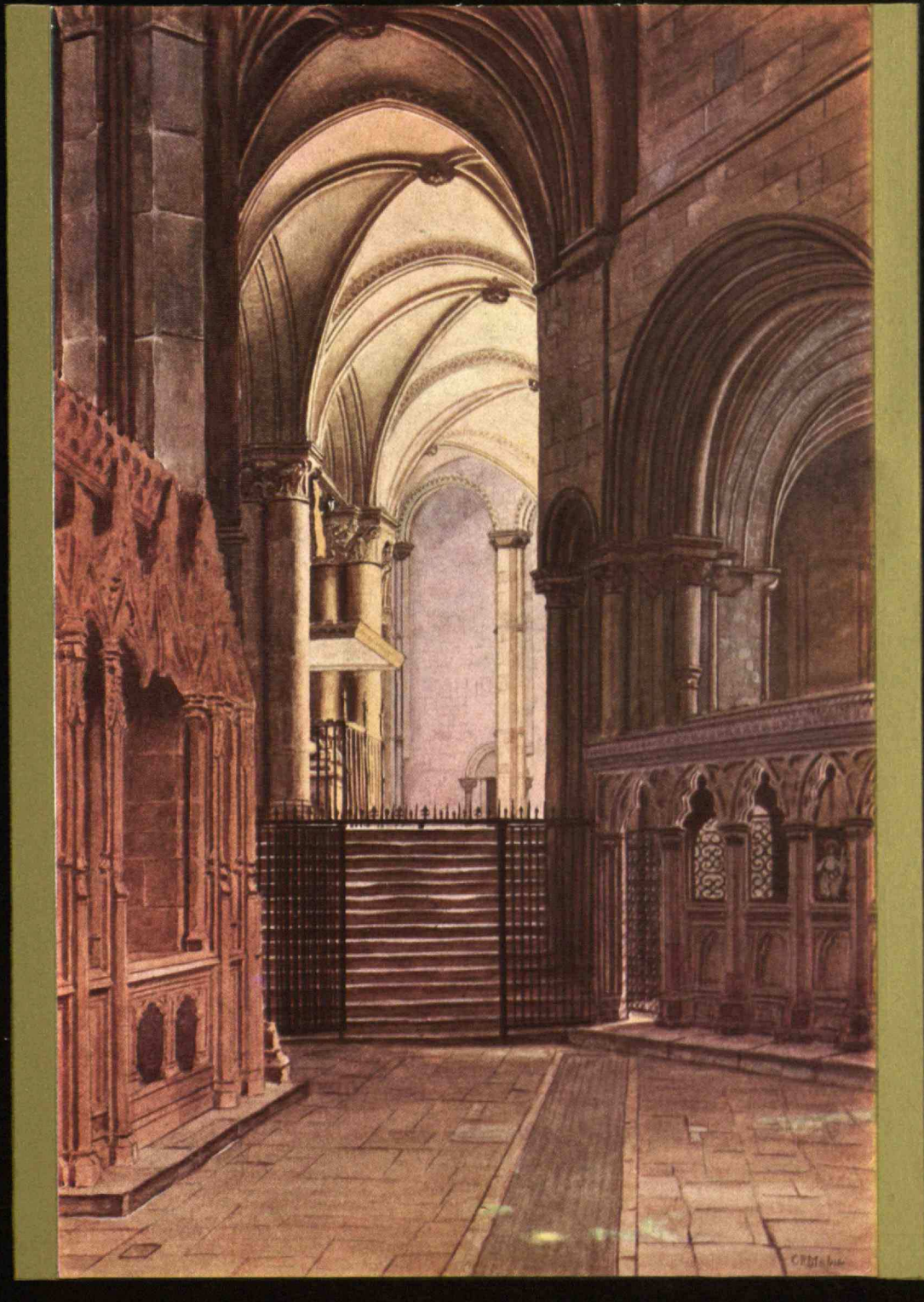
