

ton on the U. S. M. S. *Philadelphia* February 22d and, with a prearranged system, communicated with his operator at Poldhu, regularly, from a point 250 miles west of the Lizard until reaching mid-ocean, over a thousand miles away, the operator reported "Fine here. Thanks for message!" Thence, to a point 1,551 miles away, messages continued to be intelligible, the last, 'All in order,' indicating that the cessation was due to lack of power in the sending apparatus, not to any defect of construction or adjustment. Single signals nevertheless continued to be recognizable, and were automatically recorded on the tape, until the two operators were separated by 2,099 statute miles. The records of all these messages and signals were properly certified to by the operators and by the officers of the ship, in order that the scepticism manifested at the first announcement of Mr. Marconi's work in Newfoundland might not be given a shadow of an excuse for expression in this instance. During this experiment the messages and signals transmitted to the *Philadelphia* passed over the *Umbria*, following in her wake all the way across the Atlantic, or within easy communicating distance, without being recognized or even detected.

Mr. Marconi is now confident that he has demonstrated that the distance over which his method will prove available is only limited by the power of the sending apparatus. He is preparing to establish at Poldhu ten times as much transmitting power as was available on this occasion. It may probably be admitted as demonstrated that we may anticipate the successful transmission of messages between a ship at sea and the shore, on either hand, from the moment of her setting out on her voyage until her passengers are landed at her destination on the other side of the ocean. Then the previously unavoidable period of anxiety attending the disappearance of ship and crew and passengers, for days together, will be at an end forever. New, or temporary, or moving stations may be established at sea or on land, and a campaign may be conducted, in time of war, with perfect communication between forces and commanders however relatively situated and, with suitable codes, with-

out enlightening the enemy, even if the fact of communication be detected by him at all.

R. H. THURSTON.

ANNUAL REPORT OF THE CONCILIUM BIBLIOGRAPHICUM.

THE general statement for 1901 has just been issued from Zürich and shows that Dr. Field's determination to carry this project through is at last beginning to meet with reward. The total number of cards published in 1896 was 3,345, and in 1901, 21,946. The total number of cards issued up to December 31, 1901, is 9,671,500. The total expenditure up to the same date is 119,015 francs, or in round numbers \$23,803. The receipts up to the same date have been 92,484 francs, thus leaving outstanding amounts of upwards of 21,000 francs or something over \$4,000, probably due to losses in the two first years of inauguration, which will soon be covered by the present increasing sales.

The financial standing of the present year shows a great advance over all that have preceded; the increase of subscribers has been so great that whole sets have gone out of print. The prices charged for subscriptions correspond, however, so closely to the actual cost that the increased sales have occasioned increased expenditures to nearly the same amount. It is the generosity of the Swiss Government to which in the main the Concilium owes the present improved state of its finances. While this shows the permanence of the work, it is very desirable that other countries should give similar aid and thus remove the last of the difficulties under which Dr. Field and his staff are struggling.

In consequence of the failure of an expected subsidy, the physiological part of the work has been temporarily suspended, but it is hoped that this impediment will soon be removed.

A recent report of the Swiss Society of Naturalists estimates the saving of time afforded by the great catalogue in the specific case of an investigation on the trout; the report says that in looking up the recent literature of this subject by means of the Concilium catalogues the saving of time was estimated at one half a day, but in regard to other

cases the saving is much greater. If any zoologist familiar with the best bibliographical resources considers how he should go to work to ascertain what has been published in the past five years in regard to some comparatively minute question, such as the fauna of Sumatra, a minute's reflection will suffice to show that it would be a task of many weeks to obtain a complete answer to such a question. Yet a subscriber to the faunistic part of the bibliography of the Concilium would require only a few seconds to find the 85 publications dealing with the subject. Some of the latter, indeed, bear titles which would appear to preclude any reference to Sumatra and thus be likely to be missed by the student altogether. These 85 references would have cost the subscriber sixteen cents. Surely no argument is necessary to prove the value of the work nor the extreme cheapness of the service.

The general statement contains a key by which subscribers can verify their subscriptions and rest assured that they have received all that has been last published on any subject. The zoological and anatomical subjects include 760, 8,371 and 2,007 cards respectively during 1901. There are 263 cards on microscopic technique and 155 on general biology.

American subscribers will find it convenient to remit to Mr. Edwin S. Field, 427 Broadway, New York City, and also copies of the general statement for 1901 can be secured.

SCIENTIFIC NOTES AND NEWS.

LORD KELVIN is expected to arrive in New York on April 19. A reception will be given in his honor on the evening of April 21 by Columbia University, the American Institute of Electrical Engineers, the New York Academy of Sciences and other scientific societies.

LORD LISTER and Professor Virchow are among those who have been elected honorary members of the Ghent Medical Society.

DR. N. L. BRITTON, director of the New York Botanical Garden, expects to visit Cuba at the end of the present month, with a view to securing collections for the Garden. Dr. D. T. MacDougal, assistant director, is at present

in Arizona and New Mexico, making collections, particularly of giant cacti.

MR. WILLIAM T. PALMER, of the U. S. National Museum, has been engaged in investigations of the natural history of Cuba.

DR. BRANDES has been appointed scientific director of the Zoological Gardens in Halle and has resigned his position as assistant in the zoological laboratory of the University.

PROFESSOR HERMANN KOBOLD, astronomer in the Observatory at Strassburg, has removed to the Observatory at Kiel.

PROFESSOR H. BECQUEREL lectured in French before the Royal Institution on March 7. His subject was 'Radio-active Bodies.'

DR. SIMON FLEXNER, professor of pathology in the University of Pennsylvania, gave a lecture on March 18 before the Yale Medical Alumni Association on the subject 'Bubonic Plague.'

AN address on 'Immunity' was delivered on March 7 before the students of Jefferson Medical College, Philadelphia, by Dr. W. H. Welch, of the Johns Hopkins University.

At the meeting of the Michigan Academy of Science to be held at the University of Michigan on March 27, 28 and 29, a public lecture will be given by Major Walter Reed, of the Army Medical Museum, at Washington, chairman of the U. S. Yellow Fever Commission. His subject will be 'Yellow Fever.'

C. N. BROWN, professor of civil engineering in the Ohio State University and dean of the College of Engineering, died on March 6 from nervous prostration. He was forty-four years of age and had been connected with the Ohio State University as instructor and head of the department of civil engineering for the past twenty years.

DR. EMIL SELENKA, honorary professor of zoology and comparative anatomy at the University of Munich, died on January 21.

THE House Committee on Coinage has directed a favorable report to be made on the bill providing for the adoption by the United States of the metric system. It provides that after January 1, 1904, all the departments of the government, in the transaction of all busi-