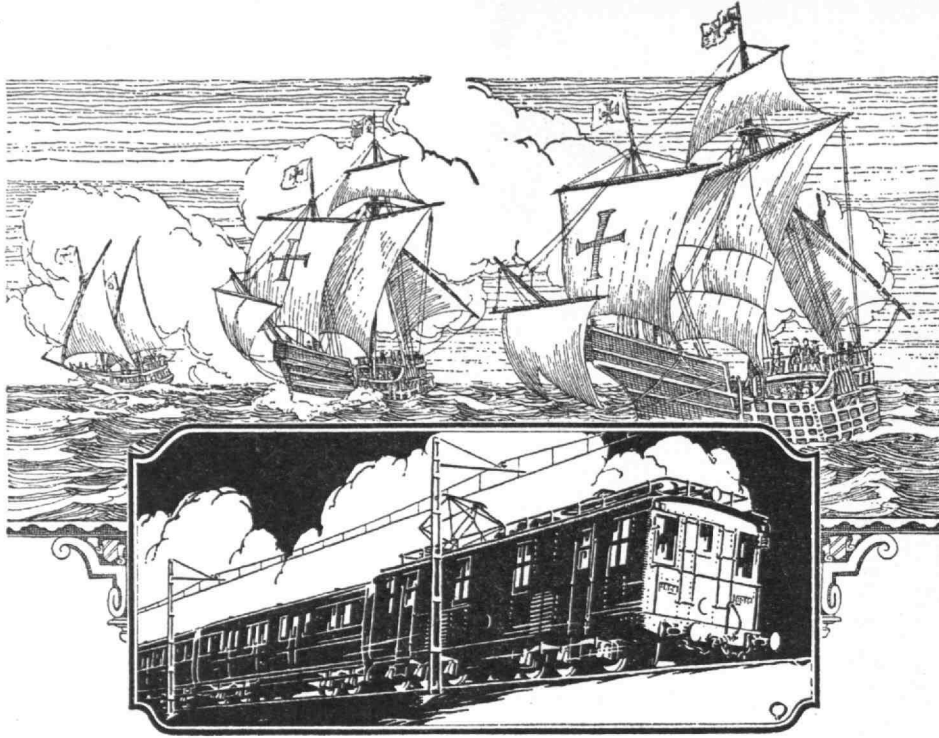


The January
TECHNOLOGY
REVIEW



Frank A. Bourne

RELATING TO THE MASSACHUSETTS
INSTITUTE OF TECHNOLOGY



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Old records show that the cost of Columbus' first expedition to America amounted, in modern exchange, to only \$7200. To finance Columbus, Isabella, Queen of Spain, offered to pawn her jewels. Today word comes from Spain indicating that a twentieth century importation from the new world is fast effecting a sufficient saving to ransom many royal jewels. The Spanish Northern Railway reports that the American equipment with which in 1924 the railroad electrified a mountainous section of its lines from Ujo to Pajares has accomplished the following economies:



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AT
TWENTY EAST BROAD

January 2, 1928.

HERE'S NEWS FOR THE CHEMICAL ENGINEERS!

Dear Alumni:

To temporarily change the subject from the new H-P-M "HI-SPEED" Presses for metal working service (started last month), I want to tell those of you interested in Chemical Process industries of a new and equally important press development recently perfected in your line.

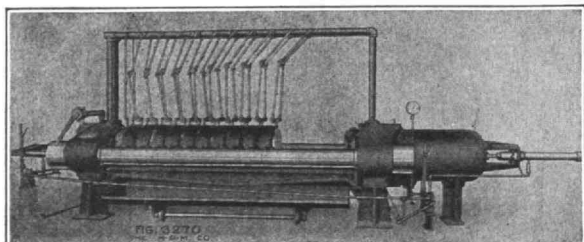
You will agree that the mechanical separation of liquid and solid portions of materials is an important type of operation in your broad field. How about the many cases where filtration does not carry the separation far enough to be economically practical? Then it is essential to rework the filter cake by drying, heavy pressing, or other means. That involves extra labor and expense in re-handling, of course.

