QUOTATIONS

THE BRITISH ASSOCIATION AT CARDIFF

THE Cardiff meeting of the British Association for the Advancement of Science came to a successful end last night. Any attempt to follow, or, still more, to report, its proceedings in detail was baffled by the multitude of subjects covered, and the subdivisions of the association into specialized sections. There were eleven sections and one subsection at work simultaneously every day, to say nothing of a number of committees, subcommittees, and conferences. Some of the papers and discussions dealt with questions of the widest interest; there were others apparently admitted only to gratify individual readers or speakers, or to pander to notoriety. There was a notable tendency to combination of the sections for the discussion of borderland questions, and on every occasion where this took place the attendance at the combined meetings was much larger than the sum of the attendances at separate meetings. It is understood that such concentration has the sympathy of the council and officers. We trust that it will be encouraged, and we could wish that it would lead to a permanent fusion, at least for the purpose of the public meetings, of kindred sections. The general standard of the proceedings was highest in Section A, which has most successfully resisted subdivision, although it covers mathematics, astronomy, and the physical sciences.

The leading scientific feature of the meeting was the president's exposition of the need and advantage of increased study of the sea. The Lord Mayor expressed the hope that some of the merchant princes of Cardiff might be led to establish a department of oceanography attached to the university or to the National Museum of Wales. Far be it from us to offer advice that might chill local generosity. Hitherto private munificence has played a greater part in the encouragement of learning and research in America than in England and Wales. But oceanography requires expensive equipment. The chair established by Professor Herdman himself at Liverpool and the station of the Marine Biological Association at Plymouth still need encouragement and support. Much better work might be accomplished by two good than by three indifferent centers. Although research must have a local habitation, its results are of universal benefit. If the hearts of the magnates of Cardiff warm to the science of the sea, their benevolence, although bestowed on Plymouth and Liverpool, would still assist the fisheries and the ocean traffic of their own city. But if local munificence must have an object characteristically local, there are many opportunities for research strictly bearing on other industries of South Wales.

The President made the interesting suggestion that the time had come to prepare a new "Challenger" expedition. He was supported by all the sections concerned, by physicists, astronomers, zoologists, botanists, geographers, and geologists, all of whom know of scientific and practical problems requiring investigation at sea. Mr. F. E. Smith, Director of the Admiralty Board of Research, at the conference held on Thursday afternoon, stated that the Lords of the Admiralty favored the idea, with the reservation that the whole cost of an expedition, which would have objects far beyond naval requirements, should not fall on the Navy Estimates. The original "Challenger" expedition was financed by the government, on the invitation of the Royal Society. From 1872 to 1876 the ship sailed all the oceans of the world, except the Indian Ocean, which the government of India wished to be reserved. The results were issued in fifty volumes issued from 1880 to 1895, under the guidance of the late Sir John Murray. By general admission the "Challenger" expedition was the greatest scientific exploit in aim and achievement undertaken before or since. But, like all scientific research, it showed the need of further research, for the deepest dredge can not bring up all the secrets of nature. The general committee of the British Association recommended their council to appoint a small expert committee to devise a program of work, and to consider the technical apparatus and the scientific staff

that would be requisite. Adequate preparation of a scheme may take several years, perhaps in the circumstances a fortunate delay. For a new "Challenger" expedition will be very costly, and we trust that the government and the national finances will then be in a better position to undertake what certainly should be a national enterprise.—The London *Times*.

SCIENTIFIC BOOKS

Principles of Animal Biology. By A. Franklin Shull, with the collaboration of George R. La Rue and Alexander G. Ruthven. McGraw-Hill Book Co., Inc., New York.

Most teachers of elementary zoology have for some time acknowledged that the almost exclusively morphological texts fail to give the beginner in the science a fair introduction to the field of zoology. Several recent texts and revisions of some of the older ones have endeavored to meet the demand for a more thorough treatment of the underlying principles of the subject. For one reason or another most of these attempts have failed to meet with general approval. In many instances they have remained predominantly morphological with intercalated sections on the principles. The Principles of Animal Biology by Shull, La Rue and Ruthven promises to meet the requirement for a text dealing with the fundamental biological principles far better than any other that has appeared to date.

Throughout the text there are brought together distinctly modern view points regarding the various subsciences of zoology. The book is not only well written so that the reader is fascinated by the smoothness of the narration but in addition it has all appearances of being so organized that it may be easily assimilable by the beginning student. In only a few instances does the treatment seem to be beyond the grasp of the average student. In the discussion of the physiology of cells (Chapter III.) the extent of chemical knowledge assumed to be possessed by the student is rather great. The structural formulas and the highly technical chemical terminology would not be intelligible to the average freshman, but this is not any fundamental criticism of the book for most teachers are coming to realize that a certain amount of consideration must be given the unusual student.

The book is distinctly the result of a reactionary movement away from the more stolidly morphological and taxonomic treatment of the subject of zoology. A point might be raised as to whether it is not possible that the taxonomic aspect has been curtailed to the extent of impoverishing the opportunity of citing comprehensible instances of the principles for the average student. Correlation of laboratory work and text assignments might easily obviate this possible difficulty. Content of an elementary course and the relative emphasis to be placed upon the various phases of the science are by no means matters of universal agreement among zoology teachers. Consequently a criticism like the foregoing may in the end prove to be either a valid judgment of the text of an ultimate criticism of the one offering it.

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SPECIAL ARTICLES

PRELIMINARY INVESTIGATION OF RIBES AS A CONTROLLING FACTOR IN THE SPREAD OF WHITE PINE BLISTER RUST[1]

Most authorities will now admit that the complete eradication of the white pine blister rust from the country is not possible, but they consider it both possible and feasible to control the disease to a certain extent and to protect certain definite areas of pine. It is also agreed that such protection must be exercised through the eradication of *ribes*.

Under these conditions, the control of the white pine blister rust, or rather the protection of the white pine, depends on a definite knowledge of the habits of *ribes*, especially of the wild plants, and their reactions to different treatments. Projects were there-

[1] Published with the approval of the Director as Paper No. 209, of the Journal Series of the Minnesota Agricultural Experiment Station.