

able proof which he has brought forward that exogenous structure is not confined to the Spermatophytes. That it is so confined was simply a dogma of botany, and when Brongniart, in his classical memoir on *Sigillaria elegans*, published in 1839, so clearly proved that the genus *Sigillaria* sometimes has such a structure, influenced by this dogma alone, he inclined to place it in the Gymnosperms, and so great was his authority that until very recent times, and to some extent still to-day, his followers in France have labored to sustain that view. Long after Professor Williamson had overthrown it definitively the French School continued to defend it, and it was for this reason that he was induced to contribute the paper above referred to in the 'Annales des sciences naturelles.'\* He was determined that they should not have the excuse that his researches were in a language with which they were not familiar, and therefore associated with himself Dr. Marcus M. Hartog, of Victoria University, Manchester, and with the aid of a literary friend of Dr. Hartog in Paris, who put the paper into the very best of French, he set forth in the clearest manner the leading arguments in opposition to the old doctrine, and thrust it directly before the eminent defenders of that doctrine. The effect was instantaneous. The article was read and repeatedly answered, but without weakening the argument, and to-day, with perhaps a single exception, Professor Williamson's conclusions are accepted by the French paleobotanists.

LESTER F. WARD.

WASHINGTON, D. C.

JAMES C. PILLING.

JAMES CONSTANTINE PILLING, a well-known student of the languages and litera-

\* Les Sigillaires et les Lepidodendrées, Par. MM. W. C. Williamson et Marcus M. Hartog. Ann. Sci. Nat., Bot., 6e Sér., Vol. XIII., Paris, 1882, pp. 337-352.

ture of the Indians of North America, the bibliographer in the Bureau of American Ethnology, died of locomotor ataxia July 26, 1895. He was born in Washington, November 16, 1846, and passed through the public schools and Gonzaga College. At twenty he was a court and Congressional stenographer. In 1875 he became connected with the United States Geographic and Geologic Surveys of the Rocky Mountain region, under Major J. W. Powell. While in the field he displayed notable skill and zeal in the collection of the vocabularies of the native tribes, his experience in stenography proving of great service. By his aid the Director of the Survey was able to collect a large number of myths and traditions, and to record ceremonials with a fulness of detail which would have been impossible without the use of shorthand. In 1881 Mr. Pilling became chief clerk of the Geological Survey and the Ethnologic Bureau, retaining this arduous position until 1891, when failing health compelled discontinuance of a part of his work; thereupon he resigned from the Survey, discontinued administrative work, and devoted his remaining energies with remarkable persistence and success to bibliographic researches. These researches were continued until April last, when he finally became incapacitated.

Mr. Pilling was widely known as a bibliographer of the native languages of North America. Nine parts of his great bibliography have been published, viz.: the Algonquian, Athapaskan, Chinookan (including the Chinook jargon), Eskimo, Iroquoian, Muskogean, Salishan, Siouan and Wakashan. These volumes comprise about 1,700 pages, including over 6,000 titular entries. The work is regarded as a model by bibliographers generally; the successive parts have been favorably reviewed in scientific journals in many countries. Much additional material was prepared, including a

bibliography of the native languages of Mexico, which is nearly ready for publication.

Among his friends and associates Mr. Pilling was highly esteemed for integrity, industry, kindly disposition and strong sense of justice. By reason of these qualities he was a successful administrative officer, contributing much to the accomplishment and prestige of the scientific bureaus with which he was connected.

W J MCGEE.

---

*AGROSTOLOGY IN THE DEPARTMENT OF AGRICULTURE.*

THE Secretary of Agriculture recommended to the last Congress the establishment in his Department of a division to be known as the 'Division of Agrostology.' This recommendation was approved by Congress, and the law establishing the new division went into effect the first of July. This law authorizes investigations relating to the natural history, geographical distribution, and uses of the various grasses and forage plants and their adaptability to special soils and climates. It also authorizes the preparation of special reports, illustrated circulars of information, bulletins and monographic works on the grasses and forage plants of North America. From this it will be seen that both the practical and scientific sides of the grass and forage questions are to be considered, and in the organization of the division force the Secretary endeavored to cover and provide for all the possible lines of work. The farmer and the botanist are alike interested in it. The Department of Agriculture has always recognized the importance of the investigation of our forage resources, which, at a conservative estimate, have a money value of more than one billion of dollars; and, while the establishment of the new division may not introduce new lines of work, it can not fail to effect a better organization of this work and at the same time demon-

strate to the citizens of this and other countries that the United States Government fully appreciates and recognizes the primary importance of the grasses in the rural economy of the Nation. It gives to the work a recognition which its vast importance unquestionably merits.

No country in the world possesses so great and varied forage resources as the United States, and there is none where the maintenance and improvement of these resources is of greater importance. There are over 3,500 different kinds of grasses in the world, more than 700 of which grow within our territory; and besides these grasses there are many useful forage plants which are native to the country, or which have been introduced here from abroad, such as the clovers, alfalfa, the vetches and cow-peas. It will be the function of this new division to instruct and familiarize the people with the habits and uses of all these plants, and to introduce into cultivation promising native and foreign kinds, as well as to identify all grasses and forage plants submitted to the department for identification, and to answer all correspondence relative to these plants.

When the bill for establishing the Division of Agrostology was before the Senate, one Senator remarked: "It is only necessary to state that the grass crop of the country is the foundation of the life of all the animals of the country, to show how important the subject is. What farmers have been doing in past years has been simply to run out the grasses which they had. No attention has been paid to the cultivation and development of grasses, and I am glad to see that the Department of Agriculture is turning its attention to this subject, the most important subject within its purview." Another Senator said, in reference to improving the forage resources of many parts of the semi-arid regions of the West: "It seems to me that in the line