price of ore for the American steel manufacturers; and this fact alone, regardless of any superiority in methods, would give them the advantage in foreign markets. In Europe at the present time the situation as to the iron ore supply, as to the demand for same, and as to prices, is not greatly dissimilar to what it might have been in the United States had no Mesabi range been discovered to ease the demand for old range ores and to lower prices. A great basal factor, then, in the superiority of the United States in the iron and steel trade is the Mesabi iron range. The United States Steel Corporation controls from 70 to 80 per cent. of this raw material, and hence its future influence on the iron and steel trade of the world may be conjectured.

Professor Van Hise followed with a brief general discussion of the world's past, present, and future supplies of ores. He called attention to the tremendous revolution in mining ores of all kinds which has occurred in the past century, and ventured the opinion that in the past fifty years more ore has been mined in the world than in all its previous history.

The above papers were discussed by Professor J. Morgan Clements. Professor Clements also summarized the relation of the work which the U. S. Geol. Survey has been doing in the Lake Superior region, as well as in other mining districts of the United States, to an intelligent exploration for ore deposits and the scientific development of the same when they are found.

A resolution of sympathy in memory of the late Professor Nelson O. Whitney, of the Engineering Faculty of the University of Wisconsin, presented by Professors J. B. Johnson, F. E. Turneaure, and Louis Kahlenberg, was adopted by the Club. L. S. Smith.

THE SCIENTIFIC ASSOCIATION OF THE UNIVERSITY OF MISSOURI.

The Association has elected the following officers for the ensuing year: President, Professor W. G. Brown; Vice President, Professor C. F. Marbut; Secretary, Dr. Charles Thom; Treasurer, Professor C. A. Ellwood; Chairman of Executive Committee, Dr. C. M. Jackson. At a meeting October 14, Professor H. B. Shaw displayed a series of lantern slides illustrating the important features of the largest and most successful electrical plants in the United States. At its regular meeting on the last Monday night of each month a paper is presented embodying some original work done by the author. At its supplementary meeting held usually on the second Monday night, a popular presentation of some scientific subject offers each department an opportunity to present matters of general interest from any source.

Chas. Thom,
Secretary.

University of Missouri.

THE ACADEMY OF SCIENCE OF ST. LOUIS.

At the meeting of the Academy of Science of St. Louis on the evening of November 18, twenty-four persons present, the following subjects were presented:

Mr. F. C. Baker, some interesting molluscan monstrosities.

Dr. Stuart Weller, Kinderhook faunal studies. III. The faunas of beds No. 3 to No. 7 at Burlington, Ia.

Professor William Trelease read an untechnical address on the progress made in botany during the nineteenth century.

One person was elected to membership in the academy.

William Trelease,
Recording Secretary.

DISCUSSION AND CORRESPONDENCE.

THE PYTHON IN PENNSYLVANIA.

To the Editor of Science: On August 9, a python, probably *Python natalensis*, was found in the grass on Presque Isle, Pa., by three young men from Erie who, as they supposed, killed it and took it to the city. However, it revived and was exhibited in the window of the Tribune bicycle store. On August 29 I measured and weighed it. The length was about seven feet four inches, greatest girth eleven and one-half inches; weight, seventeen pounds. That evening it pushed away the wire netting from one corner of its cage and escaped. It probably took up its residence under a building in the rear of the store, but had not been seen when last I heard, October 14. Reports of the liberation of large snakes in the vicinity of

Presque Isle I investigated, but they proved to be unfounded. Who can tell how this African snake found its way to the shore of Lake Erie and how long it had found subsistence there?

E. L. MOSELEY.

SANDUSKY, OHIO,
Oct. 27, 1901.

SHORTER ARTICLES.

THE UNEXPLAINED SOUTHERLY DEVIATION OF FALLING BODIES.

THE formula published by Mr. Roever, of Washington University (SCIENCE, July 12, 1901, p. 70), giving the southerly deviation of falling bodies due to the earth's rotation, is of special interest, because it marks a fresh attack upon a problem which in my 'History of Physics,' p. 75, I call an unsolved problem. The difficulty lies in a wide discrepancy between the theoretical and the observed results. The latter are over 1,000 times greater than the former.

1. *Experiments.*—When Robert Hooke undertook to verify experimentally Newton's prediction of an easterly deviation of falling bodies, due to the earth's rotation, he reported also a small southerly displacement.*

When in 1791 G. B. Guglielmini again undertook to verify Newton's prediction by a series of experiments from a tower at Bologna, a southerly deviation was again observed. He found H ('height' or distance fallen through) = 241 Paris feet (78.3 m.), E. D. ('easterly deviation') = 8.375 lines (18.894 mm.), S. D. ('southerly deviation') = 5.272 lines (11.894 mm.).†

In 1802 J. F. Benzenberg experimented from the St. Michael's tower in Hamburg. H = 235 feet (76.3 m.); E. D. = 3.99 lines (9.00 mm.); S. D. = 1.5 lines (3.4 mm.).‡

In 1804 Benzenberg experimented in a shaft of a coal mine at Schlebusch. H. = 260 ft. (84.4 m.). An E. D. was noticeable, but on selecting from the total number those experiments which, in his judgment, were made under the most favorable conditions, there seemed to be no indication of a S. D.*

In 1831 F. Reich experimented in a mine-shaft at Freiberg. H. = 158.5407 m., E. D. = 28.396 mm., S. D. = 4.374 mm. These results are deduced from six series of experiments. Altogether 106 balls were dropped. Reich's are the most carefully conducted experiments on the subject which have been made. Yet they differ much among themselves, though not as much as those of Benzenberg.†

In 1848 W. W. Rundell published experiments made in the shaft of a Cornish mine.‡ Balls were dropped through a distance of one-fourth of a mile and a S. D. of 10 to 20 inches (25 to 51 cm.) was noticed. From the account of the experiments it is difficult to convince oneself that sufficient precautions were taken against disturbances from air-currents.

All observers experimented with metallic balls. Are these observed southerly displacements due wholly to experimental error? Though we may incline to that opinion, we cannot deny the force of Benzenberg's remark: 'Sonderbar bleibt doch diese Tendenz der Fehler nach Süden.'

2. *Theory.*—Mr. Roever is not the first to derive a formula for S. D., due to the attraction of the rotating earth. This was done in 1803 by Gauss § and by Laplace.‖

Neglecting the resistance of the air, Gauss obtained

$$\text{E.D.} = y = \tfrac{1}{3} \cos\phi \, g n t^3,$$
$$\text{S.D.} = x = \tfrac{1}{6} \cos\phi \sin\phi \, g n^2 t^4,$$

where u is the angular velocity of the earth, ϕ the latitude. Applying this to Benzenberg's

* See Ball, 'An Essay on Newton's Principia,' pp. 146, 149, 150.

† See Gilbert's Annalen, Vol. XI., p. 172; Vol. XII., 1803, p. 372; Vol. XIV., p. 222. Rosenberger, in his 'Geschichte der Physik,' Vol. III., p. 96, refers to Guglielmini's book, 'De diurno terrae motu, experimentis physico-mathematicis confirmato,' Bologna, 1792, but as early as 1803 the book is spoken of as being very rare.

‡ Gilbert's Ann., Vol. XIV., p. 222. Rosenberger refers to Benzenberg's book, 'Versuche über die Gesetze des Falles,' Hamburg, 1804.

* Gilbert's Ann., Vol. XVIII., p. 381.

† See Poggendorff's Ann., Vol. XXIX., 1833, p. 494. Rosenberger refers to Reich's book, 'Fallversuche über die Umdrehung der Erde,' Freiberg, 1832.

‡ Robertson's *Mechanic's Magazine*, London, Vol. XLVIII., p. 485.

§ Gauss, 'Werke,' Vol. V., 1877, p. 495.

‖ *Bull. d. sciences par la Soc. Philomath.*, Plairial an 11 (1803).