vegetation, the serving as food for game fishes or other valuable species.

SOME BIO-ECOLOGICAL RELATIONS

Even moderate use by man of the timber and forage is almost sure to upset the balance between the plants and animals and their environment on forest and range lands. Clear cutting, over-grazing and burning bring about profound and often catastrophic changes, involving not only the physical but also the biotic factors of site. The removal of the plant-cover promotes destructive erosion, injures the watershed value of an area, affects for the worse the welfare of near-by farming sections and cities and often promotes disastrous floods. As Jones has pointed out, "It was destructive erosion and not war that destroyed Assyria and Babylonia" ("Watershed Handbook," U. S. Forest Service, Southwestern District, December, 1923, mimeographed). Successful natural reproduction of forest, reforestation by either seeding or planting, maintenance of desirable forage cover, all depend on adequate attention to bio-ecological problems, as does also the effective protection of game mammals, birds and fishes.

SOME GENERAL VALUES OF WILD LIFE

Edward W. Nelson, T. S. Palmer, Chas. C. Adams and others have pointed out the educational, recreational and financial value of wild life. Adams's recent detailed study and demonstration ("Importance of Animals in Forestry," *Roosevelt Wild Life Bulletin*, Vol. 3, no. 4, October, 1926) of the important place occupied by animals in the economics of the community is convincing and impressive. It is believed that few technical men, not to mention state and even federal administrators, fully appreciate the value of wild life. Adams very properly stresses the unity of the forest resources. To realize fully on these resources they must be intelligently managed, with the object of making each area produce the largest contribution to the people's welfare, having regard to its varied products in forage, forest and wild life.

CONCLUSIONS

Whereas, in most lines of agriculture over-production is so outstanding a phenomenon that curtailment is widely recommended by economists, precisely the opposite is the case in silviculture and forage production. America's wild crop of timber and of feed for livestock falls far short of the demand. Careful attention must be given to all the conditions surrounding the growth of these crops. Among the factors of major importance are the native animals of forest and range lands. Some are pests; others are beneficial. Most play mixed rôles. Efficient production of trees and forage necessitates thoroughgoing study of the life histories and ecology of all the predominants, both plants and animals. Many animals, especially fishes, birds and mammals, are themselves of extraordinary value for recreation, study, and as a source of income. In some instances the value of the animals on a given area may exceed that of forage or trees. The production of wild life should be more than an incident or by-product of forest and range management. The objective should be maximum continuing values from each area. Attainment of this objective necessitates additional information and increasingly enlightened administration. Research is the foundation of our present prosperity. It must be the corner-stone of future advance. "The application of traditional methods will no longer suffice." Biology must participate fully in the solution of the many problems involved.

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TUCSON, ARIZONA

SCIENTIFIC EVENTS

THE FIFTH INTERNATIONAL BOTANICAL CONGRESS

AT the International Congress of Plant Sciences (Fourth International Botanical Congress) held at Ithaca, New York, in August, 1926, an invitation was conveyed from British botanists for the Fifth International Botanical Congress to be held in England in 1930. The invitation was accepted by the botanists assembled at Ithaca, and arrangements are now being made for the congress to be held at Cambridge about the middle of August, 1930.

An executive committee has been formed to make arrangements for the congress, consisting of Dr. F. F. Blackman, Professor V. H. Blackman, Dr. E. J. Butler, Professor Sir John Farmer, Professor F. E. Fritsch, Professor Dame Helen Gwynne-Vaughan, Dr. A. W. Hill, Professor W. Neilson Jones, Sir David Prain, Dr. A. B. Rendle (treasurer), Professor A. C. Seward (chairman), Professor W. Stiles and Professor A. G. Tansley.

It has been decided to organize the congress in the following seven sections: Morphology (including Anatomy), Paleobotany, Plant Geography and Ecology, Taxonomy and Nomenclature, Genetics and Cytology, Physiology and Mycology and Plant Pathology.

Mr. F. T. Brooks, the Botany School, University of Cambridge, England, and Dr. T. F. Chipp, Royal Botanic Gardens, Kew, England, have been appointed honorary secretaries of the congress, and any com-

munications with regard to it should be addressed to one or other of the secretaries.

