Several of our species, previously considered identical with European forms, he finds, upon comparison, are distinct therefrom. Over two hundred species are described as new.

IT is not often that catalogues of exotic insects are issued by Americans; therefore, Mr. Levi W. Mengel's catalogue[3] of the Erycinidæ is all the more noteworthy. It is printed in double columns; necessary references, with dates, and synonymy are given; the species are numbered in the genera; there is a full index; in short it is a very useful work to the student of butterflies the world over.

MR. LEWIS'S catalogue of the Histeridæ, a family of beetles, will be a great boon to all who wish to study the group.[4] It is a pamphlet of 81 pages, and lists 2,306 species. It appears to be complete, but, unfortunately, there are a few errors in localities and references. Mr. Lewis's collection of these insects is by far the most valuable in the world.

A LARGE treatise on mosquitoes has been published by Professor R. Blanchard.[5] It at once reminds one of Giles's English work, but is not as technical. Part I. treats of the morphology, anatomy, habits, metamorphoses and parasites of mosquitoes. Part II. is a systematic synopsis and list of all the known species. He decides that the proper name of the yellow fever mosquito is *Stegomyia calopus* Meigen, 1818. Part III. relates to the medical phase of the subject. Mosquitoes are considered as agents in malaria, yellow fever, filariasis, and in their probable relation to other diseases. There are chapters on methods of destroying larvæ and adults, of abolishing their breeding-places, of curing the diseases, and finally on rearing and preparing specimens. An appendix includes a list of recently-described species, and a long bibliography. Photographs of Ross, Finlay, Manson and Grassi adorn the pages. Many of the text figures are from Dr. Howard's works.

[3] 'A Catalogue of the Erycinidæ,' Reading, Pa., May, 1905, pp. 161.

[4] 'A Systematic Catalogue of Histeridæ,' by George Lewis; Taylor and Francis, London, 1905.

[5] 'Les moustiques, histoire naturelle et médicale,' Paris, 1905, pp. 673, figs. 316.

AN elaborate book on the Anopheles mosquitoes of India is that by Messrs. S. P. James and W. G. Liston.[6] Part I. treats of the habits, external anatomy, breeding-places and methods of studying this genus of mosquitoes. Part II. consists of technical descriptions of 23 species, arranged in 10 groups. Very sensibly he neglects to make new genera for these groups. A number of larvæ are described and figured, with details. There are many plates, 15 of which are colored and printed on a green background, quite a novel feature in entomology.

AN interesting arrangement of the genera of Vespidæ, or true wasps, is that by A. Ducke.[7] He believes that the nesting-habits is the clew to the natural classification, and tabulates the South American forms on this basis. Some of the older genera are divided, and he has added descriptions of a few new forms. The plate represents the nests of two species of *Charterginus,* showing the opening on the upper side.

DR. W. A. SCHULZ has issued a separate publication under the title 'Hymenopteren-Studien.'[8] It consists of three parts: First, a list of Hymenoptera collected in various parts of North Africa, with notes and descriptions of new forms; second, new genera and species of Trigonalidæ, describing, at great length, several new types from South America; and third, a list of some Vespidæ and Apidæ from the Amazon region, with descriptions of a few new species.

NATHAN BANKS.

BOTANICAL NOTES.

INDEX OF NORTH AMERICA FUNGI.

FOR many years, Professor Dr. Farlow, of Harvard University, has had under preparation an index of the species of North American fungi which should serve as a guide to the more important systematic literature. The

[6] 'A Monograph of the Anopheles Mosquitoes of India,' Calcutta, 1904, 132 pp., many plates.

[7] 'Nouvelles contributions a la connaissance, des Vespides sociaux de l'Amerique du Sud,' *Rev. d'Entom.*, 1905, pp. 5–24, 1 plate.

[8] Leipzig, W. Engelmann, 1905; 147 pp., 13 text figs.

results of these labors are now shown in the first fascicle (Vol. I., part 1) of the 'Bibliographical Index of North American Fungi' which appears as 'Publication No. 8' of the Carnegie Institution of Washington. The author does not include references to merely economic papers, such as those 'on fungicides and other technical and agricultural subjects,' although even these are cited when they contain notes of interest to the systematist. Likewise, papers relating to the physiology and cytology of the fungi are not included (with some exceptions) nor is the literature of the bacteria and saccharomycetes cited.

The arrangement of the genera is alphabetical, with an alphabetical arrangement of the species under each genus. Under each species, the literature is cited in chronological order. As to classification and nomenclature, the author has been conservative, having 'tried as far as possible to avoid changing names in common use for many years.' The 'Sylloge Fungorum' of Saccardo, and the 'Pflanzenfamilien' of Engler and Prantl have been followed as far as possible. While admitting that 'the present classification of fungi is not one which can be called more than temporary,' the author feels that our knowledge of the fungi of the world is not yet sufficient to make it possible 'to form a really natural and scientific system.'

While following the law of priority in regard to specific names, the author 'has no scruples in declining to accept many of the names of older writers which have of late been substituted for more modern names, since, from the vagueness of the descriptions and the crudeness of the illustrations, it is impossible, in the absence of original specimens, to be sure that the species were the same as those to which they have since been applied.'

