The American Magazine

25 Cents; $2.50 a Year

VOLUME XCII

July, 1921, through December, 1921

THE CROWELL PUBLISHING COMPANY
381 Fourth Avenue
NEW YORK

The American Magazine

December, 1921

JOHN M. SIDDALL, *Editor*

Vol. XCII

CONTENTS

No. 6

PUBLISHED MONTHLY BY THE CROWELL PUBLISHING COMPANY AT SPRINGFIELD, OHIO, U.S.A.

George D. Buckley, *President*; Lee W. Maxwell, *Vice President and General Business Manager*; Thomas H. Beck, *Vice President*; J. E. Miller, *Vice President*; A. D. Mayo, *Secretary*; A. E. Winger, *Treasurer*

EXECUTIVE and EDITORIAL OFFICES, 381 FOURTH AVENUE, NEW YORK CITY, NEW YORK

25c a Copy, $2.50 per Year, in the United States and Canada. Foreign subscriptions, $3.50 per Year.

Entered as second-class matter at the Post Office, Springfield, Ohio, under the Act of March 3, 1879

Entered as second-class matter at the Post Office Department, Canada

Narrow Escapes of a Great Bridge Builder

Most of them were due to somebody's carelessness in some small detail. The qualities Ralph Modjeski values highest in any man are the opposites of negligence and inaccuracy

By Neil M. Clark

UNDER the restless waters of the St. Lawrence River at Quebec, which at that point is two hundred feet deep and a third of a mile wide, lies the relic of a tragic failure. It is a twisted tangle of steel weighing thousands of tons. Year by year it sinks deeper into the mud.

Over the river at the same site is the monument of an extraordinary achievement, the Quebec Bridge, which is the greatest bridge of its kind in the world.

There these two are: the one, a colossal example of taking a little less pains than was necessary; the other, a mighty instance of using the last ounce of care and invention.

The men who built the *successful* Quebec Bridge were picked cautiously from three countries. Canada wanted a commission composed of a Canadian, an Englishman, and a representative from the United States. And she wanted them to be the best bridge builders she could get from those countries.

When these three met in their first conference, it turned out that the Canadian was French, the Englishman was Scotch, and the representative from the United States was Polish! The Polish-American was the only one of the three who remained with the commission until the completion of the mighty task.

He was Ralph Modjeski.

Modjeski is the son of a remarkable woman. His mother, Helen Modjeska, was a famous tragedienne. He came with her to the United States when he was fifteen years old. And in the forty-odd years since then he has bridged, among many others, the mightiest rivers on this continent: the Columbia, the Mississippi, and the St. Lawrence. Some of these he has bridged more than once. And not a few of the bridges have been built in spite of extraordinary difficulties.

The Quebec Bridge, in some respects, surpasses all others built by anyone anywhere. It measures over all, 3,239 feet. It has a clear span between piers of 1,800 feet.

The other bridge which most closely approaches this is the Forth Bridge, across the Firth of Forth in Scotland, which has two sections with a clear span of 1,700 feet each. The famous suspension bridges across the East River in New York are considerably shorter. The Brooklyn Bridge, for example, has a clear span of 1,595 feet; the Manhattan Bridge, 1,475 feet; and the Williamsburg Bridge, 1,600 feet.

Two huge locomotives, followed by trains weighing five thousand pounds to the foot, can cross the Quebec Bridge at the same time on the two tracks, without causing a perceptible strain.

These figures suggest some of the technical difficulties that had to be overcome. But Modjeski has not built some of the greatest bridges on this continent without coming to the conclusion that, besides the technical problems, there are—in bridge building as in everything else—human problems, which are of even more importance. The qualities that Modjeski has learned to value most in men are the opposites of negligence and inaccuracy.

Bridge building is no parlo. task. It calls in the first place for the highest degree of care in planning; and the process of construction demands a large measure of clever craftsmanship, muscle, and quick thinking. As the great girders of a bridge under construction swing out over the water, which is often dangerous and deep, a careless hand or eye, or the faulty planning of a careless brain, may jeopardize not merely a single life, but many lives.

The first Quebec bridge, when it fell into the St. Lawrence, carried to death eighty workmen. Modjeski has more than once been in the near neighborhood of death for himself. He has acquired his distaste for negligence partly through situations in which his own life has been endangered.

On one occasion he was inspecting a great bridge over the Mississippi, which was nearing completion. The work had progressed for months, vast girders of steel being flung out from either bank to approach each other in midstream, where they must meet with perfect accuracy, aligning within the fraction of an inch.

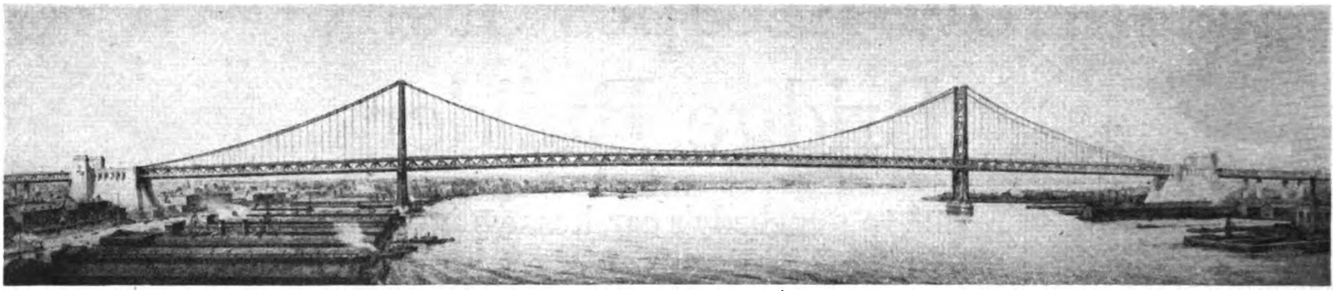
A gap of only twenty-five feet remained. It was an exciting moment, because the test of months of work and of millions of dollars spent would come when the final girders were lowered into place.

If they fitted perfectly—success! If they did not fit, by ever so little—failure!

