advancement of Science lend all of its aid and sympathy to the development of the affiliated societies.

Second. Let the American Association for the Advancement of Science give up its present annual meetings and instead hold triennial or quadrennial meetings.

Third. Let the affiliated societies in turn give up their regular meetings at the time of the American Association for the Advancement of Science meetings and lend all of their influence towards making these meetings great national gatherings of scientists.

Fourth. Let the migratory meetings of the affiliated societies serve the purpose of arousing local public interest in scientific work.

Fifth. Let the meetings of the American Association for the Advancement of Science be held in the national capital, at a time when Congress is not in session and hotel accommodations consequently ample.

If such a policy could be agreed upon by all, the American Association for the Advancement of Science could well afford to give up its charge of an initiation fee from all who are members of affiliated societies. Further, in view of the decreased administrative expense and largely increased membership the present annual dues might possibly be still further reduced.

Such truly national gatherings of scientific workers would be inspiring to all of us, and would make a national impress, as the best conditions would there prevail for the formulation of scientific policies of nation-wide importance.

To carry out the above plan no very great practical difficulties would have to be overcome. The changes are not radical, but evolutionary in character. It is hoped that the suggestions may be of some service.

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## SCIENTIFIC BOOKS

*Bacteria in Relation to Plant Diseases.* By ERWIN F. SMITH, in charge of laboratory of plant pathology, Bureau of Plant Industry, U. S. Department of Agriculture. Volume II., History, General Considerations, Vascular Diseases, Washington, D. C. Published by the Carnegie Institution of Washington. 1911. Pp. viii + 368. Quarto. Publication No. 27, Vol. two.

Somewhat more than six years ago the writer of this notice had the pleasure of publishing a note (SCIENCE, Nov. 24, 1905) in regard to the first volume of this work, and there expressed the hope that the publication of the second volume would "not be long delayed." But good and sufficient reasons for the delay are given in the introduction to this volume, where we are told that it is "based in great part on data obtained as the result of a

multitude of experiments made by the writer and his assistants" and that "it has often happened that the ink on some chapters would scarcely be dry before the results obtained from new experiments would require some part of it to be rewritten." We are further told that in this way some chapters were "rewritten a dozen times, in whole or great part." These quotations will serve also to give some idea of the method of science, and of the infinite pains which must be taken before final results are attained.

As indicated by the title of this volume, it deals with the history of the subject, that is, with the successive investigations of workers in this field of science. Some of the pronouncements of the earlier pathologists now make "mighty interesting reading," as shown by the quotations which are liberally given on pages 9 to 20. Then follow nearly two hundred pages of "general considerations" in which are discussed such questions as "the supposed normal occurrence of bacteria in plants" (which is decided in the negative); "bacteria on the surface of plants"; "parasitism"; "inception and progress of the disease"; "reaction of the plant"; "symbiosis," etc. The remainder of the book (about 150 pages) is devoted to "Vascular Diseases," that is, the diseases which have to do with the vessels of plants.

Three vascular diseases are fully discussed, namely, the "Wilt of Cucurbits," the "Black Rot of Cruciferous Plants" and the "Yellow Disease of Hyacinths." These are severally due to the invasion of the tissues by *Bacillus tracheiphilus* Smith, *Bacterium campestre* (Pammel) Smith, and *Bacterium hyacinthi* Wakker. As one reads the pages of descriptions he is impressed with the thoroughness with which the work upon which they are based was done. At every step one sees the results of the most painstaking investigation, much of which extended through many years. And with it there grows the feeling that here at last we have contributions to plant pathology that rest upon solid foundations and from which guesses and inferences have been wholly omitted.

In the introduction (page 4) we are given a convenient grouping of the diseases of plants due to bacteria, viz.: (1) The vascular diseases, (2) the parenchyma diseases without hyperplasia and (3) cankers, tubercles and tumors in which there is a more or less distinct hyperplasia. It will appear from this that the author has treated but one type or group of diseases, and from this we may infer that this volume is to be followed by one or more others, although no hint is given us by the author as to his intentions. It is to be hoped that Volume III. will appear in due time and that if this be not enough still others may follow. We can not help wishing that the plant diseases due to the fungi might find an investigator who would do for them what Dr. Smith is doing for those due to bacteria.

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*Corrosion of Iron and Steel.* By J. Newton Friend, Ph.D. Longmans Green & Co. 1911. Pp. 300; 62 figures.

Of the many references to the literature of the subject cited by the author, none is more interesting than the following from Pliny written some 2,000 years ago. In his "Natural History" Pliny writes "there is a kind of hallowing iron within the city called Zeugma, seated upon the Euphrates, wherewith King Alexander the Great some time bound and strengthened the bridge over the river there; the links whereof, as many as have been repaired and made new since, do gather rust, whereas the rest of the first making be all free therefrom." Evidently at this very early date the observation had been made, not only that iron rusts, but that different pieces may rust at different rates. The general subject has received so much attention from men in widely differing fields, and their publications have appeared in so great a number of places, that there existed a need for a work which would thoroughly digest this literature and gather together that portion which seemed sufficiently reliable to be of service to the investigators of the present. This task, which has not been an easy one, Dr.