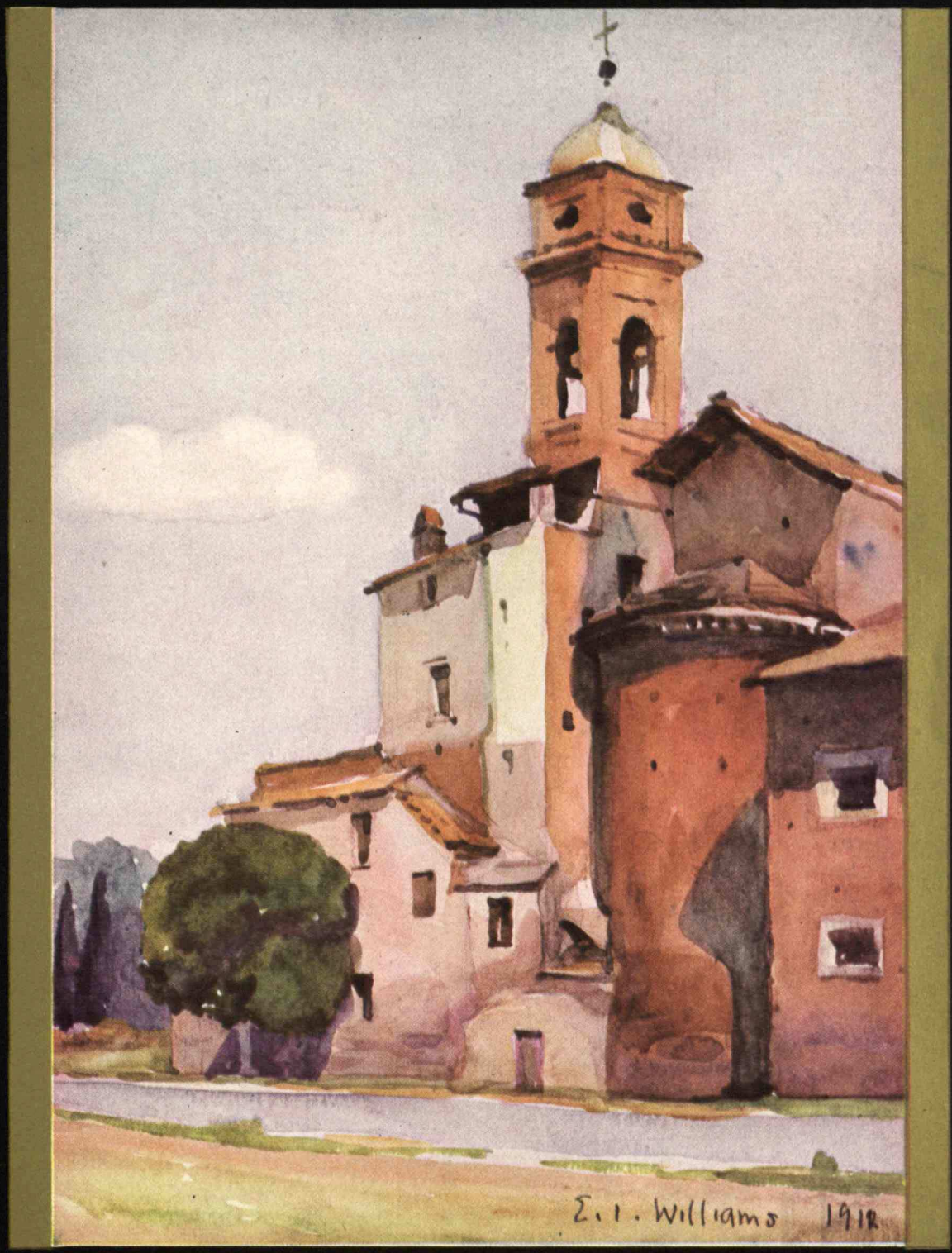