THE ANTARCTIC EXPEDITION OF COMMANDER RICHARD E. BYRD

THE National Geographic Society has announced that it will cooperate in the Antarctic expedition, sending observers and contributing $25,000 toward equipment.

The society has issued the following announcement in connection with the expedition:

Conditions in striking contrast to those in the Arctic will be encountered by the Byrd expedition in the Antarctic. Instead of a vast expanse of sea and relatively low land, there is a high continent larger than Australia or the United States.

In the valleys of the Far North the summer sun brings moss, grass and flowers. But, in contrast, the bleak plateaus and mountains of the Antarctic harbor practically no living things because much of their area is perpetually blanketed by snow and ice.

Birds frequent the edge of the ice barrier where they can exist upon the creatures of the sea, but inland no life has been found because there is no vegetation.

The bears, wolves, foxes, rabbits, musk oxen and caribou of the Far North have not a single representative in the Far South known to man.

Commander Byrd's expedition will doubtless be able to augment the information contained upon the now meager maps of the Antarctic continent. Explorers can not sail along the coasts of this continent as they can along those of Australia or Africa.

The great ice barrier and pack ice keep ships at a distance, sometimes of several hundred miles. Only in a few isolated places has this barrier been penetrated. This condition is in contrast to that of Greenland, where the ice-cap extends to the coast in only a few places.

The present map of the Antarctic regions, therefore, is mostly blank, with a few patches of known territory along the coast and one or two narrow paths penetrating inland. The best known region is the land directly south of New Zealand traversed by Shackleton, Scott and Amundsen.

Among the important problems to be worked out by Commander Byrd are those relating to the meteorology of the southern continents and its effect on world weather, especially that of the southern hemisphere.

Although the field for zoological research in the Antarctic is narrow, the party will be on the lookout for any specimens that may be encountered in regions hitherto unvisited by man. Any rock specimens that give promise of adding to the geological knowledge of the unexplored continent will also be collected.

WOOD COLLECTIONS OF THE FIELD MUSEUM

WORK has been begun to make the wood collections at Field Museum of Natural History the most comprehensive and authoritative for scientific and economic reference purposes in the middle west.

Additions to the exhibits, rearrangements of them and revision of the labels are planned, all designed not only to increase the interest of the collections to the general public, but to make them also of direct service to men in the lumber business, government forestry officials and others interested in conservation and reforestation, to students and scientists specializing in this branch of botany, and to every user of wood for building or manufacturing purposes.

Professor Samuel J. Record, of Yale University School of Forestry, who has spent seventeen years in specialized research on woods and wood products, has been engaged to supervise this work, and is now at the museum. Professor Record, who has traveled widely in this country and abroad studying the various types of woods from the time of their growth in the forests through the various stages of logging and milling to their appearance as building materials or manufactured products, is the author of numerous volumes on this subject and editor of the magazine *Tropical Woods*.

A number of leading companies in the lumber and woodworking industries have indicated to the museum that they will cooperate in the work being undertaken.

Many woods from western states, some from the eastern states, and a large number from tropical and other foreign localities not heretofore included in the museum collections are to be added. These exhibits, like those already on display, will contain specimens of the trunk and foliage of the various trees as they appear in life, photographs illustrating their growth, maps showing their distribution, typical boards and specimens of the other principal economic products manufactured from them, and monographs containing the most important data regarding their growth, their properties and their uses.

Many lumber manufacturers and other users of wood are insufficiently acquainted with the various types of woods, and their uses, particularly the foreign woods. At the present time the amount of foreign woods coming into our markets is constantly increasing, owing to depletion of our own forests, and it is highly important to know which of these foreign woods are suited for various purposes, and which are not. As Chicago is the lumber center of the Middle West, the museum collections will be able to serve the entire industry in this region in adjusting itself to the new conditions which are appearing, and which will rapidly become more apparent in the near future. It is hoped that the museum's work may also furnish a contribution to the conservation and reforestation movements in this country, by supplying information which will advance these movements.