

ard troy pound of the Mint of the United States, conformably to which the coinage thereof shall be regulated."

*Resolved*, by the Senate and House of Representatives of the United States of America in Congress assembled, That the Secretary of the Treasury be, and he hereby is, directed to cause a complete set of all the weights and measures adopted as standards, and now either made, or in progress of manufacture, for the use of the several custom-houses, and for other purposes, to be delivered to the Governor of each State in the Union, or such person as he may appoint, for the use of the States respectively, to the end that a uniform standard of weights and measures may be established throughout the United States.

Approved June 14, 1836.

An Act to authorize the use of the Metric System of Weights and Measures, July 28, 1866:

Be it enacted by the Senate and House of Representatives of the United States in Congress assembled, That from and after the passage of this Act it shall be lawful throughout the United States of America to employ the weights and measures of the Metric System, and no contract or dealing, or pleading in any court shall be deemed invalid or liable to objection because the weights or measures expressed or referred to therein are weights and measures of the Metric System.

Sec. 2: And be it further enacted, That the tables in the schedule hereto annexed shall be recognized in the construction of contracts and in all legal proceedings, as establishing, in terms of the weights and measures now in use in the United States, the equivalents of the weights and measures expressed therein in terms of the Metric System; and said tables may be lawfully used for computing, determining and expressing in customary weights and measures the weights of the Metric System," 1866.

An Act establishing a standard gauge for sheet and plate iron and steel:

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That for the purpose of securing uniformity the following is established as the only standard gauge for sheet and plate iron and steel in the United States of America, namely:

[See table previous page.]

And on and after July first, eighteen hundred and ninety-three, the same and no other shall be used in determining duties and taxes levied by the United States of America on sheet and plate iron and steel. But this act shall not be construed to increase duties upon any articles which may be imported.

Sec. 2. That the Secretary of the Treasury is authorized and required to prepare suitable standards in accordance herewith.

Sec. 3. That in the practical use and application of the standard gauge hereby established a variation of two and one-half per cent., either way may be allowed.

Approved, March 3, 1893.

#### *THE LACOE COLLECTION IN THE NATIONAL MUSEUM.*

THE Lacoe Collection of Fossil Plants, the removal of which from Pittston, Pennsylvania, to Washington, has now been accomplished, is by far the largest and most valuable of its kind in America, and compares favorably with the richest paleobotanical collections in European museums.

Mr. R. D. Lacoe, who has so generously presented this magnificent collection to the Museum, is a leading business man of Pittston, who for twenty-five years has found diversion and outdoor occupation in collecting fossils, and whose enthusiasm in connection with his scientific and practical knowledge of mining has enabled him to bring together a most unique and valuable series of the Paleozoic plants of America.

His interest in the subject is a natural outgrowth of his taste for science, and has doubtless been stimulated by his environment, for he lives in the very heart of the northern Anthracite coal region. To this fact is also in large measure due his interest in paleontological research in general.

The collection contains nearly 100,000 specimens and was shipped in 315 cases, and is constantly being increased through the collecting agencies established by Mr. Lacoe in all the principal coal regions in the United States. The series illustrating the morphology of species and their geographical and geological distribution alone comprises over 17,000 specimens. It represents more thoroughly than any other collection the fossil flora of the Anthracite region of Pennsylvania. There are also especially good

series from the coal fields of Illinois, Tennessee and Missouri, and from other States, besides important collections from Nova Scotia, New Brunswick and Brazil.

The collection has been arranged in the following categories: (1) types and specimens intended for study, (2) exposed slabs suitable for exhibition, and (3) unstudied and duplicate material. Some idea of its bulk may be formed from the fact that it is estimated that 1,000 museum drawers, in addition to six large exhibition wall cases, will be required to accommodate it.

In addition to gathering specimens in the field and labeling them with his own hands, Mr. Lacoe long since engaged the services of collectors in a number of States and the Canadian Provinces, and with their assistance and the purchase of private collections has, by the expenditure of perhaps \$50,000 of his private fortune, succeeded in accumulating this enormous mass of material.

Mr. David White, Assistant Paleontologist of the United States Geological Survey, has devoted many months to the labeling and packing of the collection at Pittston, and since its arrival at the Museum has been almost constantly employed in the work of arranging and cataloguing. Progress has been slow because of the pains taken to authenticate each specimen.

Mr. Lacoe began the formation of the great collection which bears his name, early in the seventies, and upon the organization of the Second Geological Survey of Pennsylvania, in 1878, it had already assumed such proportions that Prof. Leo Lesquereux, the foremost of American paleobotanists, was detailed by the Director of the Survey to study the collection on behalf of the State. The results of his studies, together with descriptions of the larger number of species in the collection, were incorporated by him in his famous work on the 'Coal Flora of the Carboniferous Formation in Pennsylvania and throughout the United States,' pub-

lished as Report P of the Second Geological Survey of Pennsylvania. It is safe to say that nearly one-third of the specimens illustrated in the atlas accompanying the first and second volumes, and the greater part—in fact, nearly all—of those in the third, are in the Lacoe collection.