A plank had been thrown

RALPH MODJESKI

Born in Poland in 1861, Modjeski came to this country in 1876 with his mother, the famous tragedienne, Helen Modjeska. Later he graduated, at the head of his class, from a technical college in Paris. He has been consulting engineer at Chicago for the past thirty years, and has designed and built, or has been the chief engineer of, many bridges that have presented difficult and unusual problems. Among the rivers he has helped to span are the St. Lawrence, Mississippi, East River (at New York City), Columbia, Willamette, Crooked River, and so on. His latest and greatest bridge—now under way—will connect Philadelphia and Camden, New Jersey. Mr. Modjeski lives in Chicago



Artist's drawing of the proposed Camden-Philadelphia Bridge, which when completed will have the longest suspension span in the world. The cables are to be 30 inches thick, with 16,500 wires in each. It is 380 feet from the water to the top of the main tower. The bridge is designed to carry two rapid-transit tracks, two street-car tracks, two footpaths, and a wagon road

across the twenty-five-foot gap, and Modjeski was standing on this plank watching the progress of the work. The yellow waters of the river swirled many feet below.

Directly in front of Modjeski was a hand car with a connecting pin on it. The pin was a round mass of steel weighing nearly a ton! It was about to be picked up by the crane and set in position. Modjeski, in the meantime, was holding to the edge of the car with both hands for the sake of safety.

At that moment, because somebody had been negligent in one little detail, the huge pin began to roll. And it rolled toward Modjeski! It was impossible for him to get out of the way. As the pin came nearer to him, he had to release his hold on the car to avoid having his hands crushed. The pin rolled off the car and crashed through the plank. Plank and pin dropped together into the waters far below.

Modjeski had barely time to grab the edge of the car after the coupling pin left it. And there he hung, suspended over the Mississippi, until the workmen pulled him in.

"I was at least due for a ducking," he says with a smile.

Is it any wonder that Modjeski, with more than one experience of this sort behind him, has a distaste for negligence in every shape and form? In this case not only was his life endangered: it was also necessary to replace, at a cost of many dollars and expensive delay, the lost pin.

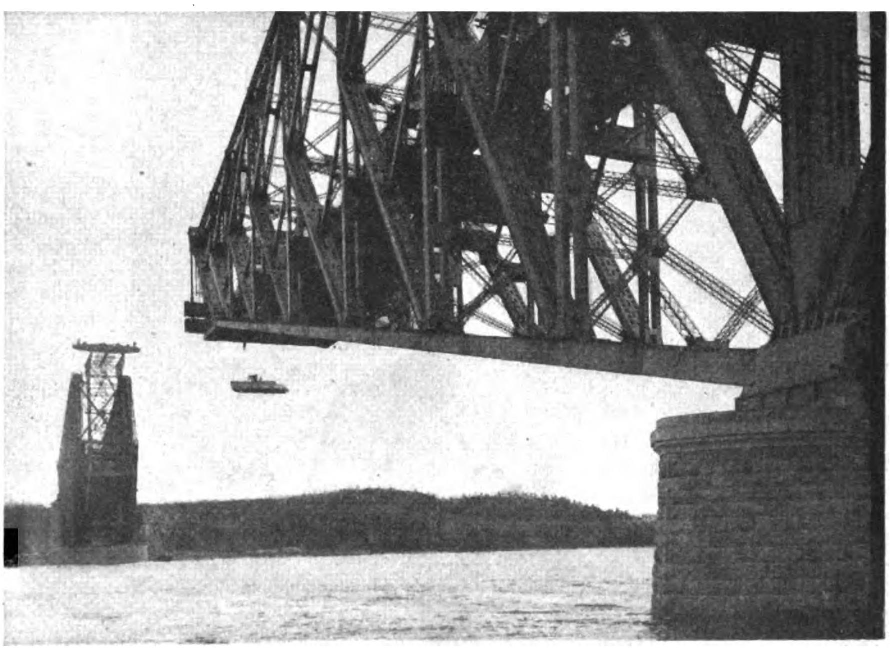
At another time, and on another bridge under construction, Modjeski was standing on another plank, talking with his operating engineer. Above them rose the steel framework of the bridge. The riveters were at work directly over their heads. Less than a foot of space separated Modjeski from his engineer.

In the midst of their conversation, something shot between them and lodged in the plank. An instant *later*, somebody aloft shouted needlessly:

"Look out below!"

Examination showed that the object which had just fallen was a sharp-pointed iron, a foot and a half long, which the workmen used to clean rivet holes.

Again, somebody had been negligent. Only by a miracle of chance had the iron, dropping like a plummet and with the force of a bullet, failed to kill or seriously to injure one or the other of the two men.



The Quebec Bridge when it was under construction. This bridge has the longest span in the world, 1,800 feet in length. The span of Brooklyn Bridge is 1,595 feet long

"NEGLIGENCE," says Modjeski, "can be avoided by anyone who is willing to school himself to take pains. Not a very severe schooling is needed either. I analyze negligence, in most cases where it occurs, as merely the habit of thoughtlessness, due to failure to appreciate the serious consequences of even the slightest slurring of effort. The mind sleeps, the eye fails to see, the hand slips.

"Not always are the consequences of negligence such as to endanger life, of course. But always the consequences exist, and sometimes they seem out of all proportion to the degree of negligence. Delays occur, which are expensive; or materials are lost, and they, also, are expensive; or the results appear in some other less measurable way. No man who neglects the little details of his job, no matter what the job may be, can expect to go on to a bigger job and do it better. The foundations of a successful career—as well as those of enduring bridges—cannot rest on quicksands.

"I said that a negligent man can correct this fault. I remember an inspector who, a number of years ago, was negligent. We began to receive letters from clients which convinced us of that.

"This man, it turned out, simply had not taken enough thought about his work. He had not realized the necessity and importance of exact care. When the letters from clients were shown to him, he took himself in hand, and from that time forward there was no serious complaint against him on the score of negligence.

