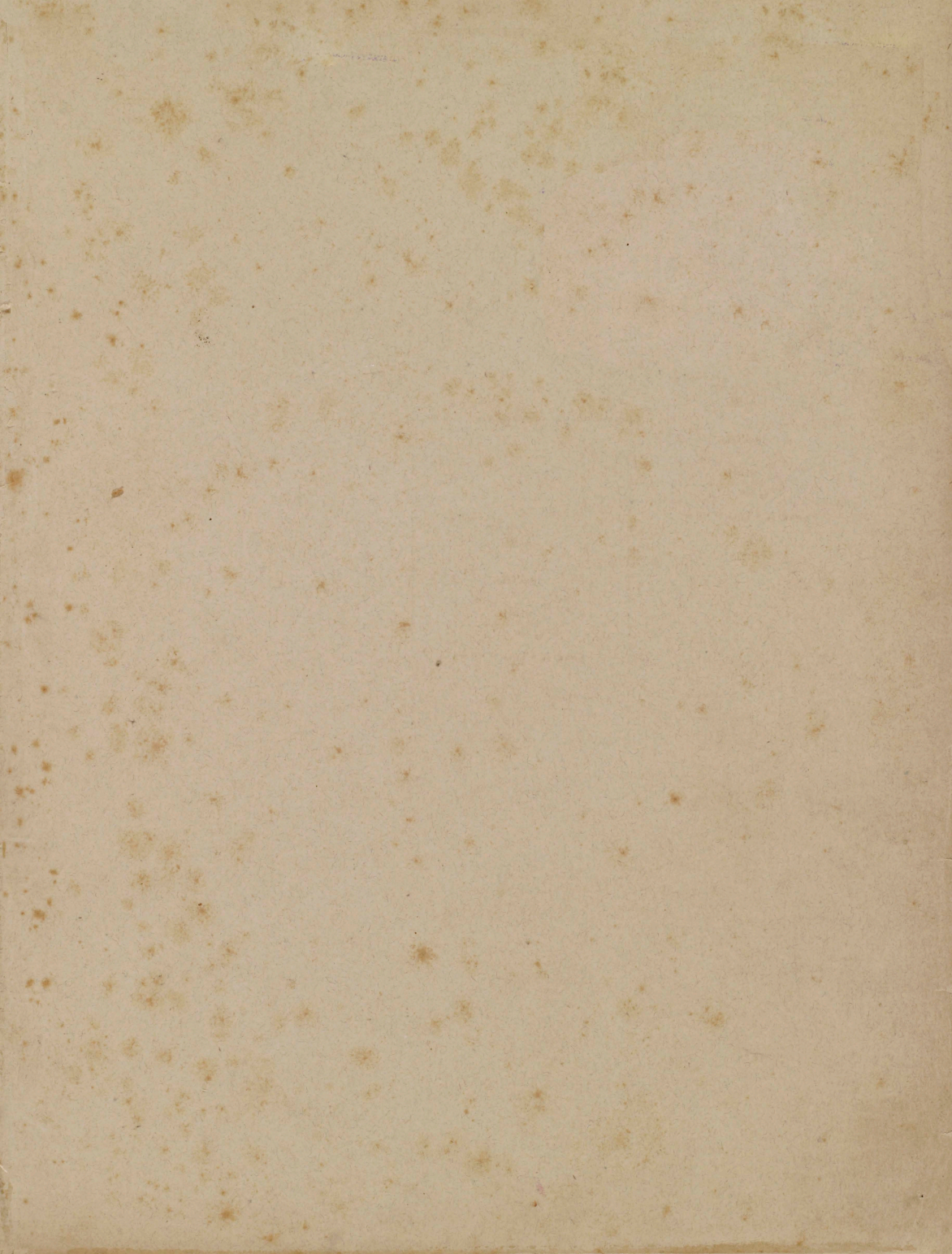


EGYPTIAN



OBELISKS



EGYPTIAN OBELISKS

BY

HENRY H. GORRINGE

LIEUTENANT-COMMANDER UNITED STATES NAVY

FIFTY FULL-PAGE ILLUSTRATIONS

THIRTY-ONE ARTOTYPES, EIGHTEEN ENGRAVINGS, AND ONE CHROMO-LITHOGRAPH

LONDON

JOHN C. NIMMO

14 KING WILLIAM STREET, STRAND, W.C.

1885

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ALBANY

HARDON & BERSTADT, N. Y.

THE ALEXANDRIAN OBELISK. (CLEOPATRA'S NEEDLE.)

Alexandria, Egypt, October, 1879

Plate I

CHAPTER I.

REMOVAL OF THE NEW YORK OBELISK.

SITUATION AND SURROUNDINGS OF THE OBELISK IN ALEXANDRIA.

THE standing obelisk of Alexandria was generally the first and the last of Egypt's numerous monuments to be visited by travellers. The accompanying illustration recalls the feeling of disgust aroused by some of its surroundings. Something more than curiosity was needed to induce one to approach near enough and remain long enough to examine and appreciate it. Situated in the outskirts of the city, near the Ramleh railway depot, it was a familiar object to the foreign element, many of whom live at Ramleh and passed it twice, often four times a day; and yet no one deemed it worthy of protection and care, even to the extent of preventing its defacement and the accumulation of offal around it. Two men made a business of breaking pieces from the angle of the shaft and edges of the intaglios for sale to relic hunters. The disagreeable odors and clamors for *backsheesh*¹ hastened the departure of strangers, who rarely devoted more than a few seconds to its examination. It would be impossible for any thing to have been more neglected and less appreciated than was the Alexandrian obelisk by the residents of Alexandria and tourists who passed through the city en route to the Nile.

There is, however, much that is attractive and worthy of attention in its former surroundings. The Arab fort, to the left in the picture, stands on the ruins of one of those magnificent structures that adorned the ancient city and made second only to Rome in the beginning of the Christian era. The shore is strewn with huge blocks of granite, syenite, and marble, many of them covered with Egyptian hieroglyphs and Greek and Roman inscriptions. Fragments of columns and capitals lie scattered about and buried in the débris that has accumulated in the vicinity; the bottom of the sea is so cumbered with the ruins of these structures that the shore is difficult to approach, even in a small boat, nearer than half a mile. The foundation of one very large building is distinctly traceable under water when the sea is smooth; and about one hundred yards from the beach there is a broken column sticking up from the bottom of the sea, nearly equal in diameter to Pompey's pillar. This was the quarter of the royal palaces, which included the gymnasium, the museum, containing the famous library, and the Cæsareum. It was at the entrance to the last-mentioned that the Romans, to commemorate their conquests, re-erected the obelisks that had been removed from the ancient Egyptian temple of On, at Heliopolis. Nothing could have been more out of place and less in keeping with the purposes for which it was designed than was the obelisk as it stood at Alexandria.

