

ties of substances lighter than water; it being only necessary to hold them down by a pin or wire. By the usual method, the operation is complicated. The following are a few duplicate results, given to show the uniformity which is attainable by this mode.

Fine silver,	10.55	repeated,	10.55
Gold double eagle,	17.14	do.	17.37
Lead,	11.315	do.	11.307
Pyritous iron ore,	3.912	do.	3.919
Agate,	2.607	do.	2.604
Lithographic stone,	2.669	do.	2.670
Coarse quartz,	2.589	do.	2.599
Birch wood,	0.931	do.	0.934
White pine wood,	0.371	do.	0.379

These figures correspond sufficiently with the results given in books; which, however, very commonly disagree, even at the first decimal; chiefly because of the want of homogeneity, or uniform compactness in substances operated upon.

It will be objected to this process, that it is going back to the first crude idea of Archimedes, and rejecting subsequent improvements. It may claim, however, to be a refinement upon that philosopher's bath-tub; and if the operation is easy, and the results are good, not much further need be said. For specimens of very small size, and high density, the balance would be preferable; but the genuineness of a gold coin, as small as the half-eagle, is easily determined by the cup. And to demonstrate, to a class of learners, the *principle* of specific gravity, this is evidently to be preferred to the weighing in water, which is an after-thought of some complexity.

Stated Meeting, June 20.

Present, eleven members.

Prof. FRAZER, Vice-President, in the Chair.

Letters were read:—

From the Etat Major of the Corps of Mining Engineers of Russia, dated St. Petersburg, Feb. 25, 1855;—from the Imperial Society of Naturalists of Moscow, dated 1–13 August, 1855;—from the Imperial Academy of Sciences at Vienna,

dated Nov. 1, and Dec. 30, 1855;—from the Imperial Geological Institute, dated Vienna, Sept. 23, 1855; severally announcing donations for the library:—

From the Director of the Physical Central Observatory of Russia, dated St. Petersburg, 18–30 March, 1855; acknowledging the receipt of Vol. X. Part 3 of the Transactions of this Society;—from the Royal Academy of Sciences at Amsterdam, dated Jan. 15, 1856;—from the Horticultural Society of Berlin, dated Feb. 8, 1856;—and from the Royal Society of London, dated Somerset House, March 8, 1856,—returning thanks for Nos. 51, 52, of the Proceedings:—

From the Royal Bavarian Academy of Sciences, dated Munich, Jan. 12, 1856, accompanying a donation for the library, and acknowledging the receipt of Nos. 45, 46, 51 and 52 of the Proceedings; and from the same, dated Jan. 20, 1856, requesting to be furnished with duplicate copies of all the publications of this Society:—

From the Royal Society of Sciences at Göttingen, dated March 23, 1856, transmitting one impression in silver and one in bronze, of a medal struck by order of His Majesty the King of Hanover, in memory of Dr. Charles Frederic Gauss, the eminent mathematician and astronomer: and—

From the Academy of Science of St. Louis, Missouri, dated May 30, 1856, requesting a correspondence with this Society, and offering to give extinct mammalian fossils in exchange for the Transactions of the Society, or for other books or articles.

The following donations were announced:—

FOR THE LIBRARY.

Abhandlungen der K. K. Geologischen Reichsanstalt. Band II. Wien, 1855. Fol.

Jahrbuch der K. K. Geologischen Reichsanstalt. VI. Jahrgang. No. 1. Jan. Feb. Mar. No 2. Apr. May, Jun. 1855. Wien, 8vo.—*From the Imp. Geological Institute, Vienna.*

Coup d'œil géologique sur les Mines de la Monarchie Autrichienne. Rédigé, par ordre de l'Institut Impérial et Royal de Géologie, par le Chevalier Fr. de Hauer et Fr. Fætterle;—avec une introduction par Guillaume Haidinger. Vienne, 1855. 8vo.—*From the Authors.*

- Sitzungsberichte der Kaiserlichen Akad. der Wissenschaften:—Math. Nat. Classe, XVI. Band, 2 Heft; XVII. Band, 1, 2, 3 Heft:—Phil. Hist. Classe, XVI. Band, 2 Heft; XVII. Band, 1, 2 Heft. Wien, 1855. 8vo.—*From the Imp. Acad. Sciences, Vienna.*
- Annales de l'Observatoire Physique Central de Russie, &c. Par A. T. Kupffer, Directeur de l'Observatoire. Année 1852. St. Petersburg, 1855. 4to.—*From the Administration of Mines of Russia.*
- Bulletin de la Société Impériale des Naturalistes de Moscou, publié sous la redaction du Docteur Renard. Tome XXVII. Année 1854. Nos. 2, 3, 4. Tome XXVIII. Année 1855. No. 1. Moscow. 8vo.—*From the Society.*
- Philosophical Transactions of the Royal Society of London, for the year 1855. Vol. 145. Part 2. London. 4to.
- Proceedings of the Royal Society of London. Vol. VII. Nos. 3, 4,—16, 17. Vol. VIII. No. 18. London. 8vo.—*From the Society.*
- Quarterly Journal of the Chemical Society. Vol. IX. No. 33. April 1856. London. 8vo.—*From the Society.*
- Monthly Notices of the Royal Astronomical Society. Vol. XVI. No. 6. April 11, 1856. London. 8vo.—*From the Society.*
- Journal of the Royal Dublin Society. Vol. I. No. 1. April, 1856. Dublin. 8vo.—*From the Society.*
- Proceedings of the American Association for the Advancement of Science. First Meeting, held at Philadelphia, 1848;—Second, at Cambridge, 1849;—Third, at Charleston, 1850;—Fifth, at Cincinnati, 1851, (not previously received).—*From the Association.*
- Proceedings of the Academy of Natural Sciences of Philadelphia. Vol. VIII. No. 2. Philadelphia, 1856. 8vo.—*From the Academy.*
- Proceedings of the Elliott Society of Natural History of Charleston, S. C. Nov. 1, 1853 to July 24, 1855. Charleston. 8vo.—*From the Society.*
- Journal of the Franklin Institute. Vol. XXXI. No. 6. June, 1856. Philadelphia. 8vo.—*From the Institute.*
- Fourth Annual Report of the Trustees of the Free Public Library of New Bedford. Presented to the City Council, March 31, 1856. New Bedford. 8vo.—*From the Trustees.*
- Thirty-fifth Annual Report of the Mercantile Library Association of the City of New York, May, 1856:—With the Report of the

- Trustees of the Clinton Hall Association. New York. 8vo.—
From the Trustees.
- The African Repository. Vol. XXXII. No. 6. June, 1856. Wash-
ington. 8vo.—*From the Am. Colonization Society.*
- Message from the President of the United States to the two Houses of
Congress, at the commencement of the First Session of the Thirty-
fourth Congress:—With accompanying Documents. *Part 3.*
Washington, 1855. 8vo.—*From the Hon. J. R. Tyson.*
- Professor William Chauvenet's Great Circle Protractor,—with De-
scription and Application. Annapolis. 1854.—*From the Au-
thor.*
- Eulogy on the Life and Character of Theodric Romeyn Beck, M.D.
L.L.D. Delivered before the Medical Society of the State of New
York, by Frank Hastings Hamilton, M.D. Albany, 1856. 8vo.—
From Mr. John H. Hickox.
- A Discourse on the Necessity of Revelation to the Knowledge of the
Existence of God, Spirit and Immortality. By C. F. H. Crockett,
M.D. Richmond, 1856. 8vo.—*Donor unknown.*
- The Astronomical Journal. Nos. 93, 94. (Vol. IV. Nos. 21, 22).
Cambridge. 4to.—*From Dr. B. A. Gould, jr. Editor.*
- On the New Red Sandstone Formation of Pennsylvania.—Descrip-
tion of a new Sub-Genus of Naiades.—Description of a New Spe-
cies of Triquetra.—Description of New Fresh Water Shells from
California.—Description of Twenty-five New Species of Exotic
Uniones. By Isaac Lea, L.L.D. &c. &c. (Proc. Acad. Nat. Sci.)
Philadelphia, 1856. 8vo.—*From the Author.*
- The Medical News and Library. Vol. XIV. No. 162. June, 1856.
Philadelphia. 8vo.—*From Blanchard & Lea.*

FOR THE CABINET.

Two Medals, one of silver and one of bronze, in memory of Dr.
Charles Frederick Gauss, struck by order of H. M. the King of
Hanover, and presented through the *Royal Society of Sciences*
at Göttingen.

Dr. Hallowell presented a paper entitled "Notice of some
New and Rare Species of Scincidæ, in the Collection of the
Academy of Natural Sciences of Philadelphia," which was
referred to a Committee, consisting of Dr. Le Conte, Dr.
Bridges and Mr. Lea.

A communication by Dr. Leidy was offered, entitled "Notice of Remains of the Walrus discovered in the United States," which was referred to Dr. Hallowell, Prof. Frazer and Major Le Conte.

A paper was presented and read from Messrs. Eckfeldt and Dubois, explanatory of their communication read at the last meeting, on an apparatus for determining specific gravities.

Messrs. Eckfeldt and Dubois desire to offer a word of explanation, in regard to the apparatus for taking specific gravities, which was exhibited at the last meeting of the Society. A few days after that meeting, Dr. Bache had the kindness to call upon us with a copy of the May number of the London Pharmaceutical Journal, which he had then just received. In it was detailed a contrivance, for the same purpose, and on the same principles, which had been exhibited at the North British Branch of the Pharmaceutical Society, held at Edinburgh on the 11th April. And it was further mentioned, that the same apparatus had been shown at a meeting of the Royal Scottish Society of Arts; and a committee, the chairman of which was Dr. George Wilson, Professor of Technology, was appointed to report upon its merits; which report was made on the 23d July, 1855, and the Society's medal was awarded to Mr. P. Stevenson, the inventor.

We have first to say, that, being entirely ignorant of these proceedings, and of this apparatus, we, of course, derived no aid or suggestion from this source. It has so happened, as it has happened before, that the same idea was acted upon by two minds, independently, and distant from each other, at nearly the same time. The experiments of Mr. Eckfeldt began in December last.

In regard to the principle, of operating by displacement, there will be no dispute as to originality. It was the neat, convenient and accurate *application* of this principle that remained a desideratum.

The apparatus of Mr. Stevenson consists of a tall cylindrical vessel, from which the displaced water runs off by a short spout near the top, having a stopcock or faucet at the end. From this the water runs into a graduated glass vessel of $3\frac{1}{2}$ inches diameter. The object of this graduation is to dispense with a balance, and save the trouble of weighing.

But any one who will take a vessel of only half that diameter, will find that as much as fifteen grains of water may be added, or withdrawn, and the eye will scarcely be able to see any difference. In the apparatus of Mr. Eckfeldt, it was found desirable, for high gravities,

to taper down the displaced water to a fifth or tenth of one grain. It is true, that Mr. Stevenson's apparatus is mainly designed for substances lighter than water; but it is also intended for those that are heavier; and, in either case, so large a scope for the divisor would produce very irregular and unreliable results, as it appears to us.

The graduated tube was thought of, and experimented upon; and, after all, it was found that a balance would be indispensable, to obtain satisfactory results. A very fine instrument is not generally requisite, and the weighing can be done nearly as soon as an observation can be made of the marked degrees.

As to the stopcock at the end of the spout, Mr. Stevenson must soon find that this is a superfluity; and, more than that, a source of error and vexation. We found this the case in a supposed improvement, of French invention, in drawing off the dose for humid assays of silver. A drop of water, or a bubble of air, will lie concealed, and spoil the result, or render it uncertain.

As the specific gravities of solids lighter than water, have hitherto been obtained by a complex operation, and as the apparatus of Mr. Eckfeldt is specially adapted to obtain such gravities by a direct and simple mode, we propose, at a future day, to offer to the Society a table of results, as found by this method; particularly of the different kinds of wood, charcoal, &c.

The Secretary was directed to inform the Royal Bavarian Society of Sciences at Munich, that this Society is unable to comply with their request to be supplied with duplicate copies of the publications of the Am. Philosophical Society.

The Academy of Sciences at St. Louis, Missouri, and the Elliott Society of Natural History, of Charleston, S. C. were ordered to be placed on the list of Corresponding Societies.

A letter signed J. R. Lambdin, dated Philadelphia, June 12, 1856, and addressed to the American Philosophical Society, was read, in which Mr. Lambdin informs the Society that it is his intention shortly to visit Europe, and that he desires, while there, to execute original portraits of some of the most eminent scientific men of the countries which he may visit:—

Whereupon, a preamble and resolution upon the subject were offered by Mr. Henry D. Gilpin, which were read and postponed for consideration at the next meeting of the Society.