Well, here is a new press designed to improve such situations by handling both the initial (filtering) and final (pressing) stages in one machine. This is known as a Hydro-Filter Press—a distinctive, patented H-P-M design. It consists of a series of pots separated by double ended plungers carrying filter pads and drainage plates. The original material is pumped into the pots with a portion of the liquid content filtering through the pads. When this is carried to a practical limit, and the pots are filled, a heavy hydraulic pressure is applied directly to the filter cakes in the pots by merely manipulating the control valves.

The press illustrated is capable of exerting a total pressure of 600 tons. As the pots have an internal diameter of 28 inches, this means a final unit pressure on the cake of one ton per square inch. Still higher pressures are practical, if required.

The dry cakes are readily ejected from the pots by hydraulic pressure, too.

I will be glad to discuss with any of you the application of our new system to any separation problem which appears to come in the class indicated. This may provide the means of cutting your production cost, besides improving results. Let's talk it over.



Yours for Tech.

Howard F. MacMillin
II-21.

Howard F. MacMillin,
Vice-Pres. in charge of Sales,
The Hydraulic Press Mfg. Co.

The TECHNOLOGY REVIEW

Relating to the Massachusetts Institute of Technology

VOLUME XXX

NUMBER 3

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"Galérie Cluny" by Frank A. Bourne, '95. Courtesy, Charles E. Goodspeed & Company.	

H. E. LOBDELL, '17	Editor
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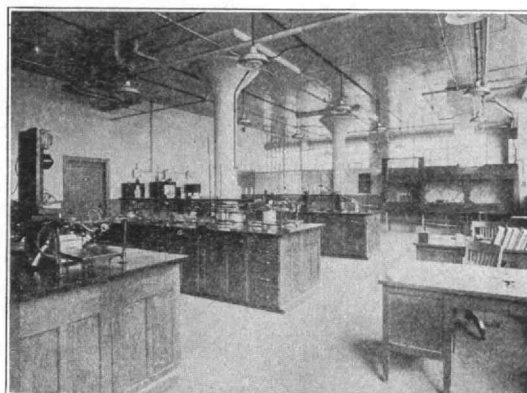
In THE REVIEW for February

❑ PROFESSOR FREDERICK K. MORRIS, a member of the Roy Chapman Andrews Asiatic Expedition, will discuss, not dinosaur eggs, but the racial characteristics of the Chinese. A number of pen and ink sketches by the author will accompany the article.

❑ WITH the Chinese question greatly clarified, the Review Reader will then be transported to Venezuela for a Model T expedition conducted by Walter L. Whitehead, '13, and William F. Jones, '09 over the Andes and across the llanos.

❑ AND to be sure there will be the usual departments, including Undergraduate Affairs. The fourth of the series of intimate biographies of Class Secretaries will also appear.

SIMPLEX CABLES

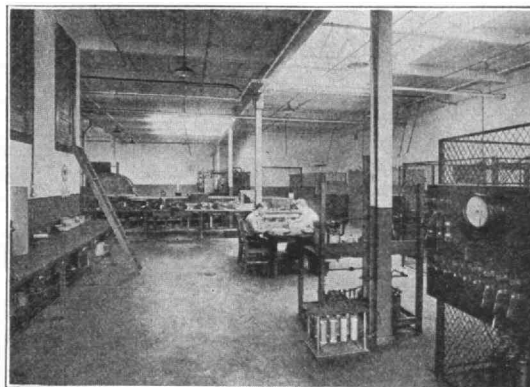


The Simplex Wire & Cable Company has always been among the leaders in the development of the wire and cable industry. It has done much progressive pioneer work and was the first to bring out the high-grade, flexible rubber-sheathed cable which has largely replaced the many types of braided or woven covered cords and cables.

Many years ago it recognized the importance of research work in the manufacture of its products. Thoroughly equipped electrical and chemical research laboratories are constantly obtaining new information which is used as the basis for improvement in Simplex wires and cables.

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Architect
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THE NEW HOME of the Exchange National Bank of Tampa, Florida, is a building of blue Indiana Limestone with interior in Botticino and Tennessee Marble, splendidly designed for the needs of a commercial bank in a rapidly growing city.