The gradual subsidence of the land in this part of North Africa has caused the sea to approach nearer to the site of the obelisk, until it was about eighty feet from the base, and its level about the same as that of the lower step. The constant washings of the surf had begun to affect the foundation, and for the last fifteen years the obelisk has been gradually inclining more and more toward the sea. In a few years it must have fallen, and almost certainly have been broken by the fall. But a more ignoble fate threatened it, in the proposition of some of the foreign residents of Alexandria to erect an apartment-house on the adjacent ground around the obelisk, which was to adorn the court-yard.

Originally designed to symbolize the highest attribute of nature, the re-creative power; forming an

¹ Arabic for gift.

Removal of the New York Obelisk.

essential feature of one of the most famous temples ever erected by man, in which Moses was educated and of which he became a high-priest; the votive offering of one of the most celebrated Pharaohs, and bearing the records of another equally celebrated, the obelisk had become a Roman trophy to commemorate the subjugation of Egypt, and was threatened either with destruction by neglect, or preservation as a means of advertising a hotel or apartment-house. His Highness, Ismail, the Khedive, who realized the importance of preserving so valuable and interesting a relic and record of the past, and his own inability to do so, merits the thanks not only of the nation to whom he intrusted its preservation, but of all those of every nation who appreciate the necessity of preserving such monuments as long as they will resist the ravages of time. Some objection has been made to removing it from its "antique surroundings." The most prominent surroundings in Alexandria were a railway depot, a new apartment-house, and an Arab fort.

NEGOTIATIONS THAT LED TO THE GIFT AND ITS REMOVAL.

The first suggestion looking to the removal of an obelisk from Egypt to the United States was made by His Highness, Ismail, the Khedive of Egypt, at the time of the opening of the Suez Canal in 1869, to Mr. William Henry Hurlbert. In September, 1877, after the removal of the prostrate obelisk of Alexandria to England by Mr. John Dixon, Mr. Louis Sterne of London, a friend of Mr. Dixon, being in New York, informed Mr. Hurlbert, then editor of the *New York World*, that Mr. Dixon, through his relations with Egypt, could secure the gift to the United States of the standing obelisk at Alexandria, and that he would be glad to do this, and to undertake to remove it to New York, if the cost of the operation could be defrayed. Mr. Hurlbert requested Mr. Sterne to open a correspondence on the subject with Mr. Dixon, which resulted in an understanding that Mr. Dixon would secure and bring to America the standing obelisk of Alexandria, if the sum of fifteen thousand pounds sterling could be guaranteed to him. After consulting with Mr. Chauncey M. Depew and Judge Ashbel Green, Mr. Hurlbert put himself in communication with Mr. William H. Vanderbilt, and Mr. Vanderbilt, as the result of a single conversation on the subject, liberally agreed to guarantee the payment of the sum named by Mr. Dixon. This was at once cabled to London by Mr. Hurlbert. A congratulatory reply by cable was received from Mr. Sterne in behalf of Mr. Dixon. But a correspondence followed from which it soon appeared that Mr. Dixon relied upon Mr. Hurlbert to secure the gift of the obelisk through the government of the United States. This materially changed the character of the negotiation; but finding Mr. Vanderbilt most willing to stand by his liberal offer as long as might be necessary to secure the desired result, Mr. Hurlbert consulted Mr. Evarts, then Secretary of State, who cordially agreed to instruct the agents of the State Department to undertake the matter. At the instance of Mr. Evarts, a letter was accordingly written to him as Secretary of State by Mr. Henry G. Stebbins, then Commissioner of Public Parks of New York City, requesting him to open negotiations with the Khedive for securing the standing obelisk of Alexandria for New York City. Mr. Evarts, in a letter dated October 19, 1877, wrote to Consul-General E. E. Farman that, "in view of the public object to be subserved, you are instructed to use all proper means of furthering the wishes expressed in Mr. Stebbins' letter," a copy of which was enclosed. In a letter dated November 24, 1877, Mr. Farman wrote to Mr. Evarts as follows: "I fear, however, that there will be serious opposition to the removal of the obelisk from the city of Alexandria, so much, in fact, that although the Khedive might personally desire to gratify the wishes of the citizens of New York, he would not think it best to grant their request."

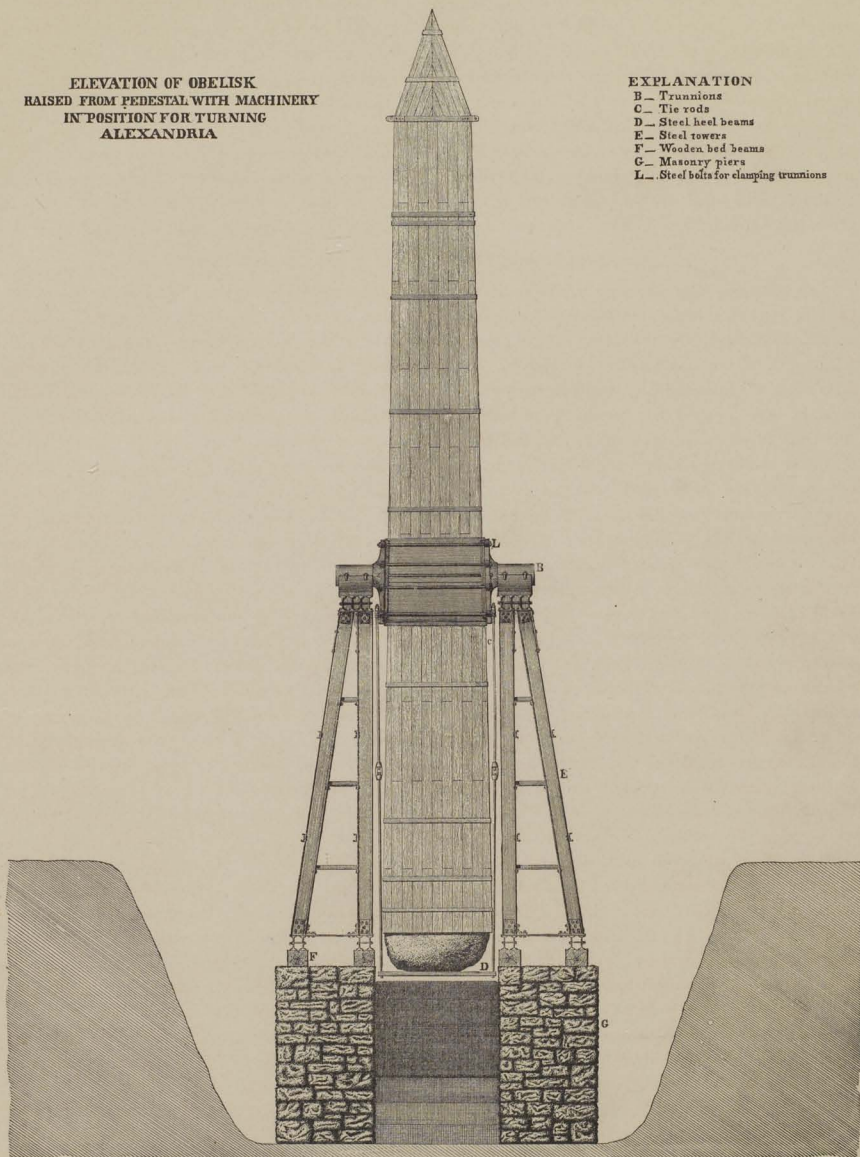
On March 4, 1878, Mr. Farman reported to Mr. Evarts that he had had an interview with the Khedive, who "made no special objection to the transportation of an obelisk to the city of New York," and that "during the conversation he (the Khedive) had said that he did not think it best to talk about the removal of the one at Alexandria, but he would take into consideration the question of one of those at Ancient Thebes."