Owing to the hurried publication of the third and final volume, in compliance with the time-limit for the work specified in the Legislative act, there were many new forms in the collection upon which Lesquereux had not completed his studies. To this number many more have since been added, and a number of drawings have been prepared. Most of these unpublished forms are accompanied by manuscripts in various stages of completion, and in some instances by notes and sketches. The manuscripts have been placed by Mr. Lacoe in the hands of Mr. White, who will assist in revising, verifying and completing Lesquereux's posthumous work for publication. The manuscripts contain descriptions of approximately 125 species or varieties, of which perhaps 80 are new.

The Collection, as far as described, embraces about 750 published *types*, and includes perhaps nearly half of the originals of the American Carboniferous flora. The few others which are still in existence are for the most part in the custody of the university and State geological museums.

A number of these new forms were described by Lesquereux in the Proceedings of the American Philosophical Society, the Catalogue of the Pottsville Scientific Association, and the Reports of the Geological Surveys of Arkansas, Illinois and Indiana, by Prof. D. P. Penhallow in the Proceedings of the National Museum, and by Sir William Dawson in the Canadian Record of Science and in his work on the Fossil Plants of the Devonian and Upper Silurian formations of Canada.

When he gave the plants from the Paleo-

zoic formations, Mr. Lacoe also sent to the Museum examples of the Cretaceous and Tertiary flora of Colorado, studied and partially published by Lesquereux, and an interesting lot of specimens of Triassic and Paleozoic fishes and crustacea, studied by Cope, Hall, Whitfield and others; also a collection of 800 Dakota Group plants, about 125 of which are described by Lesquereux in Monograph XVII. of the United States Geological Survey, on the "Flora of the Dakota Group."

A portion of the Collection will be placed on exhibition, as soon as it can be labeled and installed.

Mr. Lacoe formally offered the collection to the Museum in December, 1891, in a letter to Prof. Lester F. Ward, an old friend and correspondent, expressing his belief that this disposition of it would best insure the fulfillment of his purpose in its formation, which was primarily to bring together in one place as complete a collection as possible of the older fossil flora, for use in scientific research, the conditions imposed being merely that the Collection should be kept entire, with such additions as may hereafter be made to it by exchange of duplicates or subsequent contributions by the donor; that it be known as 'The Lacoe Collection,' and that it be accessible to scientists and students without distinction, provision being made for the proper preservation of the specimens from loss or injury.

The acquisition of this wealth of material makes the National Museum an important reference center for all future comprehensive work in this field. The Lacoe Collection is a noble monument to the public spirit and generous enthusiasm of its founder.

G. BROWN GOODE.

#### NOTE ON THE DEVONIAN PALÆOSPONDYLUS.

IN my review of Dr. Dean's 'Fishes, living and fossil,' I have ventured to suggest an ordinal name for the remarkable *Palæo-*

*spondylus Gunni*, discovered by Dr. Traquair in the Caithness Flagstones. I now give reasons for so doing.

The "*Palæospondylus Gunni*" is a very small organism, usually under one inch in length, though exceptionally large specimens occasionally measure one inch and a-half \* \* \*. It has a head and vertebral column, but no trace of jaws or limbs; and, strange to say, all the specimens are seen only from the ventral aspect, as is shown by the relation of the neural arches to the vertebral centra.

"The head is in most cases much eroded \* \* \*. It is divided by a notch \* \* \* into two parts \* \* \*. The *anterior part* shows a groove the edges of which are elevated, while the surface on each side shows two depressions like fenestræ, though perhaps they are not completely perforated, and also a groove partially dividing off, posteriorly and externally, a small lobe. In front there is a ring-like opening \* \* \* surrounded by small pointed cirri, four ventrally, at least five dorsally, and two long lateral ones which seem to arise inside the margin of the ring instead of from its rim like the others. The *posterior part* of the cranium is flattened, but the median groove is still observable. Connected with the posterior or occipital aspect of the skull are two small narrow plates which lie closely alongside the first half dozen vertebræ."

"The bodies of the vertebræ are hollow or ring-like, and those immediately in front are separated from each other by perceptible intervals; their surfaces are marked with a few little longitudinal grooves, of which one is median. They are provided with neural arches, which are at first short and quadrate, but towards the caudal extremity lengthen out into slender neural spines, which form the dorsal expansion of a caudal fin, while shorter hæmal ones are also developed on the ventral aspect."