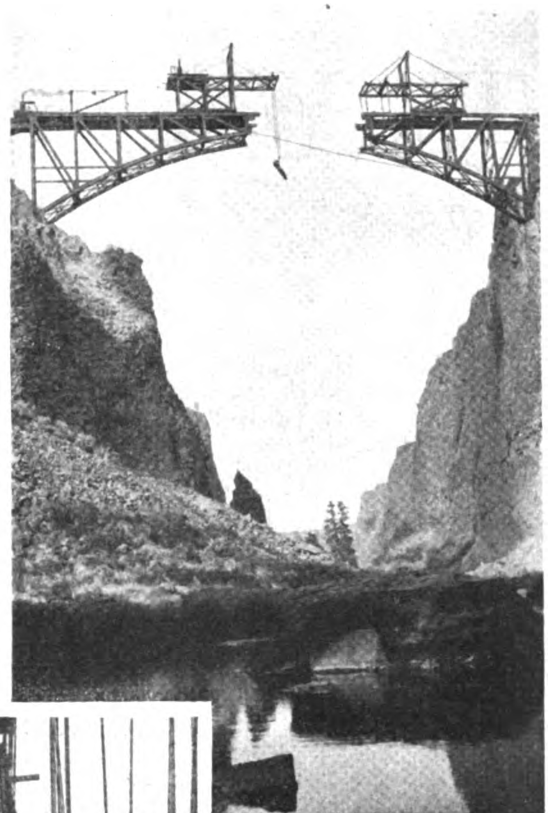
"A man may be inaccurate for the same reasons that he is negligent. That is, he may simply not take enough care. In other cases, the reasons for inaccuracy may be quite different."

Accuracy, as Modjeski understands it, was exemplified in the construction at Quebec. That bridge has two huge cantilever arms which reach out from either bank of the river and support between them the suspended center span, which alone weighs about five thousand tons.

This center span was erected complete on an inlet of the St. Lawrence a few miles from the site of the bridge. It was set up on barges, which were so arranged that there was no interference with the work during tide changes; which, by the way, are considerable at Quebec.

When the span was completed and the cantilever arms were finished to receive it, the barges were towed upstream with the span on board. Special equipment had been prepared at the bridge, and the span was hoisted into place. Then the coupling pins designed to fasten the two cantilever arms to the two ends of the span were slipped in.

So accurately had the parts been planned and machined, that every pin was driven home without a hitch. In other words, these huge steel parts, some



Two views of the Crooked River Bridge during construction. The river runs through a gorge 350 feet deep. In the accompanying article, Mr. Modjeski tells how the men became so careless of danger that they would "coon" across a 30-foot gap on a 4-inch pipe. Walking a substantial plank, as they are doing here, seems quite risky enough

The bridge across the Mississippi River at Thebes, Illinois. It was on this bridge that a huge pin, weighing almost a ton, rolled off the hand car and nearly knocked Modjeski into the river

of them weighing over a hundred tons and machined in separate places, had been practically perfect. There was not the deviation from design of even so much as a perceptible fraction of an inch.

An achievement of this sort appears stupendous. It is. But the total is merely the result of a great number of *small* jobs, each executed with unfailing accuracy according to a master plan. Even a slight deviation from exact measurements would prove disastrous in a structure like this.

"IT IS the same," says Modjeski, "with everything. It happens, to be sure, that the results of accuracy or of inaccuracy can be measured a little more plainly in the building of bridges than in most other affairs.

"But any achievement depends absolutely on how well each little necessary job is done. That is true, whether the job is a bridge, on which perhaps thousands of men are engaged, or some individual task which a man does entirely by himself.

"A tiny inaccuracy, or slighting the work at one point, may endanger the whole. It follows that nothing is ever 'good enough' unless it is *right,* according to the standards by which it is to be judged. Of course nobody would argue that a homemade garden walk must be as solid as a city pavement. The standards in these two cases are largely different.

"Any man who is inaccurate simply because he has not taken the trouble to form the habit of accuracy can easily correct his fault. But I have known a few men who are apparently inaccurate by nature; and I doubt if anybody would have much success in attempting to cure them. Probably they cannot cure themselves. Some of them are so inaccurate that their inaccuracies become farcical.

"I remember particularly an inaccurate engineer. We were building a railroad bridge across a great river. In the course of some of the preliminary surveys I was informed by this engineer that the water along the north bank of the river was four feet higher than along the south bank. He was positive of this. He said he had the records of his instruments as proof.

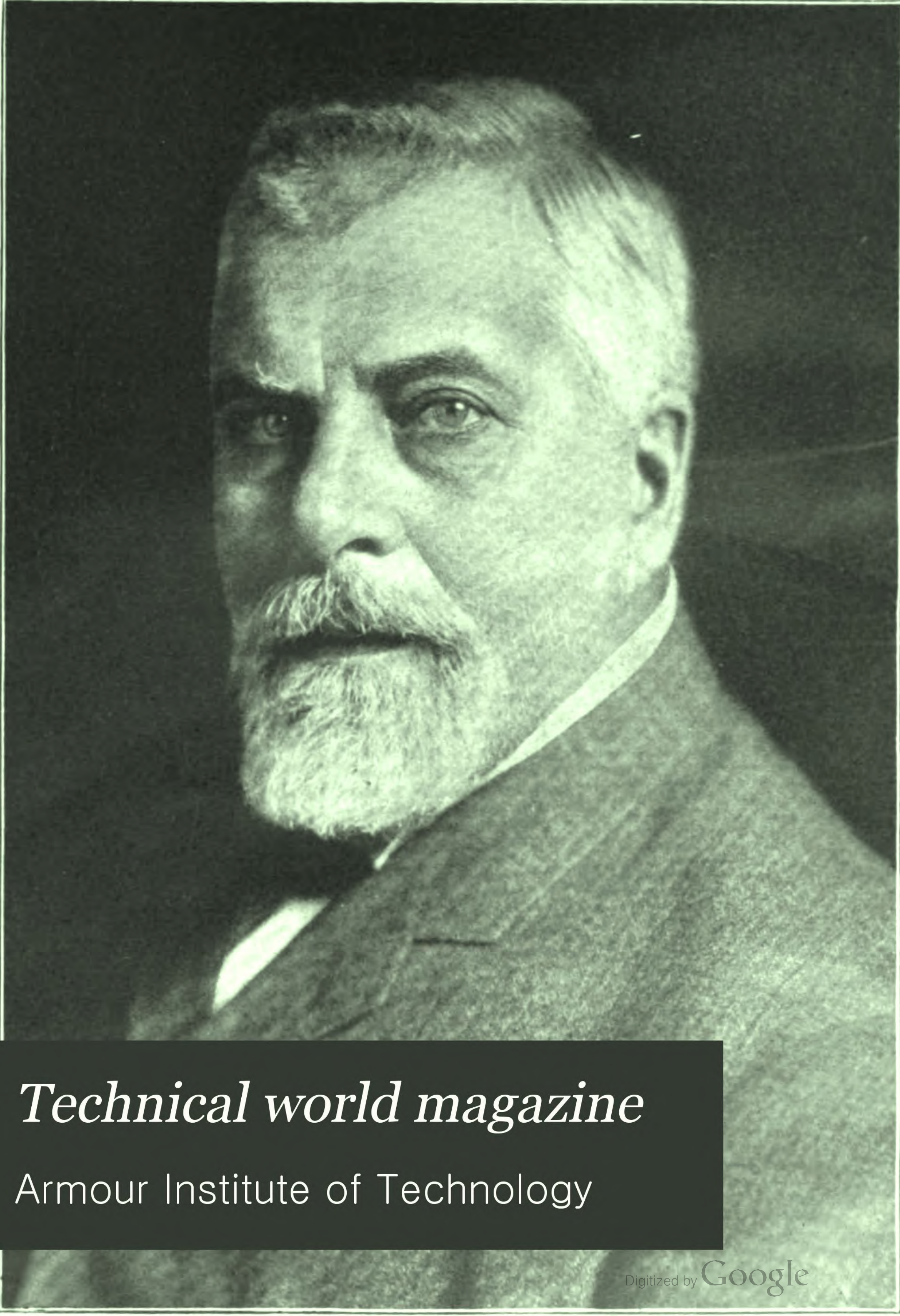
"OF COURSE such a statement is ridiculous. But the engineer accounted for the difference in level by a specious argument: he said it was due to a difference in the velocity of the current. He claimed that the water along the north bank ran so much more swiftly that it piled itself up four feet higher than the sluggish water along the south bank!