From March 4, 1878, to May 17, 1879, Mr. Farman was untiring in his efforts to obtain an obelisk. His negotiations were conducted verbally until the latter date, when the following correspondence ensued.

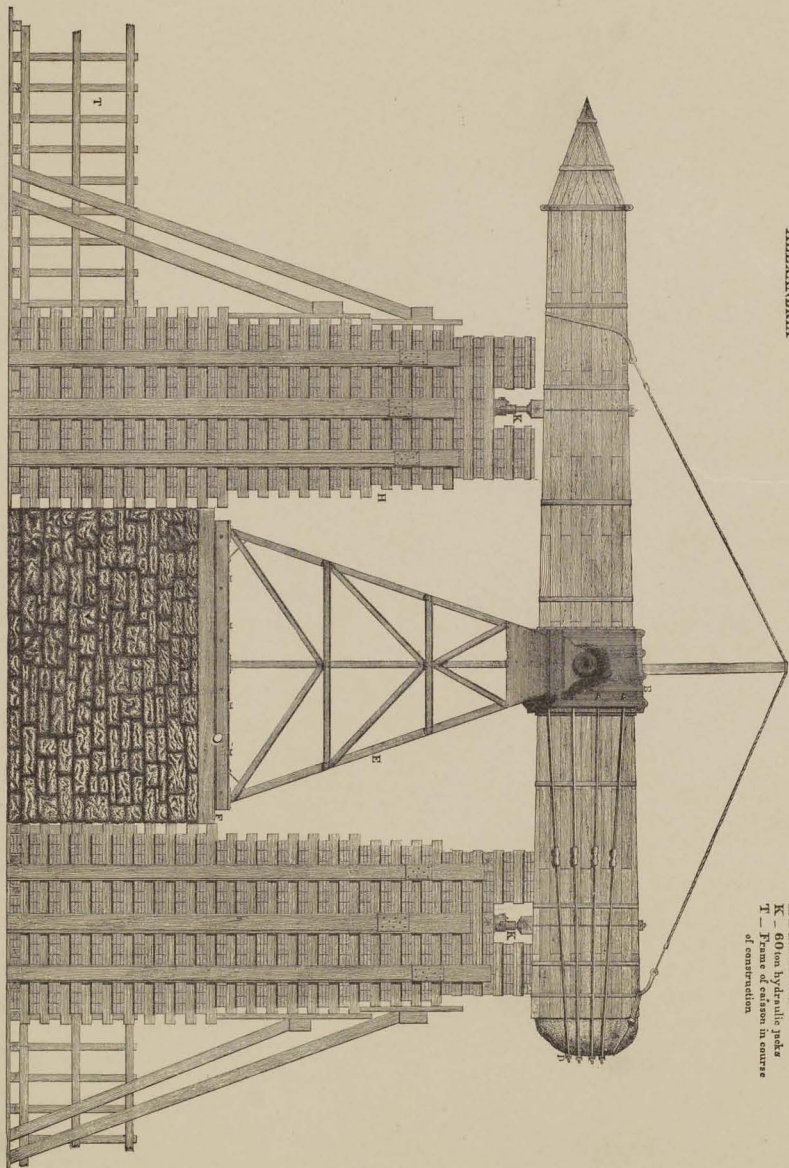
ELEVATION OF OBELISK
RAISED FROM PEDESTAL WITH MACHINERY
IN POSITION FOR TURNING
ALEXANDRIA

EXPLANATION

- B. Trunnions
- C. Tie rods
- D. Steel heel beams
- E. Steel towers
- F. Wooden bed beams
- G. Masonry piers
- L. Steel bolts for clamping trunnions



SIDE ELEVATION
PREPARATIONS FOR RELEASING MACHINERY
ALEXANDRIA



- EXPLANATION
- A - Steel rope truss
 - B - Ironing plates
 - H - Timber stacks
 - K - 60 on hydraulic jacks
 - T - Frame of catwalk in centre of construction

Removal of the New York Obelisk.

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MR. FARMAN TO CHÉRIF PACHA, Minister of Foreign Affairs.
(*Translation from the French.*)

CAIRO, May 17, 1879.

EXCELLENCY: Referring to the different conversations that I have had the honor to have with your Excellency, in which you have informed me that the government of His Highness the Khedive is disposed to present to the city of New York, to be transported and erected there, the obelisk of Alexandria, I should be pleased if your Excellency would have the kindness to definitely confirm in writing the gift of this monument.

It is understood that its transportation is to be effected at the expense of certain citizens of the said city of New York.

I beg to assure your Excellency, in advance of the warm thanks of my government for having thus favorably responded to the representations I have made to the government of His Highness the Khedive, in accordance with the instructions that I had received on this subject.

I have every reason to hope that the monument, which is thus soon to be transported and set up in the city of New York, will always be a souvenir and a pledge of the friendship that has ever existed between the government of the United States and that of His Highness the Khedive.

I beg your Excellency to accept the renewed assurance of my high consideration.

(Signed) E. E. FARMAN.

CHÉRIF PACHA, Minister of Foreign Affairs, TO MR. FARMAN.
(*Translation.*)

[MINISTER OF FOREIGN AFFAIRS, NO. 343.]

CAIRO, May 18, 1879.

MR. AGENT AND CONSUL-GENERAL: I have taken cognizance of the dispatch which you did me the honor of writing me on the 17th of the current month of May.

In reply, I hasten to transmit you the assurance, Mr. Agent and Consul-General, that the government of the Khedive, having taken into consideration your representations and the desire which you have expressed in the name of the government of the United States of America, consents, in fact, to make a gift to the city of New York of the obelisk known as Cleopatra's Needle, which is at Alexandria on the sea-shore.