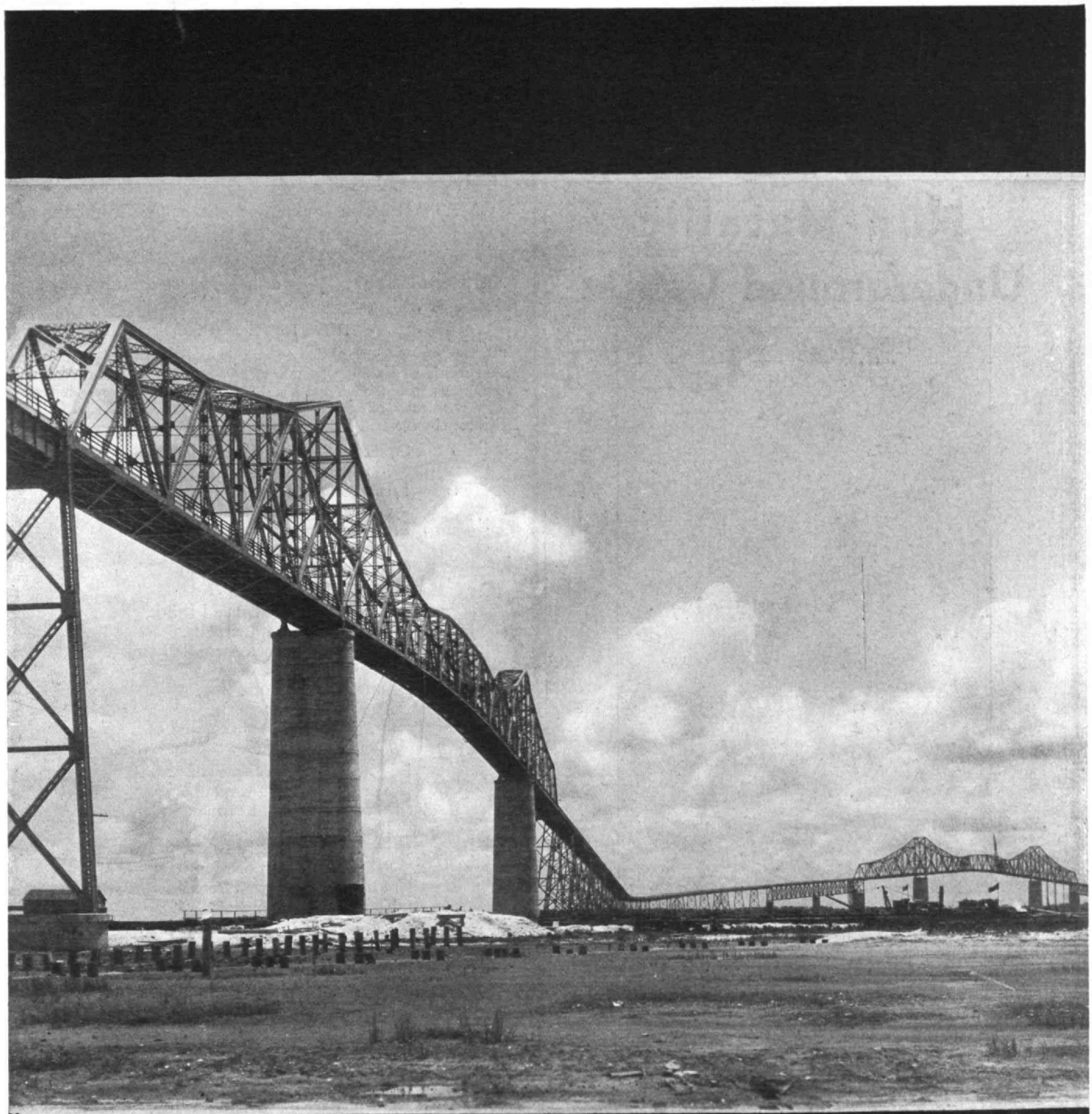
THE TECHNOLOGY REVIEW