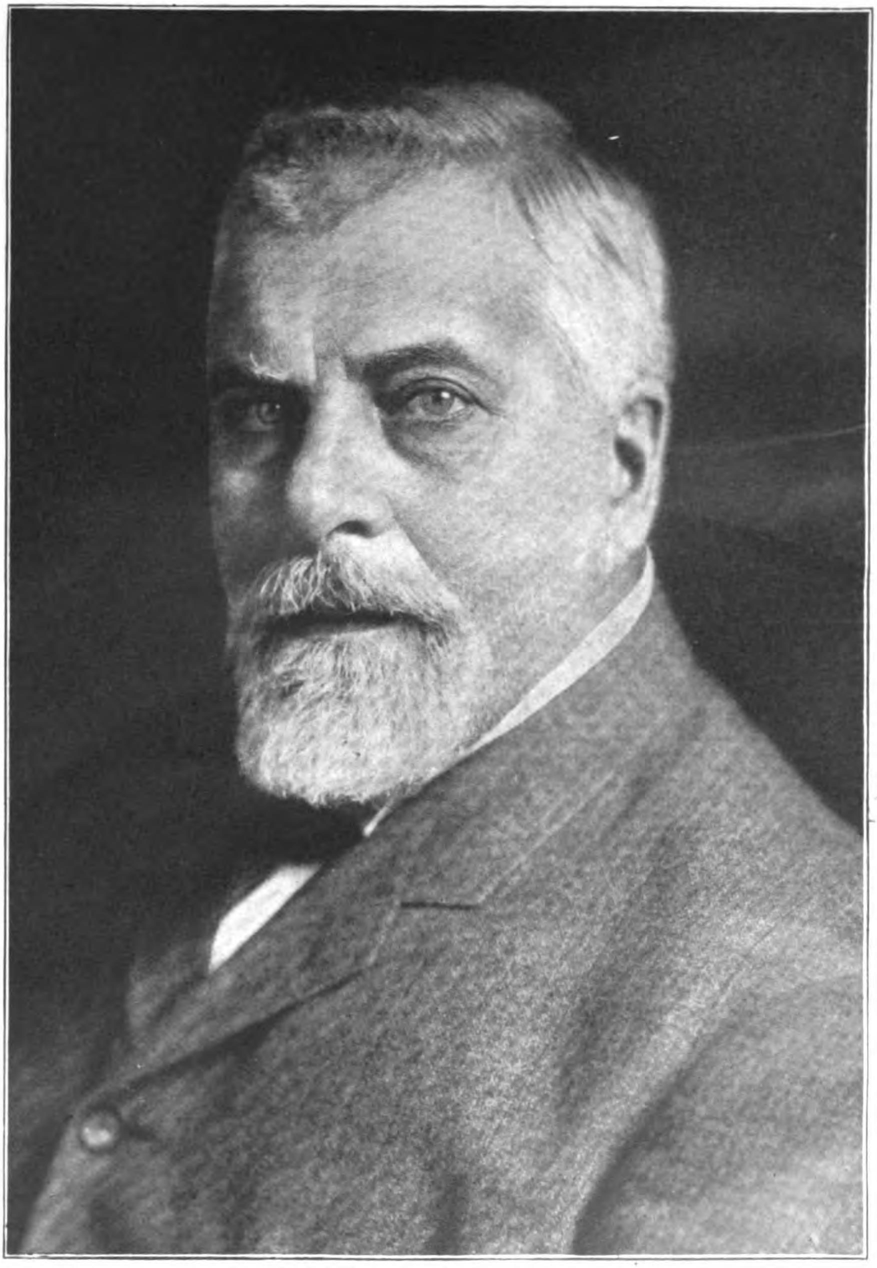
"A few inches might be accounted for in that way. But not four feet!

"Some mighty costly experiments have been supported in this way by people who construct elaborate theories to support false premises. I suppose it originates in the wish of a man who has made a mistake, and knows that he has made it, to 'save his face.' But I have found the quickest and safest way is to admit the error, and get the right answer as speedily as possible.

"'Repeat your measurements,' I said to the engineer I just mentioned. 'It is just possible that some slight error may have crept in!'