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The TECHNOLOGY REVIEW

VOLUME 30

JANUARY, 1928

NUMBER 3

The Trend of Affairs

MILLIONS of years ago the waves of the ocean rolled over what is now the location of Technology, and it is quite possible that the primitive and long extinct crustacean known as the trilobite wiggled its way over the very land where the geological expeditions of Major Albert S. Smith, Superintendent of Buildings and Power, now carry on their experiments in clam shells and cinders.

The watery past of the land where the buildings of the Institute now stand was described by Dr. Hervey W. Shimer, Professor of Paleontology in the Department of Geology, in the first of the season's Popular Experimental Science lectures given on December 16, 17 and 18, under the auspices of the Society of Arts.

Speaking on the "Geologic History of Boston and Vicinity," Dr. Shimer described the geological evolution of Eastern Massachusetts, its vanished mountains and glaciers, and its changing form of life. Some 3,000 to 5,000 years ago, he explained, this region had a climate as warm as that of the present littoral of Virginia. This, he said, is indicated by the numerous marine shells, including oysters nine inches long, which are enclosed in the old muds under Boston. He recalled, too, that subway construction in front of Rogers Building on Boylston Street, revealed the lower portion of an ancient fish weir, proving the presence of man well advanced in the mechanical arts and crafts.

A few thousand years earlier the entire region was covered with ice. During this period the musk ox and huge elephants with hairy coats roamed the land while walrus lived in the ice fields off the coast. Here, also, in the Tertiary period, was found the foot-high Eohippus, ancestor of the horse, camels

and various types of rhinoceroses. At an earlier period the region was populated by vast numbers of reptiles, especially dinosaurs and reptiles which winged their way through the air. At a still earlier period when the land was covered with tree-fern and club-moss forests, which in Nova Scotia and Rhode Island formed coal beds, dragon flies and cockroaches abounded.

Tracing the records of the rocks, Dr. Shimer described how the present appearance of the land came into being. At the beginning of the Cambrian period, some 500,000,000 years ago according to radio-activity methods of reckoning, the ocean waters flowed over the Boston area, then a level region of crumpled schists, and remained there for some millions of years. During that period thousands of feet of sands, muds and limestones were deposited in the ocean.

This region, as well as large areas to the north and south, was raised out of the ocean and folded into mountains and during the process molten diorite penetrated to great depths. Later the area between the Arlington and Swampscott hills to the north, and the Blue Hills to the south gradually sank as a great fault block, forming the Boston Basin. During the succeeding Mesozoic period the entire region was worn down to a level plain, then raised without faulting or folding. Subsequent weathering developed a valley in the Boston Basin as the rocks at the surface were softer than the granites and diorites to the north and south. A slight rise of the ocean in the early Pleistocene period caused a folding of a part of the valley forming Boston bay. Then over the region came the great glaciers from the north to melt back after thousands of years, leaving the country covered with the lakes, swamps, and irregular hills of today.



DWIGHT F. DAVIS

Secretary of War who will be one of the speakers at the Annual Dinner of the Alumni Association, January 7

Prosperity in Cathay

ALL is not chaos in China. The country is like one of its own beggars, outwardly ragged but internally prosperous, says Frederick K. Morris, recently come to the Institute as Assistant Professor of Structural Geology from an experience as a member of the Third Asiatic Expedition of the American Museum of Natural History to the Mongolian Desert of Gobi.

From 1920 to 1925, Professor Morris was in either China or Mongolia, and for eighteen months preceding the Third Expedition he was organizing and supervising the Department of Geology at Pei Yang University in Tientsin. He learned to speak fluently the language of the northern provinces, and consequently was able to make intimate contact with Chinese conditions. The Second and Third Asiatic Expeditions, of which Roy Chapman Andrews was the leader and Professor Morris one of the geologists, discovered, it will be recalled, many evidences of former life in romantic Gobi, including the now famous eggs of the dinosaur.

"Factories are springing up in China," says Professor Morris, "some of the railroads are prospering, especially in Manchuria, and new land is coming under the plow. But with the spread of industrialism in China, there has

come the inevitable increase in population and a demand for more food and raw material, an increasing proportion of which must be imported."

