At various places around the room are basaltic columns, fossil tree trunks, large rock specimens, etc.

Besides the mineralogical and geological specimens, there is a collection of 1550 recent mollusks, a botanical collection, large mahogany and tulip tree sections, charts showing Japanese drawings of fishes, a Japanese spider crab (Macrocheirus Camperi), which measures 11 feet 6 inches, skeleton of a Right Whale, caught in the Raritan, large antlers, etc.

Prof. A. H. Chester, curator of the museum, has his fine collection of over 4000 mineral specimens, in cases, in one of the class rooms.

All of the collections are being relabeled and classified, and all but three cases are finished.

Accessions are constantly being made by purchase, exchange and gift. The museum is free to all students or visitors every week day from 8 to 12 a. m. and 1 to 5 p. m. A collector and student of forty years' experience is constantly in attendance, to show and to answer any questions pertaining to the collections.

W. S. Valiant,
Rutgers College Museum. *Assistant Curator.*

SCIENTIFIC LITERATURE.

An Illustrated Flora of the Northern United States, Canada and the British Possessions from Newfoundland to the parallel of the southern boundary of Virginia, and from the Atlantic Ocean westward to the 102d meridian. By Nathaniel Lord Britton, Ph. D., and Hon. Addison Brown. In three vols. I., Ophioglossaceæ to Aizoaceæ. New York, Charles Scribner's Sons. 1896.

This, the first volume of Dr. N. L. Britton's magnificent descriptive flora, establishes a new level for plant-taxonomic publications in America. It emphasizes the passing of the old régime and introduces, in most fitting style, the new ideas in book-making, in description, in arrangement and in nomenclature. Wisely published at a price that places it within the reach of all, and certainly to be completed within a few months, it must become at once the standard for the region which it covers. There is no work extant in the whole series of American botanical publications which deal with descriptions of the flowering plants that can for a moment be compared with it either for a skilful and delightful presentation of the subject-matter or for modern, scientific and accurate mastery of the thousand-fold mass of detail of which such a work must necessarily consist. Such a volume marks the existence of a world's botanical center at New York City not to be unfavorably compared with any other anywhere. The publication of such a work is a proper occasion not only for personal and institutional, but also for national congratulations.

Dr. N. L. Britton, assisted (especially on the financial side) by Hon. Addison Brown, has in this first volume described and figured 1,425 species of plants under 332 genera. This number includes 109 species of ferns and fern-allies, 25 species of conifers and 1,011 species of monocotyledons, the remainder being dicotyledonous plants in the families from Saururaceæ to Aizoaceæ inclusive. The descriptions of Pteridophyta are by Professor Lucien M. Underwood, of Juncaceæ by Mr. F. V. Coville, of Polygonaceæ and Euphorbiaceæ by Dr. John K. Small, of Graminaceae by Mr. G. V. Nash, of Lemnaceæ by Mr. E. P. Sheldon, while the text of Typhaceæ, Sparganiaceæ, Naiadaceæ, Scheuchzeriaceæ, Araceæ, Eriocaulaceæ, Pontederiaceæ, Smilaceæ and Orchidaceæ, 'was prepared by the late Rev. Thomas Morong and printed with very little change from his manuscript.' Notwithstanding the element of collaboration which has entered into the production of this illustrated flora, there has, by careful editorial supervision, been maintained a wonderfully regular, direct and transparent style of description, so that the form under which one species is described will *mutatis mutandis* suffice for any other species. The appropriate sequences are observed and for each species there are given in order the Latin name, the English name, the synonym and citation of original publication, the description of the plant as a whole, of the vegetative tract, of the inflorescence, flowers and fruit, closing with the habitat followed by the range and time of blooming. These compact and masterly descriptions are in pleasing contrast to the rambling unsystematic accounts which are too often put forward instead of descriptions by taxonomists who lack the highest gifts of insight or expression.

The figures always mortise in beside the descriptions with which they belong, and are all that could be asked. Sharp and clear, without being conventional or diagrammatic, they give an exact and adequate notion of the plant. By such aids, especially in a family like that of the grasses, the beginner can not but be stimulated and assisted where assistance is so much needed. And for the advanced student of species these figures, presenting so cleverly the plant at a glance, cannot fail to be of the greatest interest. It is an exceedingly difficult matter to plan illustrations of this sort that shall at once *illustrate* and be practicable in size and shape. In this instance all the difficulties seem to have been met intelligently, and the figure in each instance strikes one as exactly what was wanted.

The generic and family descriptions are constructed upon a systematic and logical plan similar to that of the species descriptions. Following the generic description in each case where more than one genus is represented in the general range of the work, is a key to the genera. This in many instances is a simple enough matter, but in some cases is constructed with great care under conditions of extreme difficulty. This is notably true for the genus *Carex*, where the key covers six pages and a half and is subdivided with much nicety. A few tests of this key to *Carex* induces one to believe that it is the most practicable one that has been fashioned for the genus. The same encomium may be afforded the keys to *Salix*, *Poa* and *Panicum*. That of *Scirpus* has bothered the reviewer when tested, principally on account of the frequency, in his region, of depauperate forms. In such a flora the keys are of great practical importance, and it is a source of much astonishment to the reviewer that a careful examination of them fails to show any important oversights, for such failures on the part of analytical keys have come, by experience, to be considered plainly essential and of the very inner and peculiar nature of such mechanisms.