"Of course if (*Continued on page 106*)





RICHARD TELLER CRANE.

FOUNDER AND PRESIDENT OF THE CRANE COMPANY, CHICAGO, ILL.

(See page 96)

The Technical World Magazine

Volume IV SEPTEMBER, 1905 No. 1

How Eclipses are Predicted

Marvelous Precision and Absolute Foreknowledge of Astronomical Science

By PROFESSOR DAVID TODD, Ph. D.
Director, Amherst College Observatory

THAT unique New England poet, a compound of daring, whimsicality and genius, once wrote:

> "Eclipses are predicted,
> And Science bows them in."

True enough at the time Emily Dickinson jotted down these lines, her statement has become increasingly accurate during all the years following. As long ago as the days of Thales, in the sixth century before Christ, a periodicity in the return of eclipses had been discovered, so that their appearance could be roughly foretold. Probably first noted by the Chaldeans, the greatest astronomers of antiquity, it is not unlikely that the Chinese had also found general methods of prediction as early as 2000 B. C., half-fabulous incidents of their astrologers perhaps tending to support this theory.

But from the first accurately foretold eclipse by Thales, 585 B. C., so closely as "this very year in which it did actually occur," to that of August 30th, 1905, methods, discoveries, and precision have steadily advanced, until now it is possible to give all the circumstances of coming eclipses—exact locality, duration, and instant of occurrence—for many years ahead

Periodic Occurrence

The period or round of eclipses that these early astronomers employed is still useful to us. It is called the Saros, and its length is 6,585⅓ days, or 18 years 11⅓ days. Usually 41 eclipses of the sun will happen in this period, and about ten of them will be total ones. A Saros may be taken as beginning at any time, and the nature of the eclipses occurring in any one period changes but slowly; so that once we have the time and place and circumstances of all the eclipses in one Saros, we can predict all those of the next half-century with confidence.

But not with great accuracy, for there are too many variable conditions entering into the problem of the celestial machine.

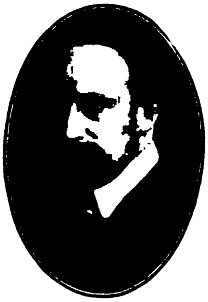
Operation of the Solar System

The cosmos of the solar system is but a vast mechanism, and eclipses are but the inevitable phenomena of its perfect working. Compare it with the automatic contrivances of a modern Hoe printing

"Which Branch of Engineering Shall I Take Up?"

No. III. Bridge Engineering—An Interview with Ralph Modjeski, Civil Engineer, Chicago

By JOHN L. RAY


RALPH MODJESKI.

Within recent years engineers have specialized along many different lines. The result has been the development of as many practically distinct branches of the profession. Doubtless there are young men, who, having decided that engineering shall be their life work, are hesitating as to which branch they shall take up—Civil, Mining, Mechanical, Hydraulic, Chemical, or any one of a dozen other divisions.

The series of articles under the above head—of which this is the third—is intended to help them come to a wise and discriminating decision. The articles will be based on interviews with eminent engineers, each of whom will set forth the advantages and drawbacks of his own particular specialty. In the present instance, Mr. Ralph Modjeski tells of the situation in bridge engineering. Mr. Modjeski, who is a son of the famous Polish tragedienne, Helena Modjeski, was, for some years, bridge engineer for the Union Pacific Railroad Company. He is now, perhaps, the leading consulting bridge engineer in the country.

"IT is my belief that bridge engineering at the present time is not the most profitable division of engineering for a young man to choose. The supply is greater than the demand."

This is the opinion of Ralph Modjeski, the consulting bridge engineer. It is not a pessimist's view of his own profession. Temporary conditions, he believes, have made the occupation of bridge engineer likely to be less lucrative than other branches of civil engineering. He agrees with Lyman G. Cooley, with whom an interview was printed earlier in this series, that hydraulic engineering presents greater opportunities because of its development into constantly widening fields.

"What I say applies to the general average of young men coming from a technical school," he explained further. "For the exceptionally brilliant there is the same place in bridge engineering that there is in every other profession or occupation. It is the young man without especial predilection for bridge engineering, who, I believe, can find more profit in some other division of civil engineering at the present time—at least until the demand for bridge engineers has caught up with the supply which is being furnished."

These conclusions came at the end of an interview in which Mr. Modjeski sketched some of the details of bridge engineering as it is to-day, treating of the relation which the work of the consulting engineer bears to the shop-produced work now encroaching on the field formerly held exclusively by him.

"Shop work comes more every year to be a factor in bridge engineering," he said. "It might be said now that a railroad company, for instance, can order a bridge as it can order a locomotive. In the latter case it would order a certain tractive power and possibly a certain speed. The gauge, being standard, would be pre-determined.

"In the case of a bridge, the conditions being determined, the order might be filled much as the order for the locomotive was filled. This would depend on conditions. Shop work cannot supplant the work of the consulting engineer entirely, but it is growing more and more to affect his occupation.

"Railroads are adopting the plan of having their own staffs of engineers. The chief engineer has under him his special assistants, one of whom will be his chief bridge engineer. The latter will supervise the work of the shops; and, unless the case is one of exceptional importance, there may be no place for the special consulting engineer in the whole process of erecting a railroad bridge.

"The same course is likely to be followed in work done for municipalities. The city engineer will supervise the work of the shops, and the bridge will come from the shops, and go up, without the assistance of the special consulting bridge engineer.

"In spite of the facilities which are offered for securing shop-built bridges, the consulting engineer will find his place in work which is not done under the supervision of a staff engineer. I do not mean to intimate that all bridge companies are dishonest, but it will be found that their work has to be watched. There is the inclination to put either too much or too little material in the work—too little if the contract is for a lump sum, and too much if it be otherwise. Unless the corporation buying the bridge have its own engineering department, the consulting engineer will come into the work sooner or later to supervise the plans. If the bridge building be in his hands from the start, his first duties are field duties—to select the site for the structure, if that be not already determined on, to determine the length of the spans, and to build the foundations.

