ing) suddenly disappeared, apparently crossing the valley to that range. Lack of facilities and unexpectedly hasty abandonment of the camp unfortunately prevented preservation of skins of the birds.

The Sonora pigeon (at least the bird observed at Tinajas Altas) differs so widely as to be readily distinguishable from the mourning dove in size, in form and relative length of tail, in mode of flight, in greater glossiness of plumage, in the rufous breast and sheeny neck and the absence of the dark spot on the side of the neck, in color of legs and feet and in color of skin and flesh; and it differs from the band-tail pigeon (well-known, *e. g.*, in Kern River Valley, California, where it was seen ingeniously snared by Indians) in more graceful slenderness of body, in mode of flight, in color, in trim and compact feet, red instead of yellowish, and especially in the elongated and mobile tail; and there seem to be no other southwestern forms with which it could be confounded.

W J McGee

Washington, D. C.,
December 13, 1910

Scientific Journals and Articles

Owing to the recent death of Dr. Christian A. Herter, editor in chief, inquiries have been made regarding the future of the *Journal of Biological Chemistry*. It is therefore proper that those who have been interested in the journal should be assured of its continuance in its present form. A statement of certain circumstances connected with the foundation of the journal will give this assurance. In order that it should not become wholly dependent upon one individual, Dr. Christian A. Herter, one of its founders, invited four others to join with him in the formation of a corporation, which should have as its sole purpose the creation, conduct and continuation of the journal. The corporation will now assume full charge of the journal and continue the publication without interruption. It is the purpose of the remaining members of the corporation to adhere to the traditions established by Dr. Herter. The loss of Dr. Herter from the management of the journal necessitates some reorganization of the editorial staff. This will be undertaken in the immediate future by the corporation. The office of the journal will continue to be at 819 Madison Avenue, New York, N. Y. Manuscripts may be sent to this address, or to Prof. A. N. Richards, University of Pennsylvania, Medical Department, Philadelphia, Pa.

The contents of *Terrestrial Magnetism and Atmospheric Electricity* for December, 1910, are as follows: Portrait of Robert Were Fox; "Proceedings of the Berlin Meeting of the Commission on the Magnetic Survey of a Parallel of the International Association of Academies," by Adolf Schmidt; "Proceedings of the Berlin Meeting of the Commission on Terrestrial Magnetism and Atmospheric Electricity of the International Meteorological Committee," by Adolf Schmidt; "The Work of the Magnetic Commission of the International Meteorological Committee, 1896–1910," Editorial Review; "Life and Work of Robert Were Fox, 1789–1877," by L. A. Bauer; "On Precursors of Magnetic Storms," by R. L. Faris; "Record of Lightning Stroke at Cheltenham Magnetic Observatory," by R. L. Faris; "The Physical Theory of the Earth's Magnetic and Electric Phenomena, No. II.," by L. A. Bauer; Letters to Editor and Reviews.

Botanical Notes

A much needed book

Every botanist who has had to help students who wish to know something as to the names and classification of the commonly grown shrubs in private and public grounds has felt the need of a book of moderate size and cost which deals with these plants. Even Dr. Gray felt this need, and more than forty-seven years ago he brought together a "Garden Botany" supplement to the fourth edition of his "Manual." A little later he compiled the "Field, Forest and Garden Botany," which in spite of its imperfections was very useful to the young botanists of that period, as is the now out-of-date second edition of the same book. When Professor Bailey

brought out the "Cyclopedia of American Horticulture" he covered the whole field here referred to most completely, but the four- to six-volume size of the work, together with its very considerable cost, practically prohibits its ownership by the individual student.

So it is with most hearty approval that the writer opens the little book entitled "Ornamental Shrubs of the United States," by the late Professor Austin C. Apgar (American Book Company). In 352 small octavo pages the author has packed away a great deal of information as to the shrubs one is likely to meet in the eastern part of the country, and his brief descriptions are helped out by 621 wood-cuts which accompany the text. Those who are familiar with Apgar's "Trees of the Northern United States" will find in this book a counterpart to that very useful book of fifteen to twenty years ago, before the appearance of Britton and Brown's "Illustrated Flora," or Sargent's "Trees of North America." Apgar's "Trees" was the forerunner of our illustrated manuals, and it taught us the value of properly selected drawings as aids to the more formal descriptions, a lesson which has not been lost upon later authors.

The book now before us has a twenty-page introduction, which may be necessary, but which probably should be relegated to the fine-print glossary at the end of the text. Then follow about twenty pages of keys, which should enable the merest tyro to "run down" the plants he may have in hand. These we have not tested, but no doubt they will prove usable. No one can make keys that are not now and then misleading, and no doubt now and then the student will get "off the track," but in such event he will simply have to try again until he succeeds in reaching his destination—the name and description of the unknown shrub.

The manuscript of this book was left practically complete by its author at his death, and it was prepared for publication by his daughter and Professor Harshberger. The book should merit an early new edition, and when that is made the nomenclature and the recognition and sequence of families should be modernized. The Benthamian sequence is quite too much out of date for a book of this kind.