Referring to the prevalence of news of internal strife in press dispatches from the Far East, he says that civil warfare is not new in China's history. Nor is the swaying of vast numbers of the people by propaganda new, and recently the ammunition of her competing war lords has in some cases been propaganda rather than cartridges. He relates a story of how he met a well-educated Chinese who was upon a thousand-mile journey, carrying with him a suitcase filled with propaganda that ranged from a simple once-folded sheet to bound books containing statistics and historical data suited to the intelligence of the coolie or the well-educated Chinese. The spread of communistic propaganda in China has been carried on by the Chinese themselves more actively and successfully than by Russians.

"To understand China we must correct erroneous impressions, for China is not peopled with New Englanders. Instead, they are a racially different people, with their own physical and mental characteristics, and their own talents, capacities, and defects. Christianize them, if you believe it will pay, but never expect Europeans as a result; educate them, yes, but do not look for other than educated Chinese.

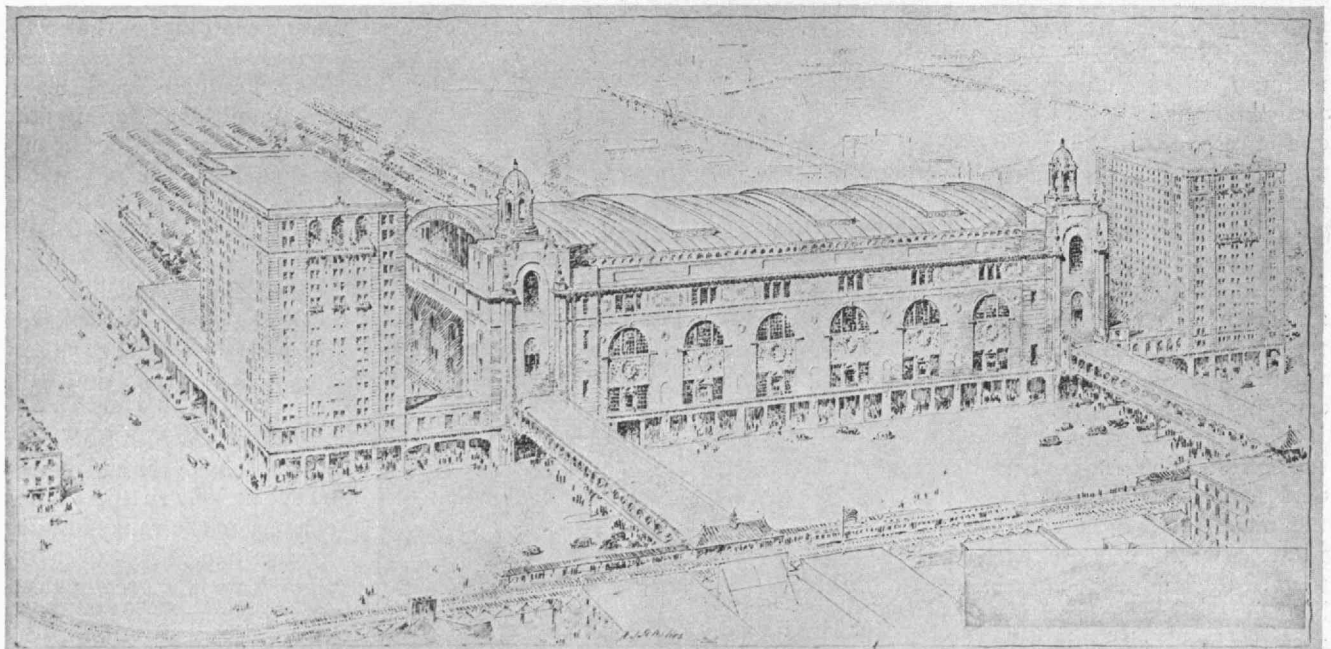
"No matter how earnestly we wish to aid China 'to get to her feet,' we shall fail of our purpose if we proceed under a false theory — a misunderstanding of what is happening there. Those who blame England or Russia for the situation are like the blind man who felt the elephant's trunk and said he was shaped like a rope."