"As an illustration of the difference in conditions which may permit or forbid shop work in bridge building, one may compare the bridging of the Chicago river with the bridging of a stream in the extension of a railroad into practically unopened country. The conditions in the case of bridging of the Chicago river are known; a bridge company, under the supervision of the City Engineer or the Drainage Engineer, can put the structure up. In the latter case, however, the conditions are unknown, and they have to be determined by the consulting engineer in active field work, taking into consideration all the questions of foundation, spans, and assembling."

Mr. Modjeski was asked to what extent invention had an opportunity in bridge engineering.

"Only to a limited extent," he said, "and not to a very profitable one. The patents for "lift" bridges are held by the bridge companies which make a specialty of such work. Occasionally an engineer holds a patent; but in the majority of cases, if invention be necessary to meet some special condition, the engineer does not patent it, but allows it to become public property.

"The patent for the aërial transfer bridge at Duluth is held by a Frenchman. He had erected one before in France, and the conditions at Duluth made it necessary to erect another there. It is not likely that his patent will prove valuable to him in the United States. The necessity for this type of bridge is not apt to be found often enough to make his invention a valuable property."

This Duluth bridge—which is mentioned merely as an illustration of the invention at times necessary in bridge building—is the only one of its kind in America, although there are two in Europe and one in Africa—one across the Seine at Rouen; another at Port Egalité, Spain; and the third at Bizerta, Tunis, the second and third being across arms of the sea.

This aërial bridge, transfer bridge, or ferry, as it may variously be called, is a good example of the product of engineering imagination in action. The necessity of spanning a water thoroughfare—in the case of Duluth, it is a ship channel—without interfering with navigation, and where a draw or lift bridge would not be permitted, is met. The spans rise 185 feet above the water line, and the lowest truss clears the channel by 135 feet. The distance spanned is 381 feet.

Passengers, who at Duluth had been using ferryboats, are now swung across this 381-foot channel in a suspended car which travels twelve feet above the water. This car has a capacity of sixty-five tons, and is timed to cross the channel in one minute and a-half.

The United States War Department had refused to grant permission for the construction of a drawbridge, and Duluth presented an engineering problem of some dimensions, which was solved by the use of an idea originated by the French engineer in dealing with similar conditions at Rouen.

Mr. Modjeski predicts that, in time, a development of bridge building which has not yet come in this country will change the character of the product.

"We have not reached this stage of development yet," he explained, "although some of our bridges have combined beauty with utility. For the most part we have been satisfied with utility, and reasonably. Take the Chicago river bridges. They certainly are not ornamental; but consider how out of place an ornamental bridge would be in their surroundings.

"The first necessity is to ornament and beautify the surroundings, and then you can have ornamental bridges. In the case of the Chicago river it will be generations at least, before the river-front conditions are radically changed. For that reason the new bridges which have been erected have been designed simply to meet the utilitarian needs of a heavy traffic.

"At Rush street, there is a possibility of improvement in surroundings, and the proposed plans for a new bridge at that point have recognized this by providing for ornamentation.

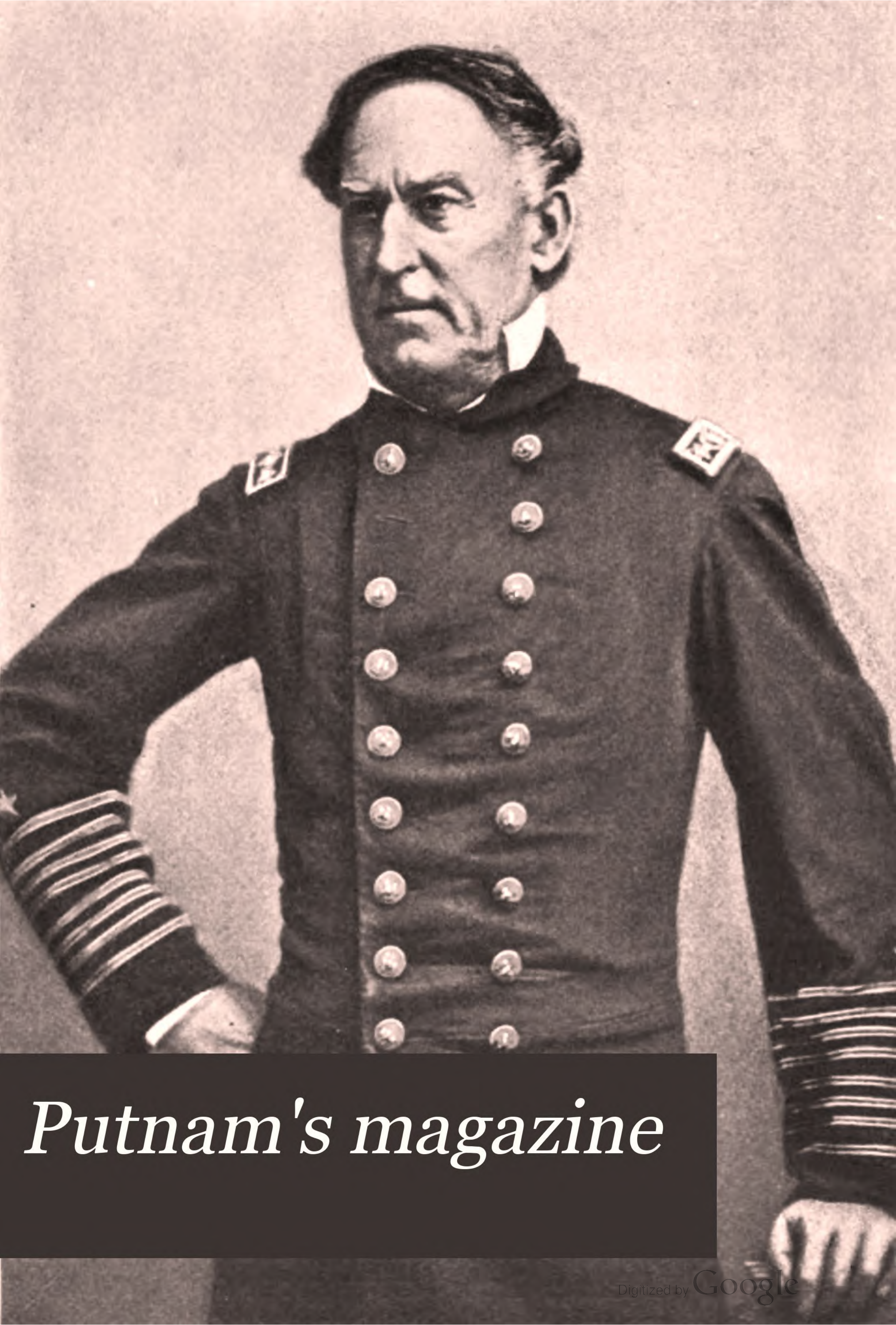
"This development will come slowly in American bridge building, until finally we shall be building as the Europeans build—with a view to beauty as well as utility. To some extent this will have its effect on the profession of bridge building. The bridge engineer will be required, not only to meet the engineering requirements and solve the engineering problems, but he will have to create a work of art in bridge architecture.