AN IMPORTANT EXPERIMENT

"EXPERIMENT Station Work with Special Reference to the Streamflow Study" is the title of a paper recently presented by Mr. C. G. Bates before the Society of American Foresters at Washington. After briefly reviewing the work of the Coconino Forest Experiment Station in Arizona and of the Fremont and Wagon Wheel Gap Stations in Colorado, Mr. Bates described in detail the methods and equipment to be used in the streamflow experiment now under way at the last-named station. This experiment, which is being carried on jointly by the Forest Service and the Weather Bureau, involves the measurement for a number of years of two streams flowing out of forested watersheds, and, later, a comparison of the flow of these streams after the forest cover has been removed from one of the watersheds. Dams, weirs and recording instruments for measuring the flow of the streams have been installed as well as instruments for measuring the various atmospheric factors which may affect the flow. No point has been neglected in making this experiment as conclusive as possible. By means of the two periods of comparison between the two streams the importance of all outside factors is practically eliminated.

This experiment, which has been preceded by but one of a similar nature in Switzerland, is in reality much more comprehensive than any yet undertaken and should throw a good deal of light on the much-mooted question of the relation of forests on mountain watersheds to the flow of the mountain streams and to their usefulness for irrigation.

PLANT GENERA

QUITE recently the Leipzig publisher, Weigel, brought out a most useful book, "Die Pflanzengattungen," by J. C. T. Uphof, of Amsterdam, who signs himself as "Botaniker und Gartenbautechniker." It gives the approved name, geographical distribution, num-

ber of species and the relationship of every genus of vascular plants ("Phanerogamen und Pteridophyten"). Whether the remainder of the vegetable kingdom is to be covered in this manner by the author is not stated, but we may here express the hope that this will be done.

By leaving out synonyms, and by printing two columns on each page the author and publisher are able to bring the whole book into 260 pages, including a four-page "Uebersicht der Familien" and a three-column, sixteen-page index. The sequence of families is essentially that of Engler and Prantl, *reversed,* and the older ideas as to the limits of families are generally adopted. Thus we find *Compositae* undivided, as also *Convolvulaceae, Ericaceae, Rosaceae* and *Cupuliferae,* while on the other hand we have *Leguminosae* divided into *Mimosaceae, Caesalpiniaceae* and *Papilionaceae,* and *Sapindaceae,* into *Sapindaceae,* proper, *Hippocastanaceae* and *Aceraceae.* The number of species is given for each genus, tribe, family, series, class and phylum, and for the larger groups the numbers of genera and families are given. We know of no other work in which numerical relations have been so fully worked out as in this little book. Incidentally we find in these latest estimates that the number of known species of plants[1] is considerably larger than has been supposed, and we have the data for making the following changes in the table as given on the pages cited:

Pteridophyta	3,820	species	instead of	2,500
Calamophyta	24	"	"	20
Lepidophyta	701	"	"	900
Cycadophyta	137	"	"	140
Strobilophyta ...	386	"	"	450
Anthophyta 132,584		"	"	110,000

The latter are divided into: Monocotyledons, 23,747 species instead of "about 20,000," and Dicotyledons 108,837 instead of "about 90,000." These corrections bring the total number of species of plants now known up to somewhat more than 233,000 (instead of 210,000).

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[1] See Science for November 11, 1910, pp. 669–670.

Societies and Academies

The Philosophical Society of Washington

The 684th meeting of the society was held on November 19, 1910, Vice-president Rosa in the chair. Three papers were read:

Record of Lightning Stroke at Cheltenham Observatory: R. L. Faris, of the Coast and Geodetic Survey.

This paper gave a description of the occurrence of a lightning discharge which struck the Cheltenham magnetic observatory during the prevalence of a severe thunder-storm on the evening of July 12, 1910, and the effect it produced upon the self-recording magnetic instruments. Lantern slides of the photo-magnetic records during the thunder-storm were exhibited, and tables of base-line values for periods of time before and after the occurrence of the disturbance which showed that no permanent displacement of the magnets had been produced by the electrical discharges. (This paper will appear in full in the *Journal of Terrestrial Magnetism* for December, 1910.)

Recent Work on the Selective Emission of the Welsbach Mantle and the Acetylene Flame: Dr. W. W. Coblentz, of the Bureau of Standards.

The speaker described experiments on the emission and the absorption of the acetylene flame. The results obtained show that, within the limits of experimental error, in the visible spectrum the emissivity is a simple function of the thickness of the radiating layer of the flame, while in the infra-red the emissivity is a more complex function of the thickness. The acetylene flame has an absorption band at .6 μ, with regions of greater transparency in the violet and in the red. No emission band exists at .7 μ, as was previously supposed. The conclusion reached is that the radiation from the acetylene flame is purely thermal, and that it is not necessary to introduce the question of luminescence to explain the observations.

Experiments were also described on the radiation from the Welsbach mantle and from the same material used as a solid rod. The spectral energy curves of these two forms of radiators of the same material are entirely different, due to the difference in the thickness of the radiating layer. Cerium oxide changes its pigment color