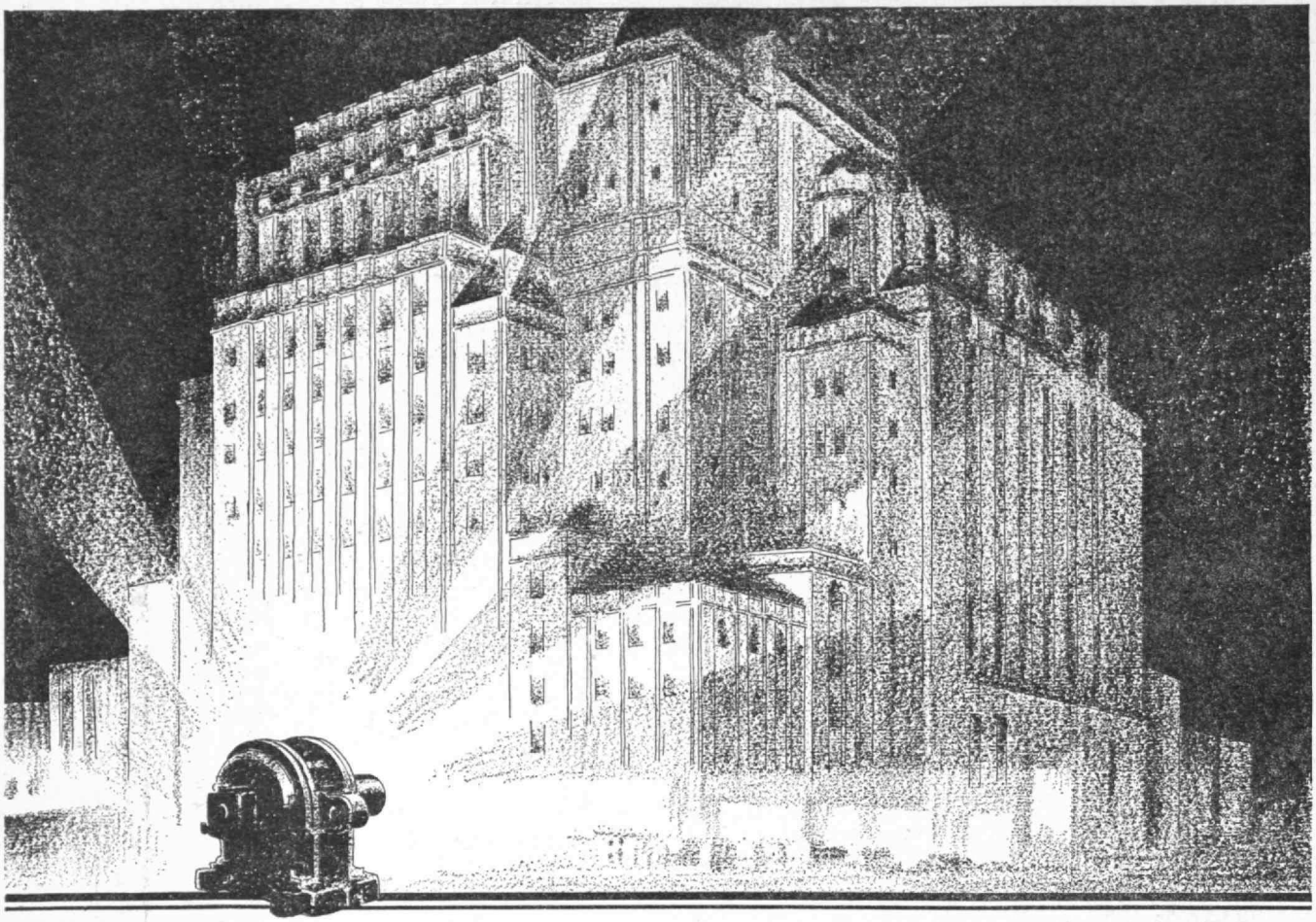
THE TECHNOLOGY REVIEW