Christian Science Monitor

CHINA HIS SUBJECT

Professor Frederick K. Morris, sometime Professor at Pei Yang University in Tientsin and a geologist on the Second and Third Asiatic Expeditions



FROM THE RIDICULOUS TO THE SUBLIME

The old North Station, terminal of the Boston and Maine Railroad, is now being razed to permit the erection of the above structure. See the opposite page

Architectural Ingenuity

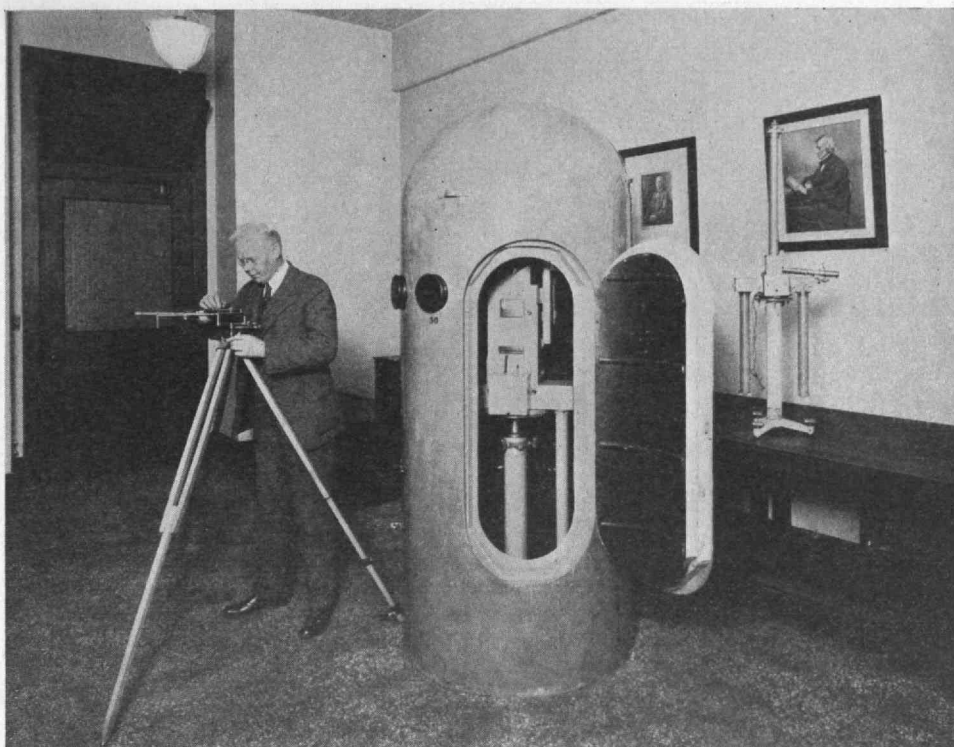
IT had been decided that the Society of Beaux Arts Architects should have a new building. Forthwith a dangerous difficulty, nay a near impasse, presented itself all wreathed in figurative gargoyle grins to President Kenneth M. Murchison. Who was to design this building? What with the eligible New York architects all members of the Society, who dare discriminate in favor of any one of them?

Not abashed one whit, President Murchison plunged into Solomonic thought and soon emerged triumphant. A competition *en loge!* Whereupon members were notified, old and young, important and unimportant, that on a certain day at a certain place they were to present themselves at noon equipped with T-squares, triangles, drawing boards, and other bare necessities. Those who answered the summons to enter the competition were to pay a fee of twenty-five dollars toward the general building fund. Those who did not enter were to pay thirty-five dollars. And not least among the usufructs, the winner of the competition was to be the architect of the new building.

At the appointed hour, some forty architects, presented themselves, as in manner probably they had not done since student days. Four mighty hours they worked without benefit of study, or office force, or other aids to architecture. The end of the period found a committee of judges on hand,—dignified heads of the architectural departments of several colleges—and without delay they appraised the designs of the new building's façade. The winner, they announced at the Society's Annual Dinner, was Frederic C. Hirons, '03, a winner in 1904 of the Paris Prize, and now a practicing architect in New York. And so Mr. Murchison, Mr. Hirons and all the rest went on their way satisfied and rejoicing.

Gare du Nord

THE new North Station of the Boston and Maine Railroad at Boston, now under construction, one of the largest terminal developments in the world, including as it does a great coliseum, sports arena, hotel, and an office building was designed by Funk and Wilcox, Inc., of which George C. Funk, '05, is a member, and will be built by Dwight P. Robinson ['92] and Company, Inc.