The wise principles of generic limitation adopted in this flora need no especial comment, for they will commend themselves to all modern minded students. Nor is it necessary to allude to the scientific nomenclature. This is very conservative, adhering closely to the Rochester agreement and not even accepting such improvements as the decapitalization of the specific name. It is not too much to say that with the appearance of this work there ceases to be a nomenclature question in American plant taxonomy. There does not now exist any other nomenclature than the nomenclature of the Rochester agreement. Such a result can not but be a cause for extreme felicitation, for while everywhere admitted to be a non-essential and to a degree a triviality of botanical science, nomenclature has been one of the matters that pressed strongly for final and logical settlement. This flora of Dr. Britton, far the best yet published in America, so admirably combines right nomenclature with right description that there can be no further difficulty, nor, I suspect, will there even be regret over the final interment of the whole question.

Here and there adverse criticism could be directed against this Illustrated Flora if one were anxious to make out a case against it. It might be grumbled at as a 'picture book;' it might be accused of formalism, or one might point out that genera were divided where they should be combined or combined where they should be divided. But the whole plan of the enterprise so exactly corresponds to what the reviewer believes to be the best scientific standard that he is disarmed even from criticizing the ranges—which are sometimes, as always in local floras, too restricted—and point out that (for example) *Cystopteris bulbifera* grows in Minnesota, while the Flora brings it west no farther than Wisconsin. Just such a book as this has been needed for the past ten years—a period of great botanical expansion—and the authors may feel that they have earned the thanks of all those who desire botanical interest to continue to grow in the future as it has in the past.

The publishers of the Illustrated Flora have brought it out in a dignified form, printed upon a carefully selected paper and neatly bound. At the really nominal price which has been set, this work ought to be in the library of every high-school, academy and college in the country.

Indeed if a high-school library could afford to buy but one work in botany this Illustrated

Flora should be that work. It is among the young, among those beginning to take an interest in the plant creatures of their vicinage, that this book will yield the very best results. The figures add so much to the attractiveness of the descriptions that plant-analysis, even as it used to be conducted, could hardly be so dry and profitless as we have been accustomed to believe it. Such books make botanists everywhere respect the botanical advancement of America.

Conway MacMillan.

University of Minnesota.

L' Année psychologique. 2me Année, 1895. Publiée par MM. H. Beaunis et A. Binet. Alcan, Paris. 1896. Pp. 1010.

This Année is two-thirds larger than it was a year ago. In the value of its original contributions and the thoroughness and helpfulness of its analyses it has at least not fallen below its high standard. Its perusal leaves an impression of immense and fruitful industry on the part of M. Binet and his fellow-workers, who have made it an indispensable aid to all interested in the field it covers. Its contents include 16 original articles (pp. 1–500); analyses of about 240 books and articles of the year (pp. 501–912), for the most part brief and just, though also some important ones of considerable length and a bibliographical index of 1394 titles, which, by special arrangement, is the same as that published by *The Psychological Review*.

The original contributions alone will be briefly summarized.

A. Articles by various contributors.

(1) Th. Ribot: *Abnormal and Morbid Characters*. (Pp. 1–17.) M. Ribot is one of several French thinkers—Perez, Paulhan, Fouillée—who have recently attempted classifications of temperaments or characters. An analysis of their systems appears later in this Année, pp. 785–793. M. Ribot here calls particular attention to Seeland's hierarchical division into the strong (gay and calm), the neutral and the weak (melancholic, nervous and choleric), in which the former are more perfect, the latter approach more nearly to the abnormal. The truly abnormal he then divides into (1) successive contradictory characters; (2) coexisting contradictory characters; (3) unstable or polymorphous, 'infantile' characters. Each class is further subdivided and described.

(2) A. Forel: *Comparative Psychology*. (Pp. 18–44.) A vigorous protest against "transferring the content of our superior consciousness into the acts of insects and of animals in general, with the partial and very reserved exception of the highest mammals." This tendency "arises from two confusions, first that of instinct with plastic reasoning, and second that of a series of acts observed in the animal with the psychological subjectivity of the animal." Nervous centers can act in two different ways to arrive at the same end: (*a*) automatically; (*b*) in the adaptive or plastic manner, which we call intelligence or reason. For the latter is demanded the inheritance of a much larger number and complexity of neurons than for the former. Man is highly plastic, though he has also inherited automatisms more or less complete. The social instinct of insects, especially of ants, belongs to the category of complete inherited automatisms, which do not need to be learned; yet these insects show also some small degree of adaptive activity. In studying them "we should content ourselves with exact biological observations and note carefully the facts of plastic and of automatic activity, endeavoring to understand and appreciate them as thoroughly as possible." So-called comparative psychology should be made rather a comparative biology.

(3) Th. Flournoy: *Note on times of reading and of omission*. (Pp. 45–53.) It takes twenty-five per cent. longer to omit the names of a class of objects A and pronounce the non-A's than to pronounce the A's and omit the non-A's in lists of equal length, where both appear an equal number of times. This is due to an antecedent subexcitation of the images, visual and articulatory, belonging to the concept A, and the impossibility of such subexcitation for all non-A's. There can be no actual concept, aside from its verbal formula, of an indefinite class non-A.

(4) B. Bourdon: *Investigation into intellectual phenomena*. (Pp. 54–69.) A study of the comparative frequency of different kinds of association. Most frequently aroused are verbal or non-verbal images; the latter by the more con-