## Memoríes From the SEAS Tíme Capsules

#### The Fírst Decade: 1864-1874





John Stevens, 1768 Pioneer American mechanical engineer, inventor and railway expert



James Renwick, 1807 Advisor on most engineering problems of his time

• Columbia engineers before the Schools of Mines and Engineering.

• From

#### EARLY COLUMBIA ENGINEERS

Horatio Allen, 1823 Imported and operated first steam locomotive in America





Alfred W. Craven, 1829 Chief Engineer of the Croton Aqueduct Commission

AN APPRECIATION MAN APPRECIATION MAN STERENS 1768 JAMES RENWICK 1807 HORATIO ALLEN 1823 ALFRED W. CRAVEN 1829 NEW YORK COLUMBIA UNIVERSITY PRESS 1929

Prepared by J. K. Finch, Professor of Civil Engineering, and published by the Columbia University Press for a group of Alumni of the Columbia Engineering Schools, in connection with the One Hundred Seventyfith Anniversary of Columbia University, in the City of New York, October, 1929.

1864-2014 -

COLUMBIA ENGINEERING

The Fu Foundation School of Engineering and Applied Science

#### School of Mines and Metallurgy, COLUMBIA COLLEGE.

The necessity that exists for more fully developing all the material resources of the country has led the Trustees of Columbia College to take measures for establishing a School of Applied Science.

Our great industrial interests are everywhere suffering for the want of a sufficient number of thoroughly trained scientific experts. Such training is now to be obtained only with difficulty. There can be no doubt that an institution which provides it will, when once established (especially in the city of New York), speedily demonstrate its practical value to the communnity, and receive a liberal support; while the importance to the nation at large, in view of its present financial condition, of ascertaining and of developing the dormant mineral resources of our country, must be obvious.

As a first step in this direction, the Trustees are organizing a School of Mines and Metallurgy. In no department of industry is the want of scientific education more sensibly felt. Ignorance and inexperience are daily causing the loss of a very large percentage in the mineral products of the whole country. It is most important, not only to those specially interested in mining property, but to the community at large, that this waste be checked, and it can be checked only by an adequate supply of educated mining engineers and metallurgists, well trained in all the auxiliary departments of science.

The course of the school is to cover three years, and to include Analytical Chemistry, Mineralogy, Metallurgy, Lithology, and the formation of metallic veins, Geology, Palæontology, Machines, Mining, Mining legislation, &c. The method of in-

- Shown, the 1863 Trustee Letter of the Egleston Plan to establish the School of Mines, the predecessor to The Fu Foundation School of Engineering and Applied Science.
- January, 1864 Thomas Egleston appointed professor of mineralogy and metallurgy.





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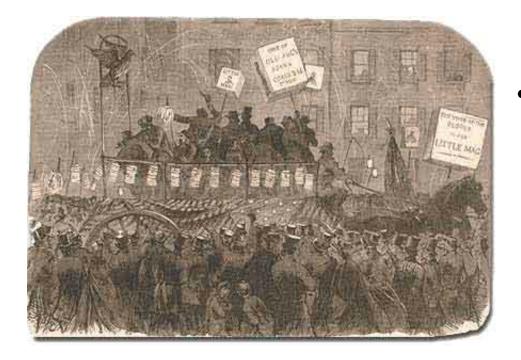


COLUMBIA | ENGINEERING The Fu Foundation School of Engineering and Applied Science 1864–2014

- Nov. 15, 1864 Columbia College School of Mines opens in a building on Madison Avenue, with a founding faculty of three
  - Thomas Egleston, Jr.
  - Francis A. Vinton, mining expert and Civil War veteran
  - Charles F. Chandler, chemist and founding Dean
- Shown, The School of Mines, 1865, on the Columbia University 49<sup>th</sup> Street

campus.





 1864 – New Yorkers hold a torchlight parade for George McClellan, Abraham Lincoln's opponent in the year's presidential election.