The local authorities shall therefore be directed to deliver this obelisk to the representative of the American government, and also to facilitate, in every thing that shall depend upon them, the removal of this monument, which, according to the terms of your dispatch, is to be done at the exclusive cost and expense of the city of New York.

I am happy, Mr. Agent and Consul-General, to have to announce to you this decision, which, while giving to the great city an Egyptian monument, to which is attached, as you know, a real archaeological interest, will also be, I am as yourself convinced, another souvenir and another pledge of the friendship that has constantly existed between the government of the United States and that of the Khedive.

Be pleased to accept, Mr. Agent and Consul-General, the expression of my high consideration.

(Signed) CHÉRIF.

CONSUL-GENERAL FARMAN TO SECRETARY EVARTS.

U. S. AGENCY AND CONSULATE-GENERAL, CAIRO, May 22, 1879.

HONORABLE W. M. EVARTS, Secretary of State, Washington, D. C.

SIR: I have the honor to inform you that the negotiations entered into to procure an Egyptian obelisk for the city of New York have been successful.

The government of His Highness the Khedive has generously given to that city the obelisk at Alexandria known as "Cleopatra's Needle."

I enclose a copy of the original notes in French that were exchanged between his Excellency, Chérif Pacha, and myself on this subject, after a verbal understanding had been arrived at, and also their translation into English.

The gift of this ancient and well-known monument cannot be regarded as other than a very great mark of favor on the part of the government of Egypt toward that of the United States, and a proof of its high appreciation of the friendship that has ever existed between these countries.

The two obelisks that have been removed to Europe in modern times were obtained under circumstances entirely different from those now existing, and they were themselves objects which, in consequence of their situation and condition, were much less appreciated than Cleopatra's Needle. They were both presented many years ago by Mohammed Ali, one to the English and the other to the French government. The latter now at Paris was taken nearly half a century since from Luxor, in the vicinity of which are three other obelisks and many colossal ruins, which were at that time seldom visited by Europeans. The one lately taken to London had long been lying on the shore of the sea at Alexandria, nearly or wholly buried in the sand. That, however, which is given to the city of New York is still standing, and is the veritable "Cleopatra's Needle," and the only obelisk properly known by that name. It constitutes, with Pompey's pillar, the only relics of the ancient city of Alexandria that are of any interest. It is known by every school-boy in the United States, and its removal to New York will long remain one of the marked events of history.

Removal of the New York Obelisk.

From the inscriptions upon it it is supposed to have been first erected at Heliopolis (On of the Scriptures) in the reign of Thothmes III, about 1590 years before the commencement of the Christian era, according to the chronology of Marietta Bey, or about 150 years later according to that of Wilkinson.

The site of Heliopolis, which is about five miles east of Cairo, is now marked by a single monolith, though that ancient city was reputed to have been "full of obelisks." The one, however, which remains is the oldest of all the large Egyptian monuments of this character, having been erected in the reign of Usortesen I, nearly 3,000 years before Christ.

Heliopolis, or, as the word imports, the city of the sun, was known by the ancient Egyptians as the dwelling of Ra (Helios). The Sun Temple of this city was of a very remote origin, and having been destroyed or neglected was restored by Amenhat I, the immediate predecessor of Usortesen I.

The obelisks at Heliopolis were undoubtedly placed in pairs at the entrance of the Sun Temple, perhaps on each of its four sides. They were emblems of the sun's rays, and were therefore frequently dedicated to this god and to his temple. The characters engraven in the granite were originally filled with gold or gilded bronze, and were spoken of as "illuminating the world with their rays."

Heliopolis was also the seat of one of the most famous schools of antiquity, but the city had lost its importance and fallen into decay some time before the commencement of the Christian era.

Cleopatra's Needle was taken to Alexandria previous to or during the reign of Tiberius (A. D. 14-37), and was placed, with its companion now in London, on the shore of the sea in front of the Temple of Caesar. Why it bears the name of Cleopatra's Needle is not known. She died about sixty years before the completion of this temple, but it may have been commenced by her. The central row of hieroglyphical inscriptions on the obelisk refers to Thothmes III, who is here called the "Child of the Sun," and said to be "endowed with power, life, and stability." Other inscriptions were afterward added by Ramses II, and by another Pharaoh.

I hope to be able to send you hereafter a full translation of all its hieroglyphics.

I have the honor to be, sir, your obedient servant,

(Signed)

E. E. FARMAN.

SECRETARY EVARTS TO CONSUL-GENERAL FARMAN.

DEPARTMENT OF STATE, WASHINGTON, D. C., *June 13, 1879.*

E. E. FARMAN, Esquire.

SIR: I have to acknowledge the reception of your dispatch of the 22d ultimo, with its enclosures, in which you inform the Department that the negotiations entered into to procure an Egyptian obelisk for the city of New York have been successful, and that the government of His Highness the Khedive has generously presented to that city the obelisk known as Cleopatra's Needle.

It is a source of great gratification to this government, that through the generosity of the Khedive this country is soon to come into the possession of such an interesting monument of antiquity as Cleopatra's Needle, and you are therefore instructed to inform His Highness that the great favor he has conferred upon this Republic by making this gift is highly appreciated, and that it is felt that such a rare mark of friendship cannot but tend to still further strengthen the amicable relations which have ever subsisted between the two countries, and will cause the memory of the Khedive to be long and warmly cherished by the American people.

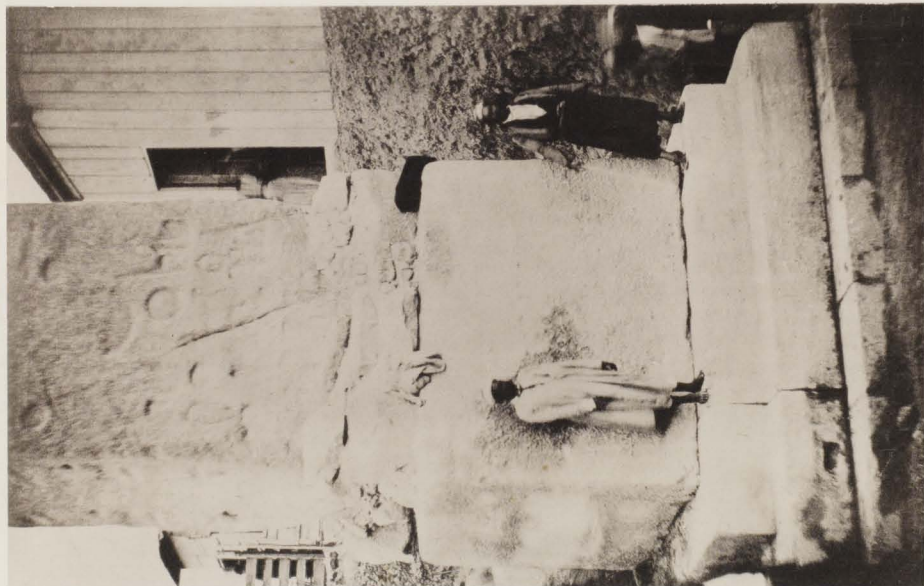
The historical account of the obelisks of Egypt which your dispatch contains has been read with interest.