"For the present, however, I believe that a young engineer will do best to turn his attention to some other branch of engineering. Hydraulic engineering offers great opportunities in connection with irrigation, sanitation, water supply, and waterway development. This and other branches of civil engineering are progressing and developing. Bridge engineering is not, to any material extent."

The Farmer's Blessings

NONE can describe the sweets of country life
But those blest men that do enjoy and taste them.
Plain husbandmen, tho' far below our pitch
Of fortune plac'd, enjoy a wealth above us,
To whom the earth with true and bounteous justice,
Free from war's cares, returns an easy food;
They breathe the fresh and uncorrupted air,
And by clear brooks enjoy untroubled sleeps,
Their state is fearless and secure, enrich'd
With several blessings, such as greatest kings
Might in true justice envy, and themselves
Would count too happy, if they truly knew them.

—F. May.



Putnam's magazine

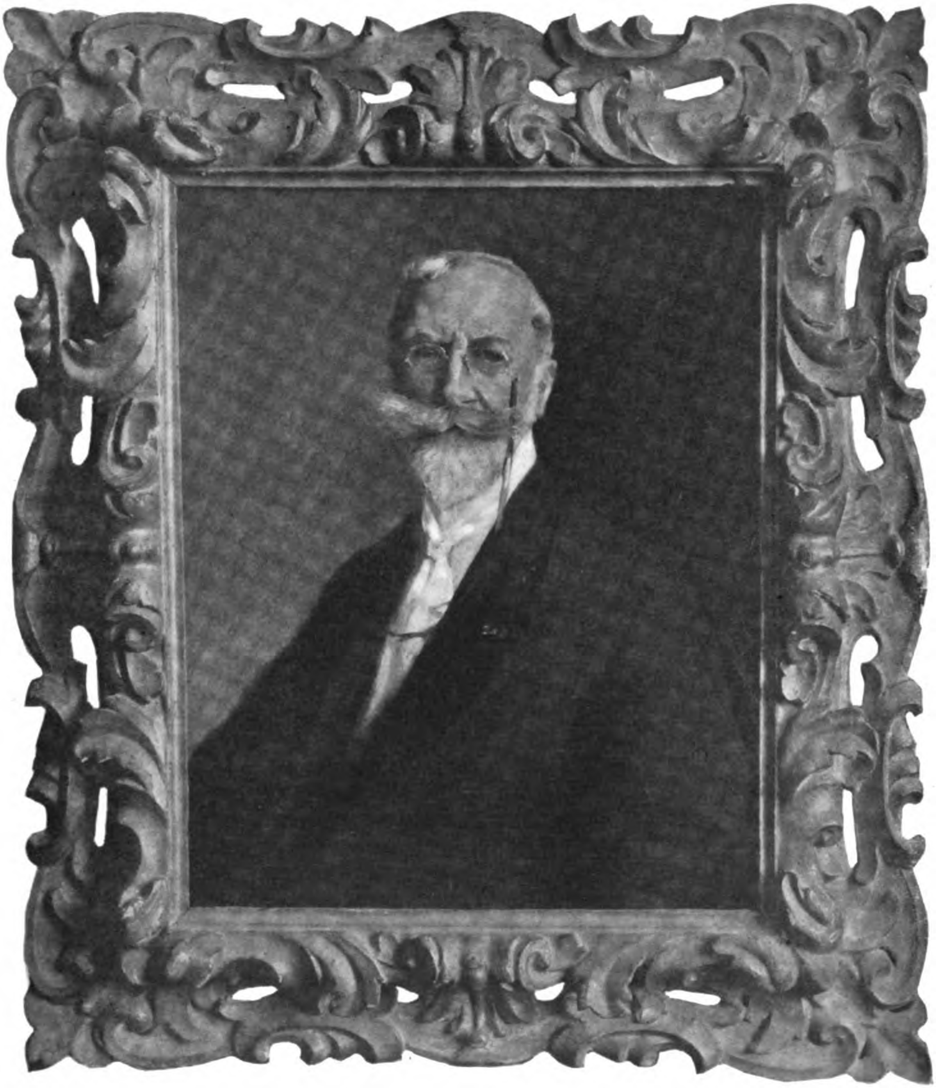
PUTNAM'S MONTHLY AND THE READER

A Magazine of Literature, Art and Life

VOLUME V.

OCTOBER, 1908—MARCH, 1909

Published by
G. P. PUTNAM'S SONS
The Knickerbocker Press
New Rochelle New York



WILLIAM M. CHASE
From the painting made by himself for the Uffizi Gallery

It seems only a little while ago that Mme. Modjeska stopped playing Juliet, as she had always said she would do when she became a grandmother. Yet she now has four grandchildren, and one of the two young men is old enough to have voted and got married this year—a fact which gives a misleading impression as to the grandmother's age. The young gentleman's father—the famous actress's only son, Ralph Modjeski of Chicago,—is one of the most distinguished bridge-builders of America. He was born at Krakow, Poland, in 1861, and came to this country with his mother at the age of fifteen—Anglicizing his name, so to speak, in order to make it possible for Americans to pronounce it, which they would hardly have attempted to do if he had retained the original spelling, Modrzejewski. Mr. Modjeski studied his profession at perhaps the best-known of all engineering colleges, the Ponts et Chaus-

RALPH MODJESKI

sées, Paris, where he graduated, with honors, at the head of his class. In 1885 he married his cousin on his mother's side, Miss Félicie Benda, and since 1892 has been a successful consulting and practising engineer, having built railway and other bridges over many American streams. For some time he was President of the Western Society of Engineers.

