

ical purposes, and for irrigation in regions where long droughts are periodically experienced. In many such localities, by means of "storing, diverting and distributing the flood water of a river or rivers," the land has been reclaimed from the desert and made capable of supporting a large and prosperous population.

F. P. GULLIVER

Die Palaeobotanische Literatur-Bibliographische Übersicht über die Arbeiten aus dem Gebiete der Palaeobotanik. Von W. J. JONGMANS. Erster Band: Die Erscheinungen des Jahres 1908.

Gustav Fischer, of Jena, has just issued the first volume of a proposed annual bibliography and index of contributions to paleobotany compiled by W. J. Jongmans, of the Royal Herbarium at Leiden.

In considering a work of this sort one naturally surveys the field that it aims to cover and what agencies already attempt to cover this field. General paleobotanical reviews published periodically were commenced by the late Marquis Saporta and ably continued after his death by Professor Zeiller in the *Revue Générale de Botanique*. These have always been valuable summaries of paleobotanical progress. The *Geologisches Centralblatt* attempts to cover paleobotanical literature but the work is so poorly done and incomplete that it is of little value. The *Botanisches Centralblatt* covers the field of paleobotany much more thoroughly, but there are so many contributors that the reviews lack balance, an insignificant paper often occupying more space than one of importance. The Royal Society catalogue attempts to cover the paleobotanical field in much the same manner as the work under discussion, the chief criticism in the case of the former being the slowness of publication, the very serious number of omissions and the over-elaborated system of arrangement and citation.

In addition to these general bibliographies the Torrey Botanical Club publishes each month a briefly annotated bibliography of contributions to American botany, including

paleobotany, and the United States Geological Survey publishes at intervals bibliographies by years of contributions to American geology and paleontology also covering paleobotany and indexed systematically, but neither of these in so far as they refer to fossil plants are as well done as the work before us, and the limited field they cover make them far less valuable, particularly since it is not difficult to keep up with what is coming out in one's own country.

It would appear then that there is a distinct opportunity for an annual publication of just the kind that Jongmans has given us.

The first part contains an alphabetical catalogue of the papers which have appeared in 1908, arranged by authors, and in a rather careful examination no omissions have been discovered, although it is too much to expect that there are none such. A minor defect noticed is that the same work, as for example Engler's *Jahrbuch* is cited in several different ways. The second part, also arranged alphabetically, is a systematic list of species, genera and other botanical groups described or merely referred to by the various authors in their comparative discussions, including also the living plants with which the fossil plants are compared, and the various geological horizons. A chance quotation will show the character and scope of this part: "*Alethopteris lonchita* Schl.—Karbon, North Derbyshire—Horwood (2), p. 6, Pl. A, Fig. 1." Synonyms are given a place and their equivalence as determined by the various authors are indicated, so that the work is a complete compendium of all that is being done along paleobotanical lines throughout the world, and the reader can get a very tolerable, even if skeletal, idea of the character and contents of every paper published, something that it is not always easy to do from the titles of papers.

If the high standard of this first volume is continued and subsequent years appear more promptly the work will prove well nigh indispensable to every student who wishes to keep informed of the rapidly increasing flood of paleobotanical investigation. The author and

the publisher are both to be congratulated upon the real excellence of their work.

EDWARD W. BERRY

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BOTANICAL NOTES

AN EXPERIENCE AND A SUGGESTION

It was the writer's good fortune to be asked to take part in the work of the first week of the fourth session of the Graduate School of Agriculture held at the Iowa State College, Ames, Iowa, during July.

Having had no previous experience with this national school, which meets biennially, the writer was not prepared to find, as he did, the work of such high grade. There were lectures on plant breeding, plant physiology, the soil scientifically considered, the scientific basis of "hardiness" of plants, the scientific basis of animal husbandry, agricultural economics, the bacteriology of dairying, the scientific breeding of poultry, irrigation, etc. In addition to the lectures, which were usually scheduled for the forenoon and the early part of the afternoon, there were held in each subject two-hour seminars in which the topics which had been presented by the lecturers were freely discussed by the listeners, and the lecturer was asked to present more in detail the matter presented in a general way in the lecture. This proved to be very helpful to lecturers and audience.

The week's experience of the writer leads him to the conclusion that in the Graduate School of Agriculture, as now managed, the scientific men of the country have an organization of very great importance. The lectures and the discussions were of such a high order as would have taxed the knowledge of any of the larger scientific bodies which meet annually in this country. The writer suggests that in the meetings of the American Association for the Advancement of Science something of the plan carried out in this School of Agriculture should be adopted. One who has attended the meetings of the American Association for many years realizes that much is lost by the fact that usually there is no unity in the program for any day; occasionally in

the later years we have had a symposium on one subject, and it has been the general feeling that the symposia have been the most successful parts of the programs. The writer suggests that there might well be several subjects (in botany, for example) which should receive especial attention in the week given to the presentation of papers. Thus there might be at a stated hour each day a lecture by a master on, say, the subject of cytology, and another lecture each day at a stated hour, on morphology, while another might be given on physiology, and possibly more, and then for each evening in some convenient room, a seminar meeting could be held on one of the subjects presented by the lecturers.

The writer feels that his experience at Ames, where the air was full of the most modern science, warrants him in suggesting that the men who constitute the membership of the scientific societies have something to learn from this Graduate School of Agriculture.

THE ACTION OF THE BRUSSELS CONGRESS

FROM the reports which have reached us regarding the action taken by the International Botanical Congress at Brussels it is evident that while gratifying progress has been made in the attempt to reduce the nomenclature of botany to uniformity much still remains to be done. However, we must not overlook the fact that to have come to some agreement, and to have formulated rules covering so many points is itself a triumph for those who have insisted upon the need of rules. It is not so very long ago that certain botanists were "a law unto themselves," to the disgust and indignation of others who were the advocates of the application of a general law. That was a condition of anarchy, which happily we are now delivered from. The Vienna Congress, and later the Brussels Congress, have emphasized the fact that botanists the world over are willing to come to an agreement in this matter of nomenclature. And this is a great gain. Once this is accomplished it will be only a question of time as to the enactment of the best rules. To be will-