I am, sir, your obedient servant,

(Signed)

W. M. EVARTS.

The successful issue of the American negotiations having been at once communicated by the Secretary of State to Mr. Hurlbert, that gentleman immediately notified Mr. John Dixon that the standing obelisk of Alexandria had been secured, and that if he was still prepared to undertake to bring it to New York the sum of fifteen thousand pounds originally named by him would be guaranteed to him by Mr. Vanderbilt, who, however, desired that no public mention of his name should be made in connection with the subject. Mr. John Dixon replied at once to Mr. Hurlbert that he would undertake the removal, but that he could not do this unless the sum named could be increased to twenty thousand pounds. Mr. Dixon's experiences with the ship "Cleopatra," in which he conveyed the prostrate obelisk of Alexandria to London doubtless explained this advance in terms. Mr. Hurlbert, without consulting Mr. Vanderbilt on the subject, at once declined to entertain this new proposition, and at his request Mr. Henry G. Stebbins kindly undertook to receive for him propositions for the transportation of the monolith to the United States. Several such propositions were received and submitted to Mr. Hurlbert, but none of them were approved by him.



ARTISTYRE



HARDON & BEESTADT, N. Y.

EXCAVATIONS AT ALEXANDRIA, SHOWING PEDESTAL STEPS, AND POSITION OF CRABS.

Negotiations were still pending, when my attention was called to the announcement in the *World* of June 17, 1879, that the obelisk had been given to the United States and the money needed for its removal had been provided. Previously, however, I had become interested in the subject through a visit to Alexandria, where the removal of the fallen obelisk to London was frequently discussed. I communicated my intention to undertake the work of removal to no one but Lieutenant Seaton Schroeder, U. S. N., and obtained, under difficulties, the needed information from which to develop my plans. I examined those of the French officer, Lebas, who removed one of the Luxor obelisks to Paris, and those of Mr. Dixon, who removed the fallen obelisk to London, and rejected both as unsuited to the conditions under which the standing obelisk of Alexandria must be removed to New York.

Careful development of original plans and an estimate of the cost of executing them resulted in an offer to Mr. Hurlbert to undertake the work, and, eventually, in the receipt, through Mr. Stebbins, of the following letter.

MR. VANDERBILT TO LT.-COMDR. GORRINGE.

NEW YORK, Aug. 4, 1879.

LIEUT. H. H. GORRINGE, U. S. Navy.

DEAR SIR: I have learned that you have or can procure the facilities to remove to the city of New York the obelisk now standing at Alexandria, in Egypt, known as "Cleopatra's Needle."

As I desire that this obelisk may be secured for the city of New York, I make you the following proposition: If you will take down and remove said obelisk from its present position to this city, and place it on such site as may be selected with my approval by the Commissioners of Parks, and furnish and construct at your own expense on said site a foundation of mason work and granite base of such form and dimensions as said Commissioners and myself may approve, I will, on the completion of the whole work, pay to you seventy-five thousand dollars.

It is understood, however, that there is to be no liability on my part until the obelisk shall be so received and placed in position in the city of New York, and the same to be in as good condition as it now is. It is understood, further, that this agreement binds also my executors and administrators; you to accept this proposition in writing on the receipt thereof, and agree to execute the same, and complete the work fully in every respect within one year from the date hereof.

Very truly yours,

(Signed)

W. H. VANDERBILT.

NEW YORK, Aug. 6, 1879.

MR. W. H. VANDERBILT.

DEAR SIR: I hereby acknowledge the receipt of your letter of August 4, 1879, relating to the removal of the obelisk from Alexandria, Egypt, to New York, and its erection on a site to be selected with your approval, and I accept the proposition and the conditions named therein.

Very truly yours,

(Signed)

HENRY H. GORRINGE, *Lieut.-Comdr., U. S. N.*

An almost insurmountable difficulty in securing the money to carry on the work ensued; but it was finally overcome by the tender of a sum sufficient to commence operations by a friend of many years' standing, Mr. Louis F. Whitin, of New York, who was unwilling to let such an important work escape me for want of means to undertake it. This essential preliminary having been arranged, a leave of absence was granted to me by the Navy Department at the request of Secretary Evarts, who also handed me the following letters.

Removal of the New York Obelisk.

DEPARTMENT OF STATE, WASHINGTON, Aug. 1, 1879.

N. D. COMANOS, Esquire, Vice-Consul-General of the United States at Cairo, Egypt.

SIR: Referring to Mr. Farman's correspondence with the Department in regard to the presentation, by His Highness the late Khedive, of an obelisk to the city of New York, I have now to inform you that, at the request of the citizens of that city interested in securing that munificent gift of His Highness for the adornment of their native city, the Secretary of the Navy has granted to Lieutenant-Commander Gorringe, of the United States Navy, leave of absence for any requisite time for the purpose of superintending the transportation, from Alexandria to New York, of the obelisk known as "Cleopatra's Needle."

This dispatch will be handed to you in person by Lieutenant-Commander Gorringe, who is about to proceed to Egypt in fulfilment of the interesting and responsible task entrusted to him. I desire to bespeak for him all proper official and personal aid you can render him in his undertaking, and especially that you will accredit him to the government of the Khedive as the person authorized on behalf of this government to receive, in the name of the city of New York, and to convey thither, His Highness' generous gift.

I am, sir, your obedient servant,

(Signed)

W. M. EVARTS.

DEPARTMENT OF STATE, WASHINGTON, Aug. 21, 1879.

N. D. COMANOS, Esquire, U. S. Vice-Consul-General at Cairo, Egypt.

SIR: I have to inform you that Lieutenant-Commander Gorringe, of the United States Navy, has been detailed and directed by this government to proceed to Alexandria, Egypt, and receive the obelisk now standing in that city and known as Cleopatra's Needle and lately presented by the government of Egypt to the city of New York, and to transport the same to the last-named city.

You are instructed to officially inform the Egyptian government, through its Minister of Foreign Affairs, that Lieutenant-Commander Gorringe is authorized, on the part of the government of the United States and as its representative, to receive and remove the obelisk.

You will also extend to him such aid as you may be able to give and as he shall require in the accomplishment of his work.

He will ship to Alexandria a considerable amount of machinery, lumber, etc., to be employed in removing the obelisk from its present position and placing it on board the steamer that will be sent to receive it, and you will aid him, if you are able to do so, in getting this machinery through the custom-house without payment of duties. As the machinery is only to be used in Egypt in removing and embarking the obelisk, and then is to be immediately re-shipped to the United States, this government does not think it should properly be subjected to duty.