Mr. Modjeski, by the way, has recently received a distinguished professional compliment, in his appointment, by the Canadian Government, as one of the international committee of three engineers to reconstruct the bridge across the St. Lawrence, at Quebec, which fell into the river, some time ago, while yet unfinished, though millions of dollars had been spent on its construction. The other two members are Maurice Fitzmaurice, designer of the great Assouan Dam on the Nile, and H. E. Vautelet, a French-Canadian, Chairman and Engineer-in-Chief.

If women were trees, it would be a simple matter to determine their age by the number of their rings; but as they are not, those who are curious on the subject may be interested in knowing that Professor Charles Henry, aided and abetted by X-ray photography, has examined the bones of many men, women and children, and has discovered that up to a certain age (about thirty to thirty-two years, when the height and weight of human beings normally reach their maximum) the density of the bones increases; that afterwards, until the age of about forty-five, it decreases; and that there is a further diminution of density some twenty years later, or at the age of threescore and five. Ever since Charles Lamb, it has been considered unpardonable to look a gift-horse in the mouth, or a lady's age in the parish register; and hereafter anyone who attempts to take a Roentgen-ray photograph of a lady's hand will be under suspicion of incivility. It is the percentage of mineral salts in our bones that determines their density, it seems, and according as they show light, or dark, or medium gray, in an X-ray photograph, we are young, or old, or "of a certain age."

I reproduce from the Kamloops *Wawa* a setting of the Marseillaise in shorthand, the characters representing the words as they appear when translated into the Chinook language. Why the French national song should be called the "Marseillaise du Whisky" is one too many for me. Possibly whisky means something different to the Chinook Indians from what it does to Eng-

Historical review of Chicago and Cook county and selected biography

Arba Nelson Waterman

HISTORICAL REVIEW

OF

CHICAGO AND COOK COUNTY

AND SELECTED BIOGRAPHY

A. N. WATERMAN, A. B., LL. D.
EDITOR AND AUTHOR OF HISTORICAL REVIEW

VOLUME II

ILLUSTRATED

THE LEWIS PUBLISHING COMPANY
CHICAGO NEW YORK
1908

:endent of the city telegraph, and when the department of electricity was organized, became city electrician, serving in this capacity until 1905, when he was appointed electrical engineer in charge of the water power development for the drainage board. As city electrician Mr. Ellicott made his greatest record in his able development of the municipal street lighting plant, which, under his administration, more than quadrupled.

Mr. Ellicott has had a leading connection with various American expositions. When the great Ferris wheel was erected at the World's Columbian Exposition he furnished the only feasible plan for its practical lighting. In November, 1903, Mr. Ellicott was appointed chief mechanical and electrical engineer of the Louisiana Purchase Exposition at St. Louis, the city of Chicago having given him leave of absence from Chicago. In that position he designed and superintended the entire electrical and mechanical work of the exposition.

At the present time Mr. Ellicott is engaged in an active and extensive business as a general electrician. He is a leading member of the Western Society of Engineers, American Society of Mechanical Engineers, National Association of Stationary Engineers. In politics he is a Democrat; is a K. T. Mason, and a member of the Union League, Exmoor and Athletic clubs.

Mr. Ellicott's wife, to whom he was married April 26, 1898, was formerly Miss Minerva Ellsworth, of Milwaukee, Wisconsin, and two sons, Chester C. and Ernest E., were born to their union. The family residence is at No. 1206 Winthrop avenue.

RALPH MODJESKI.

Ralph Modjeski, son of Gustav and Helena Modjeski, is one of the most famous bridge engineers in the United States, his mother being the tragedienne of world-wide fame. Like his wonderful mother, he is a native of Poland, born January 27, 1861, the family name, which was Modrzejewski, being changed to its present form for purposes of American naturalization. It is quite remarkable that mother and son should have become eminent in such diverse professions.

Mr. Modjeski received his professional education in Paris, at the Ecole des Ponts et Chausees, where he spent four years of hard study, graduating in 1885 with the degree of C. E. and at the head of his class. He first came to the United States with his mother when fifteen years of age, but after the completion of his studies in

Paris returned to Poland to marry his countrywoman, Felicie Benda. He was soon busy at his specialty and commenced to acquire a reputation as assistant engineer of the Union Pacific bridge over the Missouri, at Omaha. He was thus employed in 1885-87, and later was stationed as shop inspector at Athens, Pennsylvania, in the examination of the superstructures for various bridges, being in the employ of the firm of Morison & Corthell. Until August, 1888, he was chief draughtsman in the New York office of the same firm, and later with Mr. Morison at Chicago until November, 1890, when he was assistant engineer and chief inspector of the bridges at Memphis, Tennessee, and Winona, Minnesota. Since 1892 he has been consulting civil engineer, with headquarters in Chicago. He had designed and built the new government bridge at Rock Island, Illinois; the superstructure of the Bismarck (N. D.) bridge, and structures for various railroads, such as the Northern Pacific, Monon, Illinois Traction system, and the C. & M. E. At present he is engaged in the construction of two large bridges at Portland, Oregon, a bridge over the Mississippi river at St. Louis, besides various other smaller structures. Mr. Modjeski has been consulting engineer for the city of Chicago and for the Chicago Sanitary District in the building of bascule bridges, and was employed by the United States government to design and construct the large fireproof warehouse in the Rock Island arsenal.

Mr. Modjeski has been prominent in the associations of his fellow engineers, having served as president of the Western Society of Engineers in 1903-04, and being, at one time, president of the Chicago Engineers' Club, which he assisted in organizing. He is also a member of the American Society of Engineers, Assn. Amicale des Ingenieurs Civils des Ponts et Chausees de France, and the American Railway Engineering and Maintenance of Way Association; also of the Art Institute of Chicago and of the Union League, Quadrangle, Homewood Country and South Shore Country clubs and Automobile Club, of Chicago, and the Arlington Club, of Portland, Oregon. Although professionally one of the busiest of men, he is essentially domestic in his tastes, and is the father of two sons and a daughter—Felix, Charles and Marylka.