JANUARY 1931





How the new Strawbridge and Clothier Store in Philadelphia will look in 1931. The first department-store building of set-back design in America—Electrically equipped throughout by General Electric. Turner Construction Company, General Contractor. Woodfield-Thompson Company, Electrical Contractors. Simon & Simon, Architects.

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THE TECHNOLOGY REVIEW, January, 1931. Vol. XXXIII, No. 4. Published monthly from October to May Inclusive and in July at 10 Ferry Street, Concord, N. H. Publication date: twenty-seventh of the month preceding date of issue. Annual subscription $3.50; Canadian and Foreign subscription $4.00. Entered as second-class matter at the Post Office at Concord, N. H., under the Act of March 3, 1879.

THE TABULAR VIEW

READERS of The Review have in a very gratifying way signified their appreciation of its monthly survey of scientific and technical developments. The many letters we have received indicate that items which have appeared in the "Trend of Affairs" section not only have informed Review readers but have suggested to them industrial opportunities and warned them against the all too common fads and frauds of pseudo-science. In preparing this section we do not pretend to completeness, but we are desirous rather of including in it as great a variety of interesting and valuable information as can be focussed in so small an area. ¶ Toward this end The Review has acquired the services of two more contributing editors who will add each month important and interesting items from their particular field. With this issue Tenney L. Davis, '13, Associate Professor of Organic Chemistry here at the Institute, and W. P. Cutter of the Harvard Business School begin their monthly contributions to this section. For this issue, Professor Davis prepared the article on "Alchemy in Old New England" and Mr. Cutter the article on windowless buildings. Review readers, we are sure, will welcome these new contributors.

FEW men who are not themselves scientists or engineers have more to say to members of those professions than Charles A. Beard, authority on American history, on government, and on American civilization. He has inquired into the meaning and effect of modern technology with more care and perspicacity than probably any other American scholar. It will be recalled that several years ago he edited a book entitled "Whither Mankind" which advanced the thesis that what is called western civilization as distinguished from other cultures is, in reality, a civilization of technology resting at bottom on science and machinery. It will also be recalled that this book was followed by another symposium called "Toward Civilization" in which a group of scientists and engineers inquired into the "dynamics of their laborers with particular reference to the human aspects." In that volume Professor Beard contributed an admirable introduction and summary, distinguished alike for its sympathetic attitude towards the methods and spirit of technology and by a dispassionate criticism. "Engineers," wrote Professor Beard in that book, "recognize the significance of that marvelous instrument of the human mind — the invention of invention, although they rely upon it for making immense advances in the future, they still find that electric fluid, imagination, absolutely essential to the achievement of results in the realm of the unexplored and unprecedented. Without it, science and engineering become dogmatic and sterile. It must be and is being cultivated and nourished as one of the essential forces of the modern world. Imagination, informed by the known laws of nature, but unbound and free to experiment and dare, combined with the spirit of rationality, lives and flowers in the engineering age and will swing new planets into the ken of those who watch the heavens for signs of the future."

(Continued on page 172)


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THE TABULAR VIEW

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¶ Because Professor Beard sees the modern scene so clearly, and because he appreciates and understands the problems and motives of the scientist and technologist, The Review is particularly happy to present in its pages an article by him, written in collaboration with his son, a graduate of the Institute in the class of 1928.

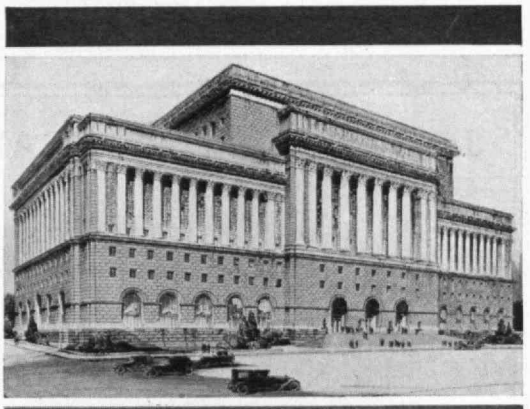
THE article, "Machine Age Politics," is a development of one of the theses set forth in "The American Leviathan," the book that has just been published by Professor Beard and his son. The Beards in their article point out what technology has done to government. The fact that it plays so large a part implies a responsibility on the part of engineers, a responsibility which we are optimistic enough to believe the more intelligent and informed engineers realize. ¶ As evidence of this we point to the formation of the American Engineering Council in the spring of 1917. This body, representing 57,000 of the leading professional engineers of the United States, has as its object the furthering of public welfare wherever technical and engineering knowledge and experience are involved. In its actual operation the Council has assisted the federal government in every possible and legitimate manner on engineering questions. It has been able to thwart many unwise and ill-conceived enterprises and it has been able to suggest creative work entirely beyond the purview of the politicians. ¶ We cannot pass on without noting the versatility of the Beard family. Mrs. Beard was co-author with her husband in writing the "Rise of American Civilization" and she has also published books on labor questions. William was a brilliant student at the Institute, taking the Course in Civil Engineering. Professor Beard himself has a broad academic and professional background. He holds degrees from De Pauw University and Columbia and has studied at Cornell and Oxford University, England. For many years he was a professor of politics at Columbia University. From 1917 to 1922 he was director of the Training School for Public Service in New York City. As director of Institute Municipal Research in Tokyo and as adviser to Viscount Goto, minister of home affairs after the earthquake in 1923, he added to his knowledge of foreign affairs. At present he is living in New Milford, Conn.