It will, however, be proper to follow such rules as have already been established in similar cases, for instance, in the case of the iron and other material used in the construction of the caisson and in the removal of the obelisk lately taken by Mr. Dixon to London, if the same was shipped to Alexandria expressly for that purpose.

I am, sir, your obedient servant,

(Signed)

W. M. EVARTS.

DEVELOPING THE PLANS.

The Paris and London obelisks were transported in vessels built expressly for the purpose. The "Luxor" was built of wood in Toulon, and sailed to Egypt; the "Cleopatra" was built of iron in London, and shipped in pieces to Alexandria. Neither of these vessels had adequate motive power. As the voyages they had to perform were coasting, and as it was not necessary for them to go out of sight of land or get beyond easy reach of safe harbors, there seemed no objection to their making the voyages in tow. Yet these voyages were made under the greatest difficulties; and the behavior of both vessels in a sea-way was very bad. The captain of the "Cleopatra" reported that she pitched sixteen times a minute. This is inexplicable, for the progressive motion of the waves and the speed of the vessel in an opposite direction would have to be exceptional to produce so many oscillations. The "Luxor" is reported to have rolled so violently that her crew had difficulty in holding on.

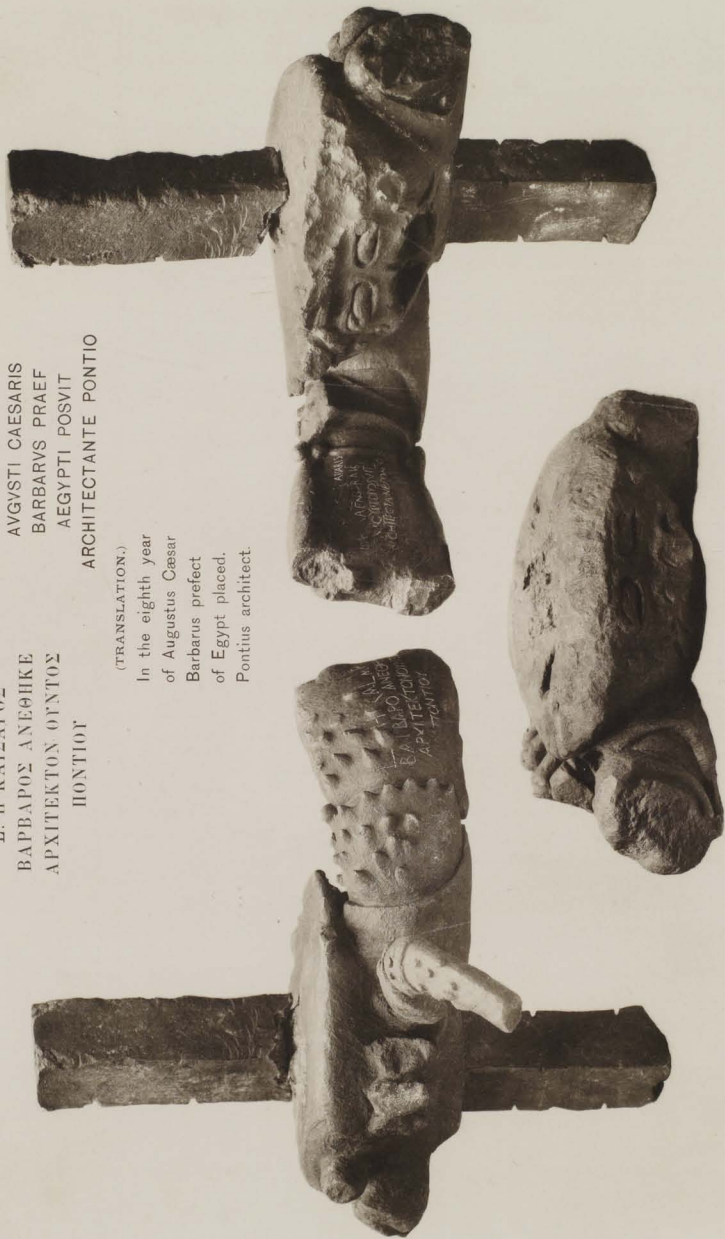
(INSCRIPTION.)

L. H. ΚΑΙΣΑΡΟΣ
ΒΑΡΒΑΡΟΣ ΑΝΘΗΚΗ
ΑΡΧΙΤΕΚΤΟΝ ΟΥΝΤΟΣ
ΠΟΝΤΙΟΥ

ANNO VIII
AVGVSTI CAESARIS
BARBARVS PRAEF
AEGYPTI POSVIT
ARCHITECTANTE PONTIO

(TRANSLATION.)

In the eighth year
of Augustus Caesar
Barbarus prefect
of Egypt placed.
Pontius architect



4470796

MARSDEN & BERTHAUD, N. Y.

THE CRABS AS FOUND

Copyright, 1891, by H. H. GORRINGE, New York.

Plate V

These experiences were not needed to convince a mariner that the vessel in which the New York obelisk was to be transported must be large enough to take care of herself under all conditions of weather, and must have her own motive power. Such a vessel could not have been built around the obelisk for much less than the whole amount that was to be paid for its removal, and there was no alternative but to embark it on an ordinary vessel. For this there was no precedent. The one-hundred-ton guns made in England and shipped to Italy were the largest and heaviest masses that had ever been placed intact into a ship's hold. To accomplish this and for disembarking them, hydraulic cranes had been constructed in England and at Spezzia at a cost greatly exceeding the sum that was to cover the whole cost of removing the obelisk.

Its size was as embarrassing as its weight. No vessel has hatches that will admit a mass sixty-nine feet in length. It could not have been carried on deck in safety without strengthening the vessel at great expense. In the hold, below the water-line, was the only place where it could be securely stowed and safely transported, and how to get it there was the one thing on which the whole operation of removing it successfully turned.

The plan devised and successfully executed consisted simply in embarking and disembarking the obelisk while the bow of the vessel was out of water, through an aperture opened expressly for the purpose and subsequently closed for the voyage. The details of execution will be given further on.

Besides my own, three other plans were proposed for transporting the obelisk by sea. The first one was proposed by the owner of a bark that had been engaged in transporting heavy blocks of granite on deck; the weight of one block never exceeded thirty tons. He exhibited a photograph of the obelisk which showed water near by and a plan of the deck of his bark, and said: "I will moor my vessel here, lower the stone down on her deck, and then sail. When we reach New York we will not be in any hurry to set it up, for we will cart it about the country and make a good thing out of it exhibiting it to the country folks." The objections to this plan were: 1st. His bark could not get within a mile of the obelisk, afloat, as the shore is fringed with sand-banks and reefs that extend out this distance. 2d. His bark could not have remained in the position he pointed out, even if she could have got to it, as the bay is exposed to the prevailing northerly wind and a heavy surf almost continuously breaks on the shore. 3d. His bark was only four hundred tons capacity, and the obelisk weighs two hundred and twenty tons. It would have been interesting to witness, from the deck of some other vessel, the performances of the bark at sea with the obelisk on her spar-deck. 4th. There was not room enough anywhere on the deck of the bark for the obelisk.

