

ducing and oxidizing agents, but goods dyed with it surpass those dyed with indigo in their stability to light and resistance to oxidation. It is, as yet, uncertain whether thio-indigo will have any technical value.

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RECENT MUSEUM REPORTS.

IN reading the *Report of the U. S. National Museum* for 1903-1904 one is struck with the liberality displayed in permitting the use of material and in publishing the results of the labors of others than its regular staff. The bibliography of papers based in whole, or in part, on its collections contains some eighty names. Much is done for the public at large in the way of furnishing information and identifying specimens. Perhaps these may be among the causes that have delayed the publication of the report for something over a year and a half, although the report proper was issued as a separate in 1905. Owing to this delay we have an account of the commencement of work on the new museum building when the basement story is now largely built. In view of the cramped quarters occupied at present and the need of extensive repairs to the roof of the old museum building it is to be hoped that work may progress rapidly. Among the more important accessions noted are ethnological and zoological collections from the Malay Archipelago and Philippines, obtained by Dr. W. L. Abbott and Dr. E. A. Mearns. The most extensive additions are in the departments of botany and entomology, the rapid growth of the latter department during the past few years making the collection of insects one of the most important in the world; the collection of musical instruments is also in the foremost rank. This in spite of the fact that the museum has always been sadly hampered in obtaining desirable specimens by the small appropriation—\$10,000—for their purchase. Even this paltry sum (paltry for a national institution) less than some museums pay for a single object, was struck out of the appropriation for 1905.

Attention is called to the smallness of the museum staff in comparison with the work

required of them, and it may also be said that this is all the greater owing to the comprehensive scope of the museum collections. There are those who believe that this is greater than any one museum can justly cover, and consider that a readjustment of the collections to form at least three separate museums would be advantageous and result in better support by congress.

As usual the report includes papers based on the collections or work of the museum. This year there are only three such articles, but one, 'Contributions to the History of American Geology,' by George P. Merrill, is a book in itself, giving a consecutive history of the rise and progress of geology in this country from 1785 to 1879. Furthermore, there are chapters on the 'Fossil Footprints of the Connecticut Valley,' 'The Eozoon Question,' 'The Laramie Question' and 'The Taconic Question.' There are portraits of many, if not most, of the well-known geologists of the United States, the whole forming a most important, much-needed, and, withal, readable work.

The Annual Report of the Director of the Field Columbian Museum for 1904-1905 marks the steady progress of this institution, not the least important event being the consideration of the plans for a new building. It is to be earnestly hoped that this may be commenced without further delay to furnish proper housing for the collections.

Important accessions are noted, especially by purchase, this being a most satisfactory way in which to acquire specimens since only those are obtained that are needed; many minerals, botanical and ethnological objects were secured in this way. No less than thirteen field parties were sent out during the year, the expedition to the Bahamas resulting in many additions to the herbarium, while the department of geology secured important material from the White River Beds, including skulls of *Brontops*, *Hyracodon*, *Aceratherium* and various creodonts. From the results of collecting in former years one fine skull of *Triceratops* has been prepared and placed on exhibition and another partially worked out.

Considerable attention has been paid to the local fauna and important additions made to the series of nestlings; other work has been the preparation of series of skins to illustrate the progress of moult from beginning to end.

In ethnology three halls, devoted to material from the northwest coast, have been opened and two others are in course of preparation.

The report is illustrated by a number of excellent plates.

F. A. L.

REPORT ON THE BOLYAI PRIZE.

HAVING just received from its author, G. Rados, of Budapest, the detailed report of the Commission on the Bolyai Prize to the Hungarian Academy of Sciences, I venture to translate a few excerpts.

On the occasion of the hundredth anniversary of the birth of John Bolyai was established in honor of this marvelous genius a prize of ten thousand crowns, to go every five years to the author of the best work in mathematics published during that lustrum, account being taken of the entire productivity of the winner. The first decision is as follows: The committee states first that the new view-points dominating modern mathematical investigation have brought out a very notable number of mathematical works whose high worth the committee gladly recognizes; but just this circumstance has made the committee's problem of exceeding difficulty.

The committee was convinced it should best fulfil the intention of the academy by deciding only to consider those works having the most important influence upon the *general* development of mathematics. In this spirit the committee could limit itself to the consideration of the works of two investigators whose merits are acknowledged on all hands, *David Hilbert* and *Henri Poincaré*.

The committee now has reached the unanimous decision to give the Bolyai prize to *Henri Poincaré*, taking into consideration, in the sense of the statutes, all his work, beginning in 1879 and now having completed a cycle of the entire domain of mathematics, opening everywhere to mathematical investigation new points of view. The committee has, however, at the same time decided, in

order to give Professor Hilbert a very special mark of their high appreciation, to charge their reporter—contrary to the usual custom—to discuss Professor Hilbert's works with the same detail as those of Professor Poincaré. For their universal significance is in full measure prized and the committee is convinced they are called to a rôle of ever greater importance.

Professor Rados now begins his report by saying *Henri Poincaré* is at the present moment unquestionably the most powerful investigator in the domain of mathematics and mathematical physics. His strongly marked individuality lets us recognize in him the intuitive genius drawing the inspiration for his wide-reaching researches from the exhaustless fountain of geometric and physical intuition, yet capable also of working this out in detail with marvelous logical keenness. With his brilliant inventive genius he is distinguished by the capacity for sharp and successful generalization of mathematical relations, which oft empowers him to push far out the boundaries of knowledge in the most widely different domains of pure and applied mathematics. This is shown even in his first memoirs on automorphic functions, with which he begins the series of those brilliant publications, which must be reckoned with the greatest mathematical achievements of all time. Rados plunges now into detail, finishing a necessarily fragmentary account of Poincaré's more than 300 publications, with a mention of his books, of which we will only name two, 'Science and Hypothesis' (1902) and 'The Value of Science' (1905).

Finally, he says, permit me to make mention of his last book, 'The Value of Science' (1905), in which he in a way has laid down the scientist's creed.

I wish from this intensely interesting book to quote a bit verbatim where he carries out in detail the contrast between the intuitional and the logical way of thinking. In regard to the logicians, then says Poincaré:

Rejecting the aid of the imagination, which, as we have seen, is not always infallible, they can advance without fear of deceiving themselves. Happy, therefore, are those who can do without