evolution of air and ocean under the influence of early life. Mr. Allen has made an important contribution to pre-Cambrian geology, of far more than local value.

Alfred C. Lane

MEMBERS HOLDING LONGEST CONTINUOUS MEMBERSHIP IN THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

Through a clerical oversight, by reason of the original list having been drawn up for another purpose, the following names were inadvertently omitted from the roll of those who now hold the longest continuous membership in the American Association, printed in Science for December 3. It will be noted that all in the following list are Life Fellows of the Association.

*Hitchcock, Charles Henry, Ph.D., LL.D., Honolulu, Hawaii. (11.) 1874. E.
*Lyman, Benjamin Smith, E.M., 708 Locust Street, Philadelphia, Pa. (15.) 1905. E.
*Gilbert, Grove Karl, LL.D., U. S. Geological Survey, Washington, D.C. (18.) 1874. E.
*Morse, Edward Sylvester, Ph.D., Peabody Museum, Salem, Mass. (18.) 1874. F, H.
*Stephens, W. Hudson, Lowville, N. Y. (18.) 1874. E, H.
*Warner, James D., 463 East 26th Street, Flatbush, Brooklyn, N. Y. (18.) 1874. A, B.
*Hanaman, Charles Edward, Troy, N. Y. (19.) 1883. F.
*Mendenhall, Thomas Corwin, Ph.D., Sc.D., LL.D., 329 North Chestnut St., Ravenna, Ohio. (20.) 1874. B.

L. O. Howard,
Permanent Secretary

PAN-AMERICAN

To the Editor of Science: Will you kindly tell me the scientific meaning of Pan-American? Is Canada in or out of the Pan?

Otto Klotz

Ottawa,
December 9, 1915

SCIENTIFIC BOOKS

Tierbau und Tierleben. Von R. Hesse und F. Doflein. Band 2. Das Tier als Glied des Naturganzen von F. Doflein. B. G. Teubner, Leipzig und Berlin. 8vo. Pp. xv + 960. 740 text illustrations and 20 plates.

The second volume of Hesse and Doflein's "Tierbau und Tierleben" has just been issued by Teubner, of Berlin and Leipzig. The first volume, from the pen of Professor Hesse, appeared in 1910 and dealt with the structure and functions of the animal body. The companion volume, the work of Professor Doflein, bears the date of 1914 and takes up the consideration of the animal as an element in nature. It is divided into three books. The first has to do with animals in their relations to their organic surroundings and deals with their feeding habits, their means of defense, their sexual life, their migrations, the care of their young, and their social life. The second book treats of animals in their relations to their inorganic environment, such as general cosmic changes, the surrounding medium and the substrate, the quantity and quality of food, temperature and climate, and light. The third and last book has to do with the adaptive structures and activities of animals, and the explanation of these phenomena. The volume contains almost a thousand pages and is illustrated by some twenty plates and over seven hundred text-figures. The press work, including the illustrations, is beautifully done. Gothic type, however, gives the page a less modern scientific aspect than Roman would have done. Some of the illustrations, like Fig. 574 of the sleeping places of Indian birds, verge more on the theatrical than on the natural; others, like Liljefors' grouse and wild-goose plates, are really wonderful works of art. Here and there a few mistakes are to be noted; thus Fig. 721 is incorrectly attributed to Packard. But in such a wealth of material it is impossible to comment critically. Suffice it to say that the immense body of new and accurate information brought together in this volume will make it a most welcome addition to the present source of information used by the modern zoological reader. G. H. Parker

Flora of New Mexico. By E. O. Wooton and Paul C. Standley. Contrib. U. S. National Museum, Vol. 19. 1915. Pp. 794.

Many years ago Professor E. O. Wooton, then in charge of the department of botany at the New Mexico Agricultural College, planned a flora of New Mexico. It was at first expected that the work would be finished in a few years, but various difficulties arose, while every new locality examined furnished additions to the list of species. Thus, as the years passed, the collections tended to run ahead of the work done on them, and the completion of the flora appeared more remote than ever. Eventually, Mr. Paul C. Standley became Professor Wooton's assistant, and through the joint labors of the two the flora made rapid progress; after both had moved to Washington, and were in a position to consult the larger herbaria, it was finally completed. It was then offered to the National Museum for publication, and met with the usual delays. Owing to its great size, it had to be condensed, everything not considered essential (*e. g.*, names of collectors) being cut out. As it now appears, it is a bulky volume, containing an enormous amount of information. The number of species treated in 2,975, but, as the authors state, the actually existing flora is doubtless much greater. Considerable areas in New Mexico have never yet been visited by a botanist, while others have only been superficially examined. Though the "Flora of New Mexico" is necessarily of the nature of a preliminary survey, it forms an excellent guide to the plants of the state, and is reasonably complete for all the better known localities. Each genus is briefly defined, all the species are included in very clearly written keys, and in addition there are numerous remarks which greatly facilitate the ready recognition of the various plants. The type locality, general range and range in New Mexico are given. It would be hard to imagine a more useful and adequate treatment of the subject within the space-limits imposed. After spending many hours in the study of the book, the reviewer finds his admiration for it increasing with greater familiarity, a process the reverse of that experienced in relation to some other works of the same general type. There may be, there certainly are, matters which will require amendment, but we appear to have the best presentation which years of study in the field and herbarium, and careful consideration of all the available evidence, can give at the present time.

The new species found in the course of the investigation have been very numerous, including members of such genera as *Yucca, Agave, Quercus, Clematis, Rosa* (two), *Amelanchier, Padus* (six), *Lupinus, Robinia, Rhus, Acer, Garrya, Sambucus,* etc., etc. Although New Mexico is bordered by Colorado on the north, it contains a very large number of species not found in the latter state. How many of these are really endemic or precinctive can not be ascertained until the plants of Arizona and Chihuahua are better known, but it is practically certain that several at least are confined to some of the large mountain groups. In discussing Wooton's cocklebur, *Xanthium commune Wootoni,* it is remarked that it appears to be a distinct species, but is not placed as such on account of the occurrence of *commune* and *Wootoni* burs in a single instance on the same plant. DeVries ("Species and Variation," 1905) grew *X. Wootoni* from seed, and found it to come true; in his discussion of it he provided a binomial designation. The reviewer, two years ago, found a specimen of *X. commune* in a greenhouse at Boulder, having several *Wootoni*-like burs, although no *X. Wootoni* has ever been seen in Colorado. We must apparently conclude that *X. Wootoni* is a valid species, but that *commune* from time to time varies or mutates to a virtually identical form.

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SCIENTIFIC JOURNALS AND ARTICLES

THE concluding (October) number of volume 16 of the *Transactions of the American Mathematical Society* contains the following papers:

W. V. LOVITT: "A type of singular points for a transformation of three variables."

J. K. LAMOND: "The reduction of multiple *L*-integrals of separated functions to iterated *L*-integrals."