APRIL 1931



THE TECHNOLOGY REVIEW, April, 1931. Vol. XXXIII, No. 7. 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.



COOPER RIVER BRIDGE
Charleston, S. C.
Total length over two miles
11,500 TONS OF STEEL
Built by
McClintic-Marshall
Subsidiary of Bethlehem Steel Corporation

DESIGN BY WADDELL AND HARDESTY, CONSULTING ENGINEERS

THE TABULAR VIEW

SOMETIMES the layman is not as gullible as many pseudo-scientists think he is. The following bit of light verse from the Manchester *Guardian*, laughing gently but effectively over an absurd statement, is a point in evidence:

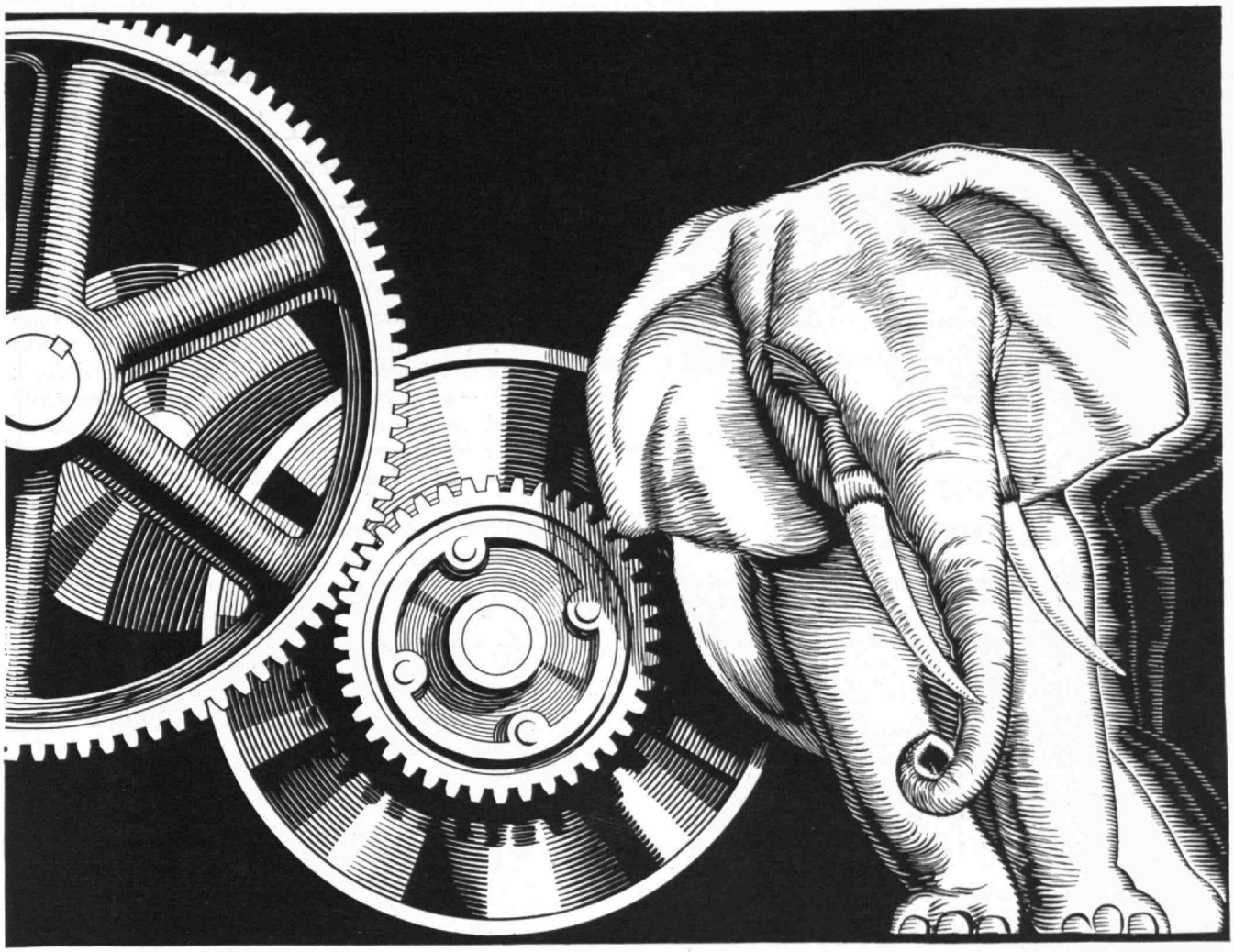
HOW TO BE A HERO

"When a man distinguishes himself in face of great danger or in a sudden crisis he is under the influence of a substance called adrenalin, which flows from the adrenal gland into the blood. Heroes are simply people with enlarged adrenal glands. This adrenalin can be made in the laboratory by the distillation of coal tar." — From a class room lecture.