FOR THE second time this year, Dr. Karl T. Compton writes for The Review. In "An American Faraday" he gives a comprehensive survey of the inventions of Elihu Thomson, director of the Thomson Laboratory of the General Electric Company, Lynn, Mass., inventor of electric welding, and holder of 700 patents for inventions in electric lighting. At the present time he is engaged in a new line of activity — constructing the largest telescope mirror ever undertaken. ¶ Since the writing of this article, the Society of Mechanical Engineers has conferred an honorary membership on Dr. Thomson for his distinguished work as an inventor. In the words of

(Concluded on page 174)

Milwaukee County Court House Building

Completely Equipped with Johnson Control



All of the heating and ventilating equipment in this building is automatically controlled by the Johnson System of Temperature Control. The direct radiation is controlled by the Johnson dual thermostats which operate the valves on the direct radiators so as to maintain a normally even temperature in the offices and rooms during the day and by means of a switch under control of the engineer automatically operating the valves at a lower temperature during the night. There are ten main mechanical ventilating systems all equipped with Johnson control. The thirty court rooms are heated by indirect systems of heating and ventilating controlled by Johnson thermostats operating on mixing dampers. The Judges' Chambers are provided with individual heating and ventilating systems employing unit ventilating machines completely controlled by Johnson thermostats. All fresh air intake, recirculating and exhaust ducts are provided with Johnson dampers which are operated by pneumatic switches under control of the engineer. Architects: Albert Randolph Ross, New York and Milwaukee. Heating and Ventilating: Wenzel & Henoch, Milwaukee. John Messmer, Superintendent of Buildings, Milwaukee County.

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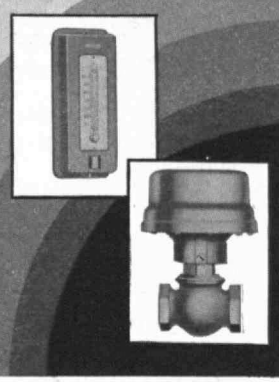


JOHNSON HEAT AND HUMIDITY CONTROL

THE TABULAR VIEW

(Concluded from page 172)

Dr. Compton, Elihu Thomson has "combined in a most remarkable way the constructive powers of the inventor, the thoroughness and soundness of the man of science, and the kindly balance of the ideal philosopher, teacher and friend." ¶ Dr. Compton has remarked on the difficulty he once experienced, as have many others, in disentangling the contributions of the Thomsons to electrical engineering. There are more than a half dozen "Thomsons" to be found in the indices of scientific histories. To clarify the situation we have listed below some of them, together with notes on their achievements:

JAMES THOMSON (1822–1892). A British physicist and engineer at Glasgow University, renowned for work in thermodynamics, hydraulics, and civil engineering.

WILLIAM THOMSON, LORD KELVIN, (1824–1907). A British physicist and brother of James. He proposed the absolute scale of temperature and put the dynamical theory of heat into such a form as to command universal acceptance. His work in the field of submarine telegraphy gave him his world-wide reputation. In all, he published more than 300 papers covering every branch of physical science.

SIR JOSEPH JOHN THOMSON (1856–). A British physicist at Cambridge University, who carried out epoch-making investigations on the conduction of electricity through gases, the determination of the charge and mass of the electron, and analysis by means of positive rays.