SCHEME OF LECTURES IN THE SCHOOL OF MINES. COLUMBIA COLLEGE. New York. First Session from November 15, 1864, to May 15, 1865. FOR FIRST YEAR STUDENTS. Thursday. Friday. Hours. Monday. Tuesday. Wednesday. ·Algebra. 10 to 11 Prof. VAN AMILIN Mathematica Analytical Chemistry. Mathematics. Mathematics 11 to 12 Prof. VAN AMRINGS Prof. CHANDLER. Prof. VAN AMRINGS Prof. VAN AMEINGE · Geometry. Stochiometry. : Mining Surveying. Mechanics. 1 Physics. 12 to 1 Prof. CHANDLER. Prof. PECK. Prof. Roon. Prof. Roop. Prof. VAN AMRINGE 1 to 2 Descriptive Geometry Mineralogy. Descriptive Geometry. Mineralogy. 2 to 3 Prof. VINTON Prof. VINTON. Prof. EGARSTON Prof. EQLESTO Inorganic Chemistry Inorganic Chemistry 3 to 4 Prof. Joy. Prof. Jor. FOR SECOND YEAR STUDENTS. Geology. Geology. † Paleontology 10 to 11 Prof. CHANDLES Prof. CHANDLER. Analytical Chemistry. Metallurgy Metallurgy. 11 to 12 Prof. CHANDLER. Prof. EGLESTON Prof. Equaston : Organic Chemistry. : Organic Chemistry. Stochiometry. 12 to 1 Prof. CHANDLER. Prof. Joy. Prof. Joy. Mining Engineering. Mining Engineering 1 to 2 Prof. VINTON. Prof. VINTON. Mineralogy Mineralogy 2 to 3 Prof. EGLEST Prof. EGLESTON : Botany : Botany. 3 to 4 Prof. Tonney Prof. TORREY +FOR THIRD YEAR STUDENTS. Theory of Veins. Theory of Veins. 10 to 11 Prof. EGLESTON Prof. Equation Metallurgy. Metallurgy. 11 to 12 Prof. EGLESTON Prof. EQLESTON 12 to 1 Mining Engineering. Mining Engineering Mining Legislation. 1 to 2 Prof. VINTON. Prof. VINTON.

Hours not occupied by Lectures are devoted to Laboratory Practice, under Prof. Chandler and Mr. Potter.

\* Assaving.

Prof. CHANDLE

\* Temporary \* Not given at present 1 Commences in Febre • The School of Mines, 1864-1865 "Scheme of Lectures."



2 to 3

3 to 4

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1864-2014 -



"A Perpetual Fever-Nest," NYC, circa 1860's Engraved from a photograph by Anthony.

- 1867 Prof. Charles F. Chandler
  begins his work with New York
  City's Metropolitan Board of
  Health, monitors food and drugs,
  provides free vaccinations, ensures
  the safety of milk supplies, brings
  clean water into the city, and
  enacts building codes requiring
  indoor plumbing.
- 1873 Named NYC Health Commissioner (to 1883).
- Commissioner Chandler appoints first milk inspector.



	Trustees of Columbia College, and the	
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- First E. M. degrees to 13 (or 14) graduates in 1867, John A. Church is first in the class.
- 1867- E. M. degree of Edward Everett Giddings shown.



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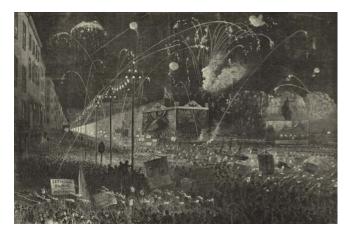
- First elevated railway in New York City opens on July 1, 1868 as the West Side and Yonkers Patent Railway, a cable-hauled line, along Greenwich Street and Ninth Avenue.
- Shown being tested in December 1867.
- This became the IRT Ninth Avenue Line, often called the Ninth Avenue El.



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RATIC CONVENTION





 July 4-9, 1868 – The Democratic nomination for President takes place in New York City. The lower image shows democrats rallying in Union Square in support of Seymour and other local candidates, October 5, 1868.