O, let me like a soldier fall
In some tremendous fight;
I fear no foe or cannon ball —
(Hi! are my glands all right?)
In slothful ease let cowards loll
While I on carnage sup.
(But kindly pass the adrenal
To get my dander up.)
My country, 'tis of thee I think,
My soul with ardour fills.
(One moment, Doctor, while I sink
Your latest dose of pills.)
Be mine the patriotic line,
The true heroic stuff!
(But, gosh! I hope that gland of mine
Is duly up to snuff.)
I do not care how fierce the threat,
Nor how forlorn the hope.
(That is, provided I can get
The right degree of dope.)
Now let the butchery begin,
I shall not flinch or fly —
Ho! drench me with adrenalin
That I may do or die!

But the public has not uniformly acted with such sanity on the great body of distorted information that has been thrown at them about science, particularly endocrinology — the science of the ductless glands. From time to time, The Review has had the privilege of presenting carefully prepared papers on this subject, free from sensationalism and distortion, yet interesting and readable to the layman. "Causes of Misbehavior," presented on page 327, is another article in this series treating of the possible endocrine factors in the behavior problems of childhood. Its author, ALLAN W. ROWE, '01, is Chief of Research at the Robert Dawson Evans Memorial for Clinical Research and Preventive Medicine, an organization formed for systematic study in many branches of medicine. It maintains departments in clinical research, biochemistry, immunology, bacteriology, pathology, physiology, pharmacology, and several of the specialized branches. Under Dr. Rowe's direction research has been conducted along definite scientific lines and the successful results have been applied directly to the study and care of the sick. ¶ Twice before Dr. Rowe has written of different phases of his work at the Evans Memorial Hospital. In July, 1928, he wrote on the functions of the endocrine glands, and in February, 1929, he went on to reveal some of the methods of the endocrinologists. In this issue, he goes yet a step further into the relation of

(*Continued on page 316*)



Brakes on Efficiency?

"A white elephant with the king's compliments"—and the king's grudge was paid off. Every owner of a sacred elephant travels the short road to poverty.

The sacred elephant he dare not sell, nor kill — and its appetite never fails.

Factory "white elephants" are not sacred elephants, although there are more of them. There is hardly a machine shop in the country without one or more — lathe, planer, boring mill, miller or a grinding machine. A machine that doesn't produce work of a quality and at the rate of the more modern types is a liability — a white elephant.

Let's go elephant hunting among the Grinding Machines.

NORTON COMPANY
WORCESTER, MASS.

NORTON

GRINDING & LAPPING MACHINES

THE TABULAR VIEW

(Continued from page 314)

glandular activity and human activity and behavior. ¶ An editorial on the development of biochemistry in the United States in the *Journal* of the American Medical Association (February 21, 1931) is pertinent to this comment as it concerns exactly the sort of work in which Dr. Rowe is engaged. We quote in part: "Physiologic chemistry — or biochemistry, as it has been commonly designated more recently — has long since come of age. The subject has become an important and integral part of the study of medicine and the practice of the art. The special technic of biochemistry has been introduced into clinical diagnosis to such an extent that it competes in prominence with physical procedures and with bacteriologic and immunologic methods of examination and research. A recent writer has remarked that today it is quite safe to state that in the United States there is hardly a university worthy of the name that does not have on its staff one or more competent investigators in physiologic chemistry and a well-equipped laboratory with resources adequate for at least some lines of research in this field. Added to these centers of research are the many special laboratories connected with the larger hospitals of the country where investigations of a chemico-physiologic character are conducted; the many research institutions and foundations with their large endowments, where many biochemists of national reputation are to be found; and lastly, the various government bureaus at Washington with their well-equipped laboratories and trained workers who have contributed largely to the development of knowledge of a chemico-physiologic nature in many directions." At one time, it goes on to say, Americans desirous of gaining knowledge and experience in this work were obliged to go to Germany to study methods. Dr. Rowe himself holds a degree from a German university.