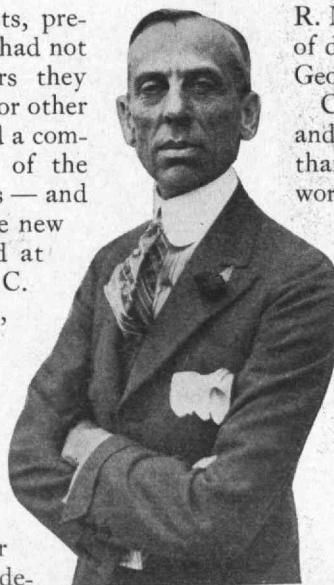
A DIVINING ROD OF SCIENCE

The weirdly-shaped case houses one of the two torsion balances, used for detecting oil, recently given to the Institute by the Geo-Physics Corporation. Professor William S. Hutchinson, '92, Head of the Department of Mining and Metallurgy stands by

The new terminal is scheduled to be ready by next July and the coliseum and sports arena will be completed late in the autumn. The coliseum will have a seating capacity of 18,500, which is equal to that of Madison Square Garden in New York. It has been leased to a corporation of Boston and New York business men and sportsmen, including John R. Macomber, '97, chairman of the board of directors, Matthew C. Brush, '01, and George L. (Tex) Rickard.

Construction of the passenger terminal and the coliseum, which will cost more than \$4,000,000, has been started, while work on the hotel and office building will begin within a few months. The total cost of the terminal development with a railhead of twenty-three tracks will be approximately \$10,000,000.

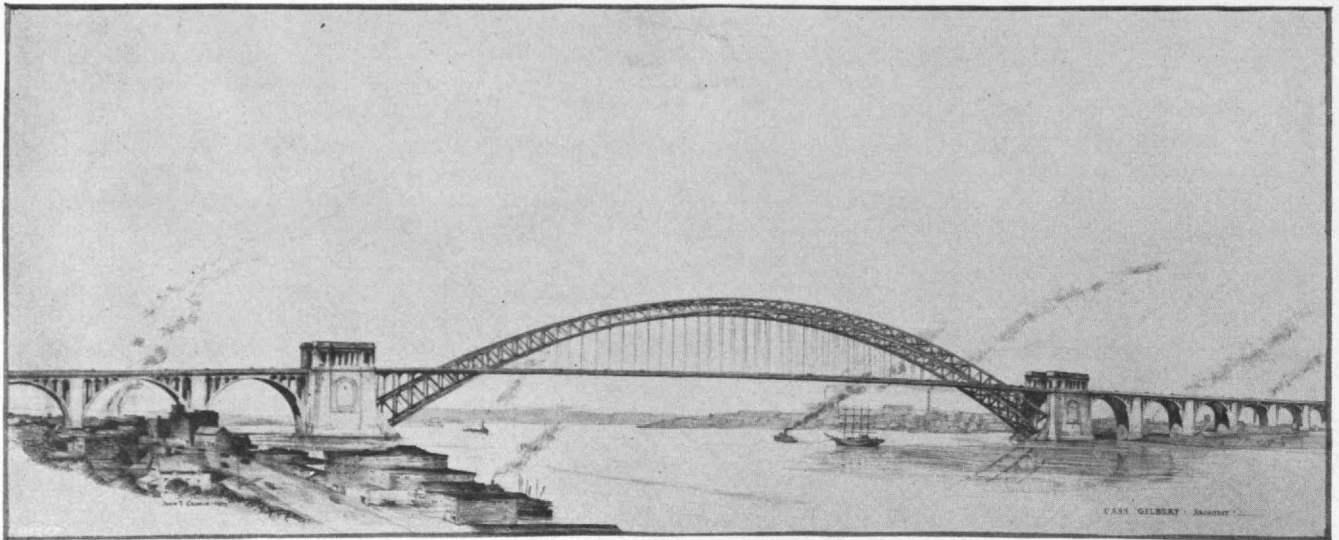
The new station will have a frontage of 700 feet, facing on a street which will be widened to 110 feet. The hotel will stand at the western end of the terminal structure and the office building at the eastern end. The great concourse, 512 feet long, will be separated from the tracks by an ornamental grill and glass partition, and all baggage will be carried to trains on overhead ramps, thus eliminating the inconvenience of trucking on passenger platforms. The waiting