In this connection, the significant and pertinent remark is made that "it is best not to make too violent attempts to interpret the older mycologists, but to be content with letting the dead bury their dead. The business of reviving corpses has been carried altogether too far in mycology.' Incidentally, he hopes that the next botanical congress will make a list of names of cryptogams which are to be regarded as fixed and exempt from further changes on the grounds of priority.

From remarks in the preface, we infer that the successive parts may be expected to appear without much delay, although it must necessarily take a good deal of time to revise the manuscript and see it through the press. When completed, it will be invaluable to the working botanist, and it is to be hoped that it can be pushed through the press with all possible speed.

THE FERN ALLIES OF NORTH AMERICA.

Professor Willard N. Clute has earned the thanks of naturalists of all kinds, from amateurs to professional botanists by bringing out his book, 'The Fern Allies' (Frederick A. Stokes Co., New York), in which, by means of illustrations and non-technical descriptions, he gives a popular account of the plants which are related to the ferns. They include seven families, namely; *Equisetaceae* (14 species), *Lycopodiaceae* (13 species), *Psilotaceae* (1 species), *Selaginellaceae* (12 species), *Salviniaceae* (3 species), *Marsiliaceae* (5 species) and *Isoetaceae* (21 species). There are thus sixty-nine species described in this book, and, since every species is figured at least once, it is easy to see how useful a book this will be for the general reader and the amateur, while at the same time it is likely to prove handy for the professional botanist also. Good keys to the species are given in each family. At the end of the volume is an alphabetical check-list of North American Fern Allies, including many varieties, and this is followed by a simple glossary. The book is well printed and neatly bound, and deserves a wide sale among all classes of plant lovers.

THE GRASSES OF IOWA.

Four years ago, the first volume of 'The Grasses of Iowa' appeared as Bulletin No. 1 of the Iowa Geological Survey. That volume was prepared under the joint authorship of Professors Pammel and Weems, of the Iowa Agricultural College, and F. Lamson-Scribner, of the United States Department of Agriculture, and was devoted to a general discussion of the structure, pathology and economic uses

of the grasses. A second volume has now appeared, bearing the date 1904 on the title page, but with a preface dated April 1, 1905. It is also the joint work of several authors, namely, Professor Pammel, C. R. Bell and F. Lamson-Scribner, the two latter of the United States Department of Agriculture. This volume is almost entirely systematic, including descriptions (and usually figures) of about two hundred species and varieties that are native to Iowa or are grown more or less commonly under cultivation. Short chapters on the physiography and geology of Iowa by Dr. H. F. Bain, and the ecological and geographical distribution of Iowa grasses, by Professor Pammel, and a bibliography, close the volume. The two volumes must prove of great value to the farmers of the state, and the second one especially must be helpful to students and others who are interested in the grasses.

It is unfortunate that the public printer should not have done better by these volumes. Paper, type, proof-reading and binding are poor, and are quite unworthy of the text. The authors as well as the people of the great state of Iowa have a right to something much better.

EXPERIMENTS WITH PLANTS.

YEAR by year, one can see that progress is made in the study of plants and their activities. Instead of learning the systematic classification of a plant, alone, as we used to a generation ago, or making out only its microscopic mechanism, as we did later, we are now shown how we may find out what plants and their different organs are doing at different times in their lives. In a suggestive book, 'Experiments with Plants,' Professor Dr. Osterhout, of the University of California, shows teachers how they may ask many questions of plants in such a way as to have them answered by the plants themselves. In ten chapters, the author takes up as many different subjects as follows: the awakening of the seed, getting established, the work of roots, the work of leaves, the work of stems, the work of flowers, the work of fruits, how plants are influenced by their surroundings, plants which cause decay, fermentation and disease, and making new kinds of plants. By a series of simple experiments, usually with simple and often home-made apparatus, the author enables the student to find out a great many things about plants. More than two hundred and fifty illustrations, make still plainer the very clear directions given for making the experiments, and in both, there is evidence of the author's ingenuity in planning devices for experimental purposes.

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INTERNATIONAL EXPLORATION OF THE NORTH SEA.[1]

IT would be difficult to estimate in terms sufficiently emphatic the vast, momentous importance which attaches to the great international investigations at present being carried out in regard to the fisheries of the North Sea and adjacent waters. At a conference of delegates held at Stockholm in 1890 (at the instance of the King of Sweden and Norway) a general plan for instituting inquiries was drawn up, which it was confidently asserted would undoubtedly lead to the attainment of a better and much more extended knowledge of the natural history of fishes and the influences which regulate their movements to and fro. At a second conference held at Christiania in 1901 a program of work was formulated, to which the several governments acceded, and in the summer of 1902 operations for the great international scheme—the exploration of the sea—were begun.

The nations engaged in the investigations conjointly with Great Britain, include Belgium, Denmark, Finland, Germany, Holland, Norway, Sweden and Russia. Each country, we are told, sends representatives to a central council, which is located in Copenhagen under the presidency of Dr. Walter Herwig, of Hanover, and the vice-presidency of Professor Otto Pettersson, of Stockholm. Every endeavor has been made to ensure that the investigations are carried out in as thorough a manner as possible. The ground of inquiry extends over a very extended sea area, and involves the elucidation and confirmation regarding various points connected with the

[1] The London *Times*.