AS AN engineer, GEORGE A. RICKER has encountered many interesting experiences. Perhaps the most dramatic of these was in connection with his work in building the Niagara Gorge Railroad, an account of which is given in his article "Niagara's Wayward Youth." Few people can boast of as intimate acquaintance with this most powerful of waterfalls. Such an enterprise required imagination and daring as well as engineering ability. ¶ Mr. Ricker became connected with this work through two of his clients, Captain John M. Brinker and Hon. Herbert P. Bissell, the promoters of the railroad and afterwards President and Secretary-Counsel, respectively. These men had confidence in his ability to be successful in an undertaking that even conservatives termed rash, and others, more freely spoken, considered a crazy scheme. The money to build with was furnished by a small group of enthusiasts as no orderly financing was possible because almost everyone consulted, including engineers, branded the project as impracticable. In 1901 the roadbed, track and

(Concluded on page 318)

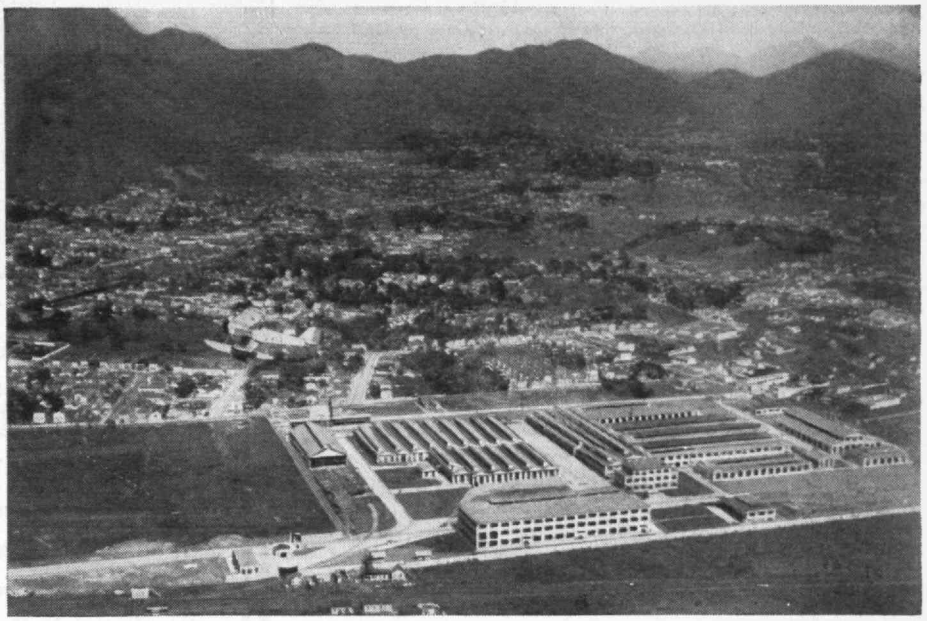
THE TABULAR VIEW

(Concluded from page 316)

equipment were in good shape and over a million and a half tourists saw the wonderful gorge from end to end without a care for the cost or the troubles that had been undergone in making the ride possible. The chief point which Mr. Ricker particularly emphasizes is the possibility of nailing down the Falls where they are.

WILLIAM P. CUTTER is a Contributing Editor to The Review. This month he writes of the proposed development of the Hackensack Meadow Region in his article entitled "The City of Tomorrow." The region in itself is about as unpromising as that through which Childe Roland made his gruesome journey to the Dark Tower in Browning's poem. This territory offers the same challenge to the vigorously persistent engineer of today as did that barren plain to the knight of old. The modern engineer, however, does more than blow a defiant trumpet in the face of opposition as there is in his makeup the unquenchable urge to build. ¶ The city of tomorrow is all planned and ready to build, and it has been made public in printed form in "The Regional Plan of New York and Its Environs." Unfortunately, the Board can do no more than plan for this development as it has no authority to execute such an enormous undertaking — another example of Prometheus Enchained. Mr. Cutter is engaged in research at the Harvard Business School.