The next proposition was that the obelisk should somehow be got on the bottom of the bay with chains under it; these were to be taken on board of a steamer, and the obelisk lifted by them until it was suspended under the keel; in this position it was to make the sea-voyage. No plan was submitted for getting it on the bottom of the bay; and no arrangement was proposed for securing the services of mariners for the voyage.

Another plan was to encase the obelisk in wood enough to float it, and then tow the mass without steering it. Elaborate drawings and interesting computations accompanied this proposition; but no provision was made for getting the mass afloat, nor was any thing said about the management of the towing vessel in a sea-way. In order to get it afloat, launching ways half a mile in length would have been necessary, and their construction through the surf impossible.

For lowering the obelisk the French method was the only precedent. The English operations began with the obelisk lying on the sea-shore. There is no record of how the ancients lowered theirs; and it is probable that obelisks were never removed from an erect position, and that only those that had fallen were removed from where the ancient Egyptians placed them. The French method is fully described further on. It has the advantage of being subjected to the severest test at a moment when the breaking of any essential part of the system would have been least likely to result disastrously to the obelisk; and the conspicuous disadvantage of multiplication of parts essential to safety, and division of responsibility at the critical moments. In devising a new plan for lowering the obelisk it was essential that the turning structure should be made available for lowering and erecting; that it should be made in pieces of moderate weight and dimensions for facility of transport and handling; that it may be erected and taken apart without destroying it; that it should be adaptable to

dimensions of the obelisk varying considerably from those given in books, which did not agree; and that it may have some value for other uses after the obelisk had been erected.

The accompanying drawings (Plates ii and iii) present a front- and a side-view of the structure. The first shows the obelisk clasped at its centre of gravity in a pair of trunnions; these rest on steel towers having masonry foundations. The towers are formed of I beams held in position by screw bolts through angle plates, flat plates, angle and channel bars. The horizontal steel beams forming the bottom of the structure rest on wooden beams which lie on the top of the masonry foundations. The wooden beams were designed for increasing or diminishing the height of the towers to correspond with that of the centre of gravity, which could not be determined until accurate measurements had been made of the obelisk. The heaviest pieces of the turning structure are the trunnions; each one weighs twelve thousand five hundred and seventy pounds; next to these are the pillow-blocks, each weighing three thousand seven hundred pounds; the head-pieces weigh seventeen hundred and fifty pounds each; and the beams vary from thirteen hundred and sixty to eleven hundred and ninety pounds each.

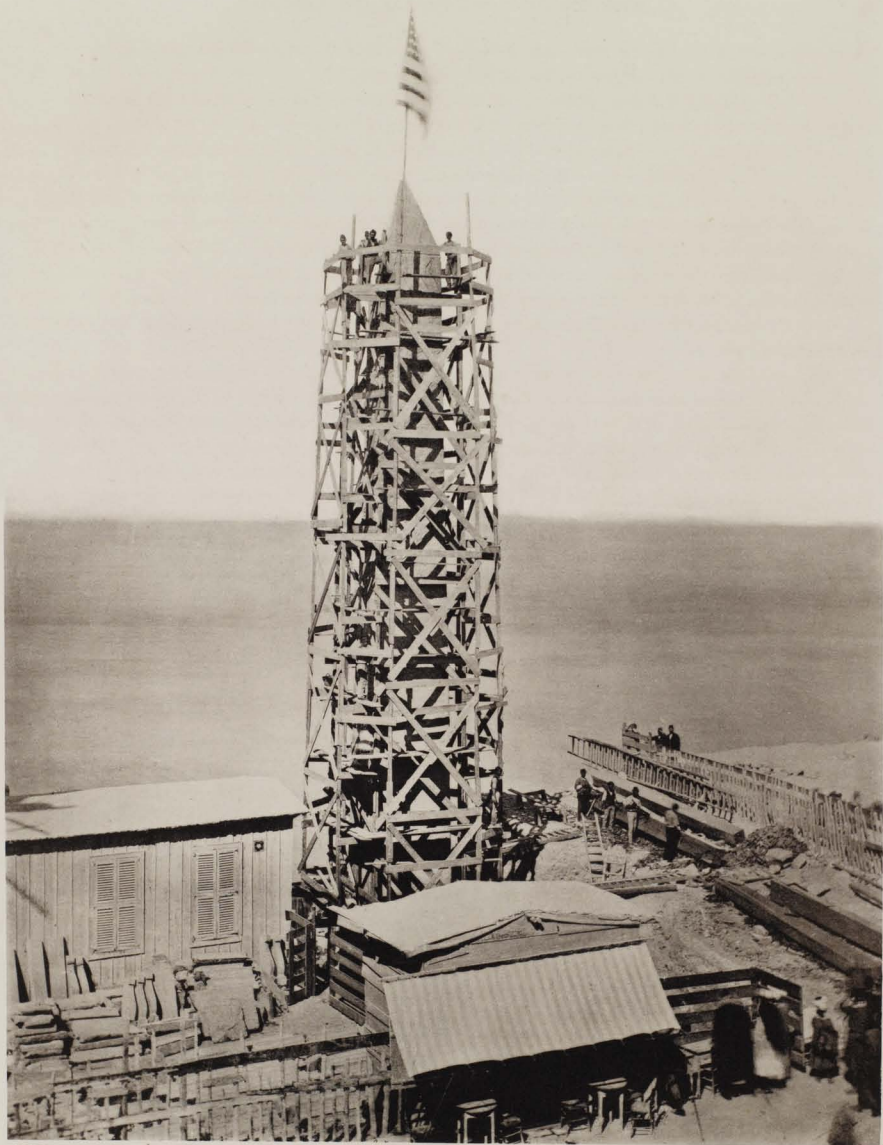
The device for lifting the obelisk clear of the pedestal and transferring its weight to the turning structure was a system of screws and turn-buckles. Tie-rods connected the lower edges of the trunnion-plates with beams under the bottom of the obelisk. Each tie-rod was in two sections, and on each end of each section there was cut a screw. The two sections were connected by a turn-buckle, and the upper and lower ends of the rods were held in position through the trunnion-plates and heel-beams by large nuts. As there were four tie-rods on each side the system comprised thirty-two screws, each with a diameter of three inches, which were capable of lifting at least double the weight of the obelisk with a large factor of safety.

