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 demonstrate 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 cowpeas. 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

of this investigation, no matter how much it costs, even an appropriation of fifty times the amount carried by the bill, could be profitable expended, if one grass can be obtained of utility to man that will flourish as those worthless plants flourish in that dry arid region."

The division has now in preparation a popular work on the grasses and fodder plants of the country, designed chiefly as a ready reference book for the use of farmers, and also a more elaborate and fully illustrated hand-book of the grasses of North America. The former work will be completed within a year, while the latter, owing to the time required in preparing and executing the illustrations, can not be completed at so early a date. Much time is occupied in the office in identifying grasses sent in by collectors and correspondents, and parties are now in the field, working under the direction of the Chief of the Division, collecting grass seeds, live roots of grasses and forage plants and herbarium specimens, both in the Rocky mountain region and in the Gulf region of the Southern States. Special attention will be given the present season to the sand binders of the Atlantic coast, and to the grasses and other fodder plants which enter into the composition of the hay of the tide-water marshes along the Middle and New England States. This subject, while apparently of local importance, is one of considerable general interest and of much value, as any one who has visited our coasts can not fail to recognize. The agents in the West have been directed to collect in considerable quantity the seeds of all the more promising grasses of the rich grass flora of the Rocky mountain region, with a view of testing the several species under cultivation, particular attention being given to those kinds which appear to thrive and make vigorous growth under the most trying conditions of the arid climates.

The study of living plants and observing their habits of growth, whether in their native station or under cultivation, is absolutely essential to their proper investigation, and to meet this requirement the Secretary has established a grass garden upon the Department grounds, in which already some 400 different varieties of grasses and forage plants are now growing. Owing to the limited area of this garden, the plots assigned to each species are necessarily small, but they are sufficient to test the possibility of the growth of the several kinds in this latitude, and to show very well the peculiar nature of each species. It has been the endeavor to have in this garden illustrative living samples of all the various hay and fodder plants and all grasses advertised by different seedsmen, and to bring together in it all the native grasses which it may be possible to secure. A larger garden, of several acres in extent, has been established in one of the Southern States, where the native grasses peculiar to these States are being tested, and where a considerable area is given to the cultivation of the more promising fodder plants believed to be best adapted to our southern latitudes, both for the purpose of giving these plants a test of a more practical character, such as they would be likely to receive in general culture, and to secure seeds for distribution in cases where such a distribution seems to be desirable.

F. Lamson Scribner.

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PHOTOTOPOGRAPHY.

Photographs obtained on vertically exposed plates, using a camera with constant focal length and a lens ground especially with a view towards reducing astigmatic and chromatic aberrations to a minimum, giving uniformity in definition and depth over a flat field, may be regarded as geometrically true perspectives.