THE picture on the cover of this issue of The Review is reproduced from a water color by CHARLES H. R. MABIE of the Institute's Drawing Department. It shows the stairway in Canterbury Cathedral, up which the medieval pilgrims toiled to the shrine of St. Thomas à Becket. The original was painted at the close of a period of foreign study. ¶ Mr. Mabie began his art training as a boy under the tutelage of an older brother, an alumnus of the Institute and a practicing architect in Boston. This was a happy introduction to four years of serious study in the Massachusetts Normal Art School some years later. Following graduation, he spent four years as supervisor of Drawing and Manual Training in the town of Framingham, Mass. Then came the opportunity for study abroad, in either an English or German school. Since his home life had largely been influenced by English traditions, he quite naturally chose a London school; and since his leaning was toward creative and applied design, he chose the Royal College of Art, rather than the Academy. Here, under the guidance of Professor Lethaby and other able men, he was led into the intricacies of artistic design in its application to the industries and architecture. ¶ When the War came, Mr. Mabie returned to America with as much of South Kensington Museum and other parts of Europe, as he had been able to copy and a knowledge which Europe alone could give him. He also returned with a large part of the spirit of the Old World, something which can be felt and lived but cannot be described.



Largest Tramway Car Shops in South America

...recently completed at Rio de Janeiro

THESE great shops for the Rio de Janeiro Tramway, Light & Power Company, Limited, with their 24 buildings and 430,000 square feet of space are unique in their completeness.

Because they are equipped to handle so many manufacturing and repair operations, they place this large utility system in an unusually independent position.

The shops are designed for the following work:

- Maintenance of 1000 tramway cars and buses;
- Construction of new steel cars and buses;
- Repair of heavy machinery, motors and generating equipment;
- Manufacture of power line equipment, many car and bus parts, castings, brake shoes, etc.;
- Manufacture of all bare and weatherproof copper wire required for the system, 850 tons annually;
- Fabrication of substation structures;
- Construction of metal and wood furniture for cars, buses and offices;
- General stores for shops and entire system.

We designed and built the shops in cooperation with our client's organization.

We are prepared to handle construction undertakings anywhere in the world.

UNITED ENGINEERS & CONSTRUCTORS INC.

combining

Day & Zimmermann Engineering & Construction Co.
Dwight P. Robinson & Co., Inc.
The U. G. I. Contracting Co.
Public Service Production Co.
United Engineers & Constructors (Canada) Ltd.
Dwight P. Robinson & Company of Brazil, Inc.
Dwight P. Robinson & Company of Argentina, Inc.

Design and Construct

INDUSTRIAL PLANTS
STEAM POWER STATIONS
HYDRO-ELECTRIC DEVELOPMENTS
RAILROAD WORK
GAS PLANTS
PIPE LINES

Build

APARTMENTS
HOTELS
OFFICE & MONUMENTAL BUILDINGS

UNITED ENGINEERS & CONSTRUCTORS

INCORPORATED

DWIGHT P. ROBINSON, PRESIDENT

PHILADELPHIA NEW YORK NEWARK BOSTON CHICAGO
LOS ANGELES MONTREAL TORONTO BUENOS AIRES RIO DE JANEIRO

MAXIMUM RETURN TO CLIENTS PER DOLLAR INVESTED

AFTER THE

G·T·M·

THE TOUGH JOB GOES SMOOTHLY

THE G·T·M·

Goodyear Technical Man—is bad news for the tough job. His engineering attack is varied. Now it is movement of goods, now of power, now the disposal of waste. Everywhere he bears down on costs and builds up efficiency. He has a hawk's eye for waste, a faculty for improvement. Whether it is movement of materials, air, liquids, or engine-power, by the careful application of Goodyear Mechanical Rubber Goods in Hose, Belting, Molded Rubber Goods, and Packing, he has unkinked many a hard knot. He gets the work out.

Just as the G.T.M. works in the field for the benefit of countless operations, so the Goodyear engineering staff works in Goodyear's vast laboratories at Akron. Scientists as they are, they are also practical men, who keep constantly in touch with the latest manufacturing methods. Often they anticipate needs. In rapid succession, they recently produced Goodyear Emerald Cord Multiple "V" Belting, Goodyear Compass Cord Endless Belting, Goodyear Thor Belting, seamless, and several new types of industrial hose far in advance of ordinary practice.

For interesting data on Goodyear Mechanical Rubber Goods in industry, just write to Goodyear, Akron, Ohio, or Los Angeles, California.

THE GREATEST NAME IN RUBBER

GOODYEAR

BELTS MOLDED GOODS HOSE PACKING