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- 1869 American Museum of Natural History opens, with exhibits of the Museum's collection going on view for the first time in the Central Park Arsenal, the Museum's original home on the eastern side of Central Park.
- 1877 The Museum's first building opens.





- April 13, 1870 The Metropolitan Museum of Art opens to the public in the Dodworth Building at 681 Fifth Avenue.
- March 30, 1880 The Museum opens to the public at its current site on Fifth Avenue and 82nd Street.

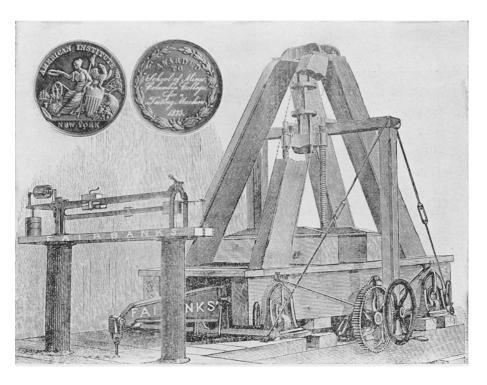


- Students petition to trustees in the spring of 1872 for full participation at commencement for Mines.
- On May 6, 1872 the Trustees allow the President and faculty to consider this (original minutes below).
- All seven speaking parts had always gone to College students; now two went to Mines students.

Tel of tindents of M motion of the Plesident, Resolved that it be referred Sch. g.M. lef? to the Plesident and the Facueties of the Gollege and the Pres. or with power. School of Mines to consider the Petition of the Indentiof the School of Mines, asking to share in the privileges and partia in the exercises of the annual Commencement; with power to tak suchorder on the subject as may seem to them expedient.

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- Shown, the Old Fairbanks Machine in Mechanical Engineering, with the silver medal it received in 1873.
- It is installed in 1874.
- This marked the beginning of the Columbia Testing Laboratory.

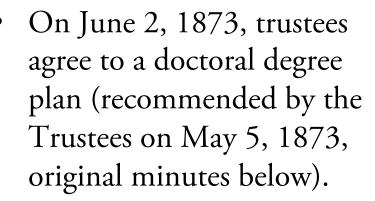


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Resolution of President Frederick A. P. Barnard on April 7, 1873 to allow the School of Mines to grant the Ph.D.

COLUMBIA | ENGINEERING

The Fu Foundation School of Engineering and Applied Science
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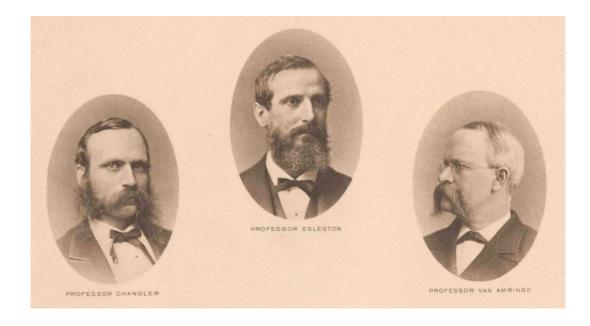
pt of Comme. The Committee on the School of Minies present Schog Mines following Teport. The Committee on the School of Mines h was referred to inquire and report whether has not arnived at which it would be apres prescribe conditions on which graduates of Mines may be institled to receive the degree of Doctor of Phi Tom representations made to the Gomm that during the past two years a number of the graduate School have desired to be informed on what con they could be allowed to proceed to the higher degree an have proposed to pursue any course of morestic atton or study which may be prewrited to them for that purpose of Philosophy in course, and that the desire to secure attainments in surve and to become muce tigators after graduation. The Committee conclude therefore that out to its graduates the prospect of allarning this high er honow, which appears to them so desirable, and Lacuety of the school as to the conditions proper to b





• Shown, artifacts from the School of Mines student receptions in 1874 and 1875.





 Three early Mines professors: Egleston, Chandler, and Van Amringe