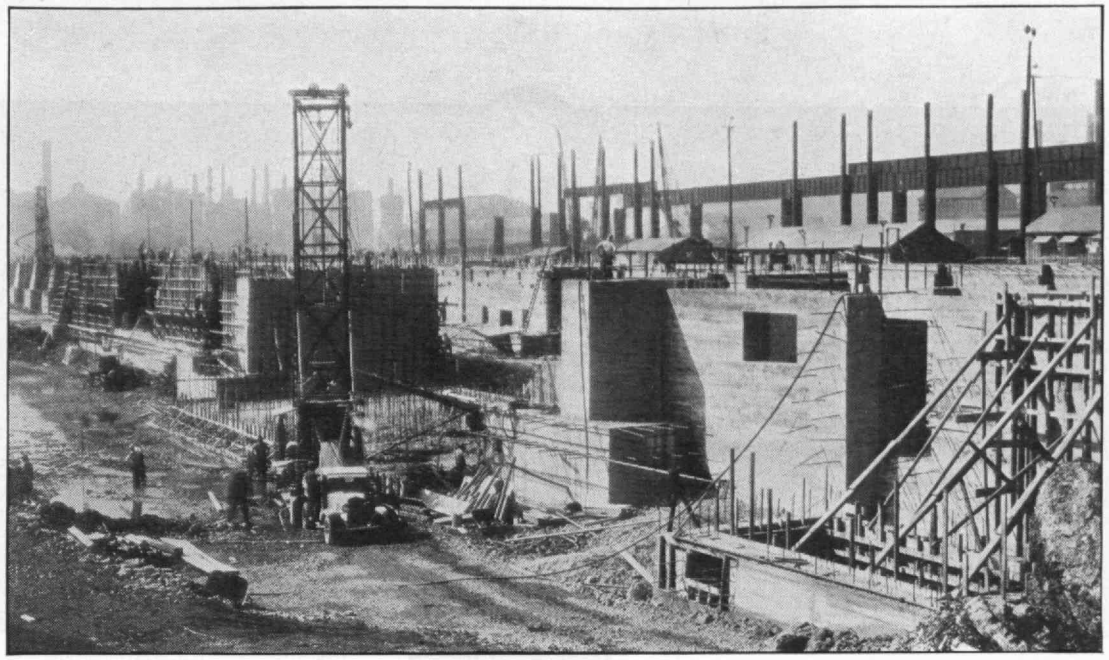
These three, together with Professor Thomson of Swampscott, have added immensely to our knowledge of electricity.

To round out the Thomson saga, two scientists of that name who have worked in other fields should be mentioned:

JOHN ARTHUR THOMSON (1861–), biologist.
JOSEPH THOMSON (1858–1895), explorer.

THE author of the significant article on the irradiation of foods, Mr. John J. Rowlands, is a Contributing Editor to The Review. He wishes to express his indebtedness to workers in the Departments of Physics and Biology of the Institute. Robert S. Harris, '28, associate of the Department of Biology and Public Health, conducted a 24-day experiment on rats, the results of which are shown by illustrations and the text accompanying them. Donald C. Stockbarger, '19, Assistant Professor of Physics, was likewise coöperative and helpful in preparing "Treating Food with Light."

THOMAS J. KILLIAN, who reviewed Sir James Jeans' book, "The Mysterious Universe," for this issue of The Review, was graduated from the Institute in the class of 1925 and received his master's degree in 1926. Later he received a Ph.D. from Princeton University. He is now an instructor in Physics at Technology and a member of the Research Laboratory in Experimental Physics.



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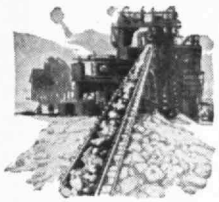
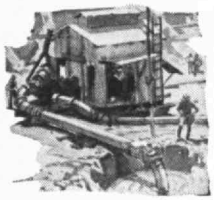
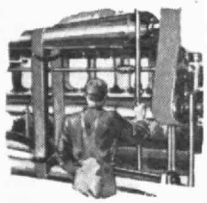


Goodyear Conveyor Belt at the Claremont plant of the Union Rock Co., Los Angeles, California



Goodyear Suction Hose at work for the American Cyanamid Co., Brewster, Florida



Goodyear Cone Belts — made of cord — as specified by the G. T. M. for a New England textile mill

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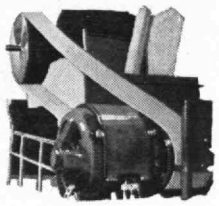
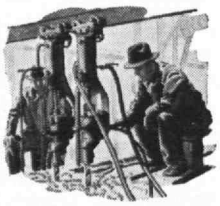
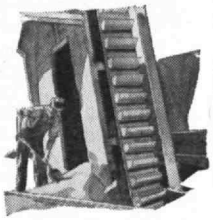


Goodyear Thor Seamless Belt on a heavy machine drive



Goodyear Air Hose operating drills on a construction job in Texas



Goodyear Elevator Belting as applied by the G. T. M. to work in a Minnesota grain elevator

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