International

MELON CUTTER

General Motors cut a \$65,250,000 melon recently. Alfred P. Sloan, Jr., '95 is President



KILL VON KULL BRIDGE

Proposed connection between Bayonne, N. J., and Port Richmond, S. I. The architect is Cass Gilbert, '80, and the rendering is by John T. Cronin, '17

room will have seats for 500 passengers in comparison with a seating capacity of 300 in Grand Central Terminal in New York. In designing the terminal, the architects, with whom were associated as consulting architects, Feldhimer and Fields of New York, have placed the train platform, concourse and waiting room on the same level, an arrangement found in few stations in the country. Ramps will lead from the waiting room and concourse to the mezzanine floor which will have connections by ornamental bridges with rapid transit stations of the street railway.

The coliseum will have a floor space 250 feet long and 125 feet in width, with a full height of 90 feet above the station level. Special equipment will provide ice for hockey and public skating in four hours and remove it in an hour.

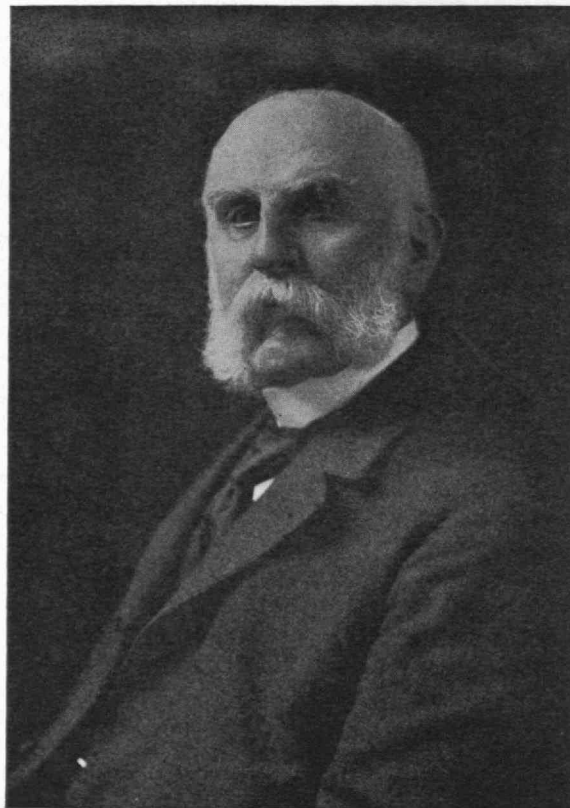
The new North Station will bring together into a unified passenger terminal the scattered facilities once used separately by the Boston and Lowell, the Eastern, and the Boston and Maine Railroads. Built in 1893, the present North Station was considered one of the best examples of terminal architecture of its day. It will continue to serve its purpose while the walls of the new structure rise about it. It is interesting to note that this new development is similar to a plan proposed over forty-one years ago in the undergraduate thesis of Frank L. Locke, '86.

George Abbott Osborne

SURVIVING all his colleagues of the Institute's original Faculty, George Abbott Osborne, a member of the Department of Mathematics from 1866 to 1910, died of pneumonia at his home in Boston on November 19. He graduated from the Lawrence Scientific School in 1860, instructed for a year at that institution and then went to the United States Naval Academy to become professor of mathematics, navigation, and naval astronomy during the Civil War.

In 1866 William Barton Rogers, Founder and President of the Institute, was casting about for additions to the newly-formed staff and it was then that he came upon the young Annapolis professor and brought him back to Boston. His progress was rapid: from 1866 to 1868 he was Professor of Navigation and Nautical Astronomy; from 1868 to 1870, Professor of Astronomy and Navigation; from 1868 to 1871, Secretary of the Faculty; from 1870 to 1902, Professor of Mathematics, Astronomy and Navigation; from 1902 to 1910, Walker Professor of Mathematics; and in 1910 he was made Professor-Emeritus, though at his own request he continued to do a limited amount of actual teaching work.

Not only as a teacher but also as a textbook writer was



GEORGE ABBOTT OSBORNE

Last surviving member of the Institute's original Faculty. He died November 19. See this page