To prevent the obelisk from slipping through the trunnions after it was horizontal, lips were cast on the inside vertical edges of the trunnions, to carry heavy iron plates; these were held in position by three steel bolts on each side, passing from one trunnion to the other, which also served as additional support. The trunnions were further held in position by three iron bolts on each side, making twelve in all. These bolts were not tightened until the obelisk had been lifted clear of its supports and high enough to allow the heel to swing clear of the pedestal when turning, as it was necessary, in order to lift it, that it should pass freely through the trunnions.

Although the section of the obelisk through the centre of gravity was found by computation to be strong enough to support the weight of the ends, with additions of twenty-eight tons suspended at the centre of gravity of each end, it was determined not to take any risk, in view of the length of time the syenite had been exposed to atmospheric influences and the possibility of deterioration. The simple device of trussing the ends of the shaft with steel cables was adopted as being most effective. Thirty tons of the weight of each section was in this manner transferred to the point of suspension. The truss and verticals are shown on Plate iii.

For lowering the obelisk to the ground after it was horizontal two plans were devised, and the selection left to circumstances. One was by means of an inclined plane, the other by means of hydraulic pumps placed on stacks of timber built up under the ends. The inclined plane would have been adopted if the obelisk had been transported overland to the port for embarkation; but as this was not permitted, the plan adopted was that shown on Plate iii. The hydraulic pumps were fitted with lowering valves, designed by Richard Dudgeon, of New York, which permitted a descent so gradual that it could not be detected without measurement. When the weight of the obelisk had been transferred from the turning structure to the stacks of timber, by lifting it with the hydraulic pumps clear of the pillow-blocks on which the trunnions rested, the turning structure was removed and the descent effected by removing layers of timber alternately from the tops of the stacks and under the pumps. The obelisk rested on the two top piles of each section while the hydraulic pumps were being lowered by removing the timber from under them.

There remained only the land transport of the obelisk to provide for to complete my plans for its removal from Alexandria. For this there were abundant precedents successfully applied in ancient and modern times. Of these the most ingenious is the method devised by Count Carburî, who was employed under the name of



ARTOTYPE

HARBOR & BIERSTADT, N. Y.

THE STAGING

November 5, 1879

Plate VI

Lascari, to move the pedestal of the statue of Peter the Great from the forest of Karelia to St. Petersburg. The mass that was actually moved measured, approximately, twenty-one feet in height and breadth and thirty-eight in length, and weighed about six hundred tons. The route by which it was transported was over a hill and across a marsh to the river bank; thence by river to the city quay, and thence again by land to the site. The total distance is forty-two thousand two hundred and fifty-feet, of which fifteen thousand is over land. The essential feature of Carhuri's plan was the substitution of cannon-balls for the ordinary wheels or rollers and metal grooves for the ordinary tracks. A roadway was made across the marsh, and over this the mass of rock was moved, by tackles and capstans worked by two hundred men, a distance of six hundred feet per day.

Carhuri's system was adopted. And in order to insure the obelisk against possible injury during its overland transport, and especially over yielding ground, two iron trusses were designed to form a carriage or cradle into which it was to have been lowered and to have remained until it was embarked.

REMOVING THE OBELISK FROM ALEXANDRIA.

On August 4, 1879, execution of the foregoing plans was begun. A contract for the construction of the turning structure and transporting cradle was entered into with the firm of John A. Roebling's Sons, of Trenton. Lieutenant Seaton Schroeder, U. S. Navy, having previously accepted the position of assistant, was granted leave of absence by the Navy Department. A foreman for iron-work, Mr. Frank Price, of Glen Cove, New York, and one for wood-work were engaged; and on August 24th Lieutenant Schroeder, the foreman carpenter, and I sailed for England on the "*Arizona*," leaving Mr. Price to follow on the steamer that took the machinery.

Every possible effort to charter an American steamer was made in the interval between August 4th and 26th, but not one available for the work could be secured.

We reached Liverpool on September 4th, and spent the ensuing two weeks in fruitless efforts to charter an English steamer. The rates demanded for charter were equivalent to a purchase, and generally the explanation that the obelisk was to be embarked on the vessel in the manner proposed caused a sneer or a smile. As steamers could be purchased at any time, it was finally decided to make no further effort to charter one, but to wait until every thing was ready for embarking the obelisk before purchasing one.

From England we travelled through France and Italy to Trieste with the intention of purchasing timber at Trieste. There we found that there would be no advantage in purchasing and shipping the timber to Alexandria, where, we were assured, there was an abundant supply on hand at rates less, if any thing, than it would cost to make especial shipment. We returned to Venice, sailed on the steamer "*Ceylon*" on October 9th, and arrived at Alexandria October 16th. The foreman carpenter having been sent by steamer direct from Liverpool had arrived about two weeks earlier. In this interval the Alexandrians had learned that the obelisk was really to be removed, and for the first time in many centuries it became an object of interest.

The French waited about twenty-five years and the English nearly seventy-five before removing the obelisks they had selected for removal. There was a feeling in Egypt that the Americans would certainly require a century to perfect their arrangements; and although it was well known that the obelisk had been given to the United States, no one, not even the Khedive, believed that it would be removed.

Our arrival was the signal for the beginning of an agitation by the foreign residents to prevent its removal. Violently abusive articles were published in newspapers, meetings were held, and petitions to the Khedive were circulated for signature; threats of personal violence against any one who attempted to commence the work of removal were made openly and by letter, and every other means of frightening us resorted to. One incident of this nature that occurred on the day after our arrival is recalled, in order to contrast it with another that occurred on the day of our departure seven months later. On both occasions I was passing through the street frequented by the younger merchants and brokers as a rendezvous, on my way to the telegraph office; on the first, I was greeted with a storm of hisses and a succession of choice epithets; on the last, scores of these very men crowded around me, congratulating me on my final success and wishing me a pleasant and safe voyage.

Removal of the New York Obelisk.

After having established ourselves at Alexandria in apartments near to the site of the obelisk we went to Cairo, and at an hour previously appointed, accompanied by Vice-Consul-General Comanos, we had an audience of the Khedive. He received us very cordially, and made inquiries about the plans for removing and transporting the obelisk, cautiously and delicately expressing anxiety that it should not be taken down unless we were sure of removing it. This, we assured him, there was no reason to doubt. After a long and very frank discussion about European influences on Egyptian affairs, he promised that orders would be sent to the Governor of Alexandria to formally deliver up the obelisk. Visits were made to all the Ministers, who received us very kindly, and offered, in the usual Eastern manner, to do all sorts of things, which we well understood as without meaning. Riaz Pacha, Minister of Foreign Affairs and President of the Council of Ministers, gave directions that the order to the Governor of Alexandria should be made out without delay. The following is a translation.

TO HIS EXCELLENCY THE GOVