

STATED SESSION.

HELD IN WASHINGTON, APRIL 17TH TO 20TH, 1877.

The session was attended by the following members: The President, Mr. Henry, and Messrs. Abbot, Agassiz, Baird, Barker, Barnard (F. A. P.), Barnard (J. G.), Cope, Ferrel, Gibbs, Gill, Halde- man, Hall (Asaph), Hayden, Hilgard (J. E.), Hill, Lane, Langley, LeConte (J. L.), Marsh (O. C.), Mayer, Meigs, Morgan, Newcomb, Pickering, Pumpelly, Rogers (F.), Schott, Warren, Woodward, and by the following gentlemen upon invitation of the President, Profs. J. J. Sylvester, Ira Remsen, and H. A. Rowland, of Johns Hop- kins University, and Messrs. Chas. S. Peirce, G. K. Gilbert, and J. W. Powell.

TITLES OF PAPERS READ.

434. **Mayer, A. M.** On a new measuring instrument, the vernier Micro- scope.
435. **Pickering, E. C., and Rogers, W. A.** On systematic errors in Star Declinations.
436. **Agassiz, Alex.** On the young stages of some osseous fishes.
437. **LeConte, Joseph.** On critical periods in the history of the Earth, and their relations to evolution, and on the Quaternary as such a period.
438. **Ferrel, Wm.** On the progressive motion of storms.
439. **Loomis, E.** Contributions to Meteorology.
440. **Barker, G. F.** Improved method of obtaining metallic Spectra.
441. **Rood, O. N.** On the effect produced by mixing white with colored Light.
442. **Rood, O. N.** On Newton's use of the term *indigo*, with reference to a color of the spectrum.
443. **Barnard, J. G.** Internal structure of the earth as affecting the phe- nomena of precession and nutation: supplementary to article under this head read before the Academy, and published in vol. xix Smithsonian Contributions.
444. **Langley, S. P.** On a method of Solar Spectrum Analysis.
445. **Gibbs, Wolcott.** On complex inorganic Acids.
446. **Pickering, E. C.** Micrometer-Level and topographical Camera.
447. **Mayer, A. M.** On the determination of the co-efficient of expan- sion of solids.

448. **Agassiz, Alex.** The results of deep-sea dredgings.
449. **Young, C. A.** Description of a detached gravity escapement.
450. **Mayer, A. M.** On the laws ruling the vibrations of tuning-forks.
451. **Gilbert, G. K.** On the structure of the "Henry" Mountains.
452. **Mayer, A. M.** On some remarkable facts in the distribution of magnetism in very long (60 inches) magnets.
453. **Hayden, F. V.** Remarks on some Artesian Wells along the line of the Union Pacific R. R. in Wyoming Territory.
454. **LeConte, Joseph.** On the structure of the Crystalline Lens and its relation to Periscopism.
455. **Newcomb, Simon.** Remarks on the apparent secular acceleration of the mean motion of the Moon, as derived from the observations of ancient eclipses.
456. **Hill, Geo. W.** Researches in Lunar Theory.
457. **Powell, J. W.** On the Public Domain.

REPORT OF HOME SECRETARY, J. E. HILGARD.

The Home Secretary made an oral report on the printing of the Academy. He had been charged with the preparation of an abstract account of proceedings of the Academy since its organization, and with the publication of this matter, together with the biographical memoirs of deceased members, heretofore read before the Academy. He has the pleasure of now laying both volumes before the Academy. The proceedings contain the Act of Incorporation, Constitution, and brief statements of business done by the Academy from the beginning to the present date.

The matter heretofore published in the manuals is comprised in this volume. The Secretary is indebted to many members for advice with regard to the arrangement of the matter and style of printing. This publication will be kept up hereafter in similar form, paged consecutively. The whole work has been stereotyped, comprising 120 pages. Only 250 copies have as yet been printed, sufficient to meet our present demands.

The biographical memoirs are comprised in a volume of 348 pages, and give the biographies of fifteen deceased members. These are likewise stereotyped and arranged in such a way that separate copies of each may be printed.

REPORT OF THE TREASURER, FAIRMAN ROGERS.

The Treasurer's Annual Report was presented as follows:

NATIONAL ACADEMY OF SCIENCES,
April 17th, 1877.

The Treasurer reports that in the current account he had a cash		
balance from last year of.....	\$1,030	11
That he has received during the year from members.....	545	00
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Making the total cash receipts.....	\$1,575	11
The expenditures have been for—		
Printing memoirs, annual, &c.....	\$731	11
Copying.....	45	12
Meetings.....	10	00
Stationery and postage.....	38	50
	<hr/>	
		824 73
Leaving a balance of cash on hand of.....	\$750	38
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In the trust account the receipts from interest on investments		
have been.....	\$2,850	85
Balance of income from preceding year.....	2,426	97
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Total.....	\$5,277	82
Out of this has been paid for—		
Repairs to house in Washington.....	\$92	80
Taxes, Washington and Missouri.....	80	51
Rent of safe.....	5	00
Appropriations for research—		
A. M. Mayer.....	\$250	
J. E. Hilgard.....	1,000	
Chas. Peirce.....	800	
S. P. Langley.....	500	
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	2,550	00
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		2,728 31
Leaving a balance of income of.....	\$2,549	01
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During the year the Foran ground rent was sold and the proceeds invested in United States five per cent. loan, making the amount now invested in United States loan.....	\$42,300	00
In City of Davenport loan.....	1,000	00
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Total productive principal.....	\$43,300	00

The resignation of Mr. B. Peirce was accepted.

REPORT OF COMMITTEE ON WEIGHTS.

A report from the Committee on Weights, Measures, and Coinage was made by the Chairman, Mr. F. A. P. Barnard, accompanied by the following resolution, which was adopted:

Resolved, That the following memorial be addressed to Congress, on behalf of the National Academy of Sciences:

To the Senate and House of Representatives in Congress assembled:

The National Academy of Sciences having learned with great satisfaction that a convention has been entered into by the leading nations of the world for the establishment and maintenance of an International Bureau of Weights and Measures, with the object of promoting permanence, precision, and uniformity in the standards, at the joint charge of the contracting powers, and that the Government of the United States has agreed to the same through its diplomatic representative, subject to the ratification of the Senate, do now, for the considerations set forth in the report of their Committee on Weights, Measures, and Coinage made on the subject at the request of the Treasury Department, a copy of which is appended to the text of the convention submitted to the Senate, respectfully urge that the Senate ratify said convention, and that Congress make the requisite appropriation to carry the same into effect.

Five additional members were appointed on the Committee, which is now constituted as follows:

Committee on Weights, Measures, and Coinage.

Barnard, F. A. P.	Meigs, M. C.
Gibbs, Wolcott	Newton, H. A.
Henry, Joseph	Newcomb, S.
Hilgard, J. E.	Peirce, C. S.
Lovering, J.	Trowbridge, W. P.
Draper, Henry.	

On motion of Mr. F. A. P. BARNARD the vote on the nominations of Foreign Associates was postponed and the following resolution adopted:

Resolved, That a committee of three be appointed to consider and report whether any, and if so, what, rules ought to be adopted in

regard to the nomination and admission of Foreign Associate members of the Academy.

Messrs. F. A. P. Barnard, Wolcott Gibbs, and J. E. Hilgard were subsequently appointed such Committee.

On motion, the Council was instructed to report an order as to the disposition to be made of the apparatus procured at the charge of the Bache Fund.

COUNCIL, APRIL, 1877-8.

Baird, S. F.	Meigs, M. C.
Coffin, J. H. C.	Newberry, J. S.
LeConte, J. L.	Newcomb, S.

DEATHS.

The President announced the deaths of the following members:

Caswell, Alexis	Meek, F. B.
Davis, Charles H.	

And appointed Messrs. Pres't Angell, F. V. Hayden, and John Rodgers to prepare their biographical memoirs.

The Committee, consisting of Messrs. Chas. A. Schott and G. F. Barker, appointed to audit the accounts of the Treasurer, reported that they found them correct, and their report was accepted.

NEW RULES.

The following new rules were adopted:

It shall be the duty of the Committee of Arrangements to fix the length of time to be devoted to the reading of all papers submitted, and to limit the time to be occupied in their discussion.

Only members, and persons attending the meetings by invitation of the Council, shall be entitled to take part in discussion.

ELECTIONS.

The following new members were elected:

Draper, John W.	Draper, Henry
Scudder, Samuel H.	Peirce, Charles S.
Coues, Elliott.	

Mr. John W. Draper subsequently declined his election.

On motion, it was—

Resolved, That all apparatus procured at the charge of the Bache Fund for the use of investigators shall be duly receipted for by those to whom it is loaned, according to forms to be prescribed by the Board of Direction, and shall be returned to the officer having charge of the property of the Academy whenever the investigation, for which it was provided, is completed, but that it shall at all times be held subject to the disposal of the Academy.

NOMINATIONS.

Seventeen nominations for membership were made, to be acted on at the April session of 1878.

The Academy adjourned on the afternoon of April 20th, to meet again on October 23, 1877, at Columbia College, in New York city, for scientific business only, according to a resolution adopted by the Council.

SCIENTIFIC SESSION.

HELD IN NEW YORK CITY, OCTOBER 23D TO 25TH, 1877.

A scientific session having been called by the Council, the Academy convened at Columbia College, New York city, on October 23, the President, Mr. Joseph Henry, presiding.

The following-named members were present: Messrs. Abbot, Agassiz, Alexander, Barker, Barnard (F. A. P.), Barnard (J. G.), Brush, Chandler, Dalton, Dana, Draper, Gill, Guyot, Hall (J.), Hilgard (J. E.), Hill, Langley, Loomis, Marsh, Mayer, Morton, Newberry, Newton (H. A.), Pumpelly, Rood, Silliman, Smith, Trowbridge, and Verrill.

TITLES OF PAPERS READ.

458. **Alexander, Stephen.** On the laws of extreme distances in the solar system.
459. **Abbot, Henry L.** Velocity of transmission of shocks, caused by the explosion of gunpowder and of nitroglycerine compounds, through the Earth's crust.