used, although not to the extent so familiar in similar German manuals. Practically all synonyms are omitted, and this, while inconvenient for some users of the book, is no doubt the better policy in a compact manual. In this the author follows the wise example of Gray's 'Manual.' Synonymy, with all its confusing difficulties, need not be brought to the beginner's notice, and for the older botanist, anything short of full citations (impossible in such a manual) is of little or no use.

Students will be interested in noticing that 'Order' and 'Family' are not identical groups, but that they stand in their proper relation in this book, as in zoological manuals. The full citation of authorities for species, including double citation where necessary, and the citation of the author of each family name, are welcome novelties in an American botanical manual. As to the nomenclature used, the statement is made in the preface that "the principles adopted by the botanists of the American Association for the Advancement of Science at a meeting held in Rochester, N. Y., in 1892, and in Madison, Wis., in 1893, supplementary to the Code of Nomenclature adopted by the International Congress of Botanists held in Paris, France, in 1867, have been followed." Accordingly, we have here a manual in which the much-discussed 'Rochester Rules' are in force, and from this time forward young botanists will be taught this nomenclature from the first. There will henceforth grow up a generation of botanists for whom the names here given are orthodox.

This book must at once find its way into the schools and colleges, to which it may be commended for the students in systematic botany.

It remains to be said that the publisher has met and successfully solved the difficult task of bringing so large an amount of matter within the compass of a book not too large for easy carrying into the field. It might easily have been made still smaller and lighter by the use of still thinner paper, and a little closer trimming of the margins. As compared with the pocket edition of Gray's 'Manual' this is a much larger and heavier book; if printed on the same paper and trimmed as closely, this book would weigh but twenty ounces, instead of thirty as it does now. We suggest that in future editions the printer and binder try to make some improvement in this respect.

CHARLES E. BESSEY.

SCIENTIFIC JOURNALS AND ARTICLES.

The American Naturalist for October contains the third and concluding part of W. M. Wheeler's 'Compound and Mixed Nests of American Ants,' the three forming an excellent compendium of our knowledge on the subject. Bashford Dean presents some interesting 'Notes on Living Nautilus' and Charles C. Adams has an article on 'Base-leveling and its Faunal Significance,' with illustrations taken from the topography and distribution of mollusks in the southeastern United States. The balance of the number is taken up with numerous reviews of scientific literature.

The Journal of Comparative Neurology for October. 'The Cranial Nerves and Cutaneous Sense Organs of the North American Siluroid Fishes,' by C. Judson Herrick. This is a detailed exposition of the components of the cranial nerves of the catfish and of the structure and innervation of the cutaneous sense organs. Of the latter there are four types, three classed as neuromasts (Merkel's *Nervenhügel*) and one as terminal buds (*Endknospen*), the former innervated by lateralis nerves, the latter by communis. 'The Psychological Theory of Organic Evolution,' by H. Heath Bawden, is an attempt to put some meaning into the term mental evolution without falling into the error of talking about unconscious mental states. Natural selection may in some instances be a survival of the fittest among accidental variations, but in many cases natural selection takes place in and through the conscious adaptation of means to ends. The condition of consciousness is organic tension. The evolution of consciousness has followed the path of critical stress in adaptation of organic forms. Hence the criterion for the presence of consciousness is not simply adaptation of means to ends, but adaptation under conditions of organic tension, *i. e.*, the ability to vary the use of means in the attainment of an end.

The Popular Science Monthly for November has for frontispiece a portrait of Charles Darwin

and the first article is taken from the *Journal of the Linnean Society* for 1858, being the now historic paper 'On the Tendency of Species to form Varieties; and on the Perpetuation of Varieties and Species by Natural Means of Selection' by Charles Darwin and Alfred Wallace. A. E. Verrill tells 'The Story of the Cahow' an unknown and probably extinct bird found abundantly on the Bermudas at the time of their discovery. The use of the bird and its eggs for food was the cause of its speedy extermination. Under the caption 'Psychiatry—Ancient, Medieval, Modern,' Frederick Lyman Hills gives a brief history of the methods employed for the treatment of the insane from early times to the present. John E. Gorst makes a plea for 'The National Control of Education' and Edward L. Thorndike discusses 'The Evolution of the Human Intellect.' Bradley Moore Davis considers 'The Origin of Sex in Plants' and David Starr Jordan has a brief article on 'The Fishes of Japan' with observations on the distribution of fishes. Paleontologists will hardly accept Dr. Jordan's three laws governing animal distribution as all-sufficient. The final paper is by A. C. Haddon on 'The Omen Animals of Sarawak' and contains much interesting information.

The Auk for October opens with a welcome article by William Brewster entitled 'An Ornithological Mystery' describing the notes and nest of a bird found in the vicinity of Cambridge, Mass., which so far has not been seen, but is presumably the little black rail. A. C. Bent describes, with photographs, the 'Nesting Habits of the Anatidæ in North Dakota' and Arthur H. Howell gives 'A Preliminary List of the Summer Birds of Mount Mansfield, Vermont,' including 86 species. J. A. Farley tells of the 'Alder Flycatcher (*Empidonax trailii alnorum*) as a Summer Resident of Eastern Massachusetts,' and Outram Bangs has a paper 'On a Collection of Birds made by W. W. Brown, Jr., at David and Divala Chiriqui' including descriptions of several new species and subspecies. Hubert Lyman Clark treats of 'The Classification of Birds,' as based on their pterylosis, an excellent paper, but one which will impress many as an additional piece of evidence that birds may not be classified by one character only. William Alanson Bryan gives a 'List of the Hawaiian Birds in the St. Louis College Collection, Honolulu, H. I,' and finally, Francis J. Birtwell describes the 'Nesting habits of the Evening Grosbeak (*Coccothraustes vespertinus*).' The notes and reviews are numerous.

Bird Lore for September–October has a frontispiece showing the fine 'Bird Rock Group' of sea birds recently placed on exhibition in the American Museum of Natural History. H. W. Henshaw concludes his 'First Impressions of Hawaiian Birds,' Ralph Hoffman tells of 'A Chebic's Second Brood' and we have the regular instalment of 'Birds of the Season,' discussing the bird life of October and November in various parts of the United States. For young observers we have an account by A. V. Kidder of 'A Bittern at Close Range,' and we have Notes from Field and Study, Reviews, and the section devoted to 'The Audubon Societies.'

The Plant World for September has articles on 'Notes on Trees of Cuba,' by Valery Havard, a biographical sketch of the late 'Dr. Charles Mohr,' by S. M. Tracy; 'The Pasque Flower,' by John M. Holzinger, and many interesting briefer items. The instalment of the 'Families of Flowering Plants,' by Charles L. Pollard, continues the description of various families of the order *Sapindales*.

Popular Astronomy for November continues the study of the light curve of the new star in Perseus, by Dr. H. C. Wilson, and includes a chart of this curve which has been compiled with great care from many sets of observations. Dr. Lewis Swift, who has but recently given up the directorship of Mount Lowe Observatory on account of failing sight, permits the publication of a photograph of his various medals. This is accompanied by a brief résumé of his life as an astronomer, and of the discoveries for which the medals were awarded. Dr. T. J. J. See, of the Naval Observatory, contributes 'Preliminary Investigations of the Probable Diameters, Masses and Densities of those Satellites which have Measurable Discs,' and W. F. Denning, of England, writes of 'The Motion of the Great Red Spot and other

Markings on Jupiter.' Other articles are: 'The Astronomy of the Nebulæ,' by W. W. Payne; 'The Coming Opposition of Eros,' by Mary Clark Traylor; 'The Limits of Vision,' by Edwin Holmes, and 'The Brightness of Star Light,' by J. E. Gore.

DISCUSSION AND CORRESPONDENCE.

THE UNIVERSITY OF WEST VIRGINIA.

WITH the final resignation of Jerome Hall Raymond, last March, from the presidency of West Virginia University, and the election of Dr. Purinton, of Denison, to succeed him, another turbulent period in the history of that institution has come to an end.

It is worth noting that no one of the six men who have served as presidents of the West Virginia University since its foundation in 1867 has proved generally acceptable to the people of the State, and that no one has been less acceptable than President Raymond. And yet, according to a statement made to the writer by one member of the University faculty who has always lived in Morgantown, no other president began his work under more auspicious circumstances. The board of regents had a good working majority of intelligent men who were deeply interested in the welfare of the University and who were anxious to give a hearty support to their enthusiastic young president. The people in the surrounding community and the members of the faculty were also more friendly and more inclined to be pleased with Mr. Raymond than they had been with any of his predecessors.

Notwithstanding all this, trouble was inevitable. The president was young, aggressive and thoroughly saturated with the spirit of unlimited, rushing expansion which had prevailed in the University of Chicago during the preceding five years. The faculty of the West Virginia University, on the other hand, did not at that time (1897) contain a single Ph.D. from any reputable university. Some of the professors were therefore naturally unfit to be in charge of any department in a modern college or university, and their unfitness became especially glaring through the new president's vigorous attempts to convert the old Morgantown institution into a miniature copy of the University of Chicago. Several of the professors, moreover, not only lacked the training necessary to make them competent instructors in a university, but were in addition so addicted to financial schemes and to politics as to be a hindrance to the peaceful development of any state institution of learning.

Unhampered and alone, Mr. Raymond succeeded for a time in carrying out his plans in the management of the University. The University catalogue was entirely remodeled on the plan of the University of Chicago catalogue, and the studies were correspondingly rearranged; the summer quarter was added, and the four-quarter system with the 'quarterly convocations' was introduced; an unlimited elective system of studies leading to one degree only (B.A.) was adopted; faculty meetings were abolished; and the president's plans and changes were all carried out by means of committees of his own appointment.

All these changes and many others less fundamental, though scarcely less irritating to one or another among the professors, followed in rapid succession. One by one the older members of the faculty came to feel that they were entirely unsatisfactory and that the president would like nothing better than to replace them as soon as possible by men of his own selection. This led to a tacit or open combination of the greater number of the professors against the president—a result which might have been expected, especially considering the records of forced resignations, reappointments and quarrels of various kinds which formed a part of the previous history of the University. The opposition spread rapidly not only among the students and the people of Morgantown but also throughout the State, where it unfortunately developed into a narrow-minded support of 'West Virginians' as against 'foreigners.' The temper of some of the crudest of Mr. Raymond's enemies is well illustrated by the extravagant vulgarity of the attacks which were made upon him during the winter and spring of 1900 by the *Clarksburg News* and the *New Dominion* of Morgantown. The unpopularity of the president alike among the faculty, students and the people, especially the local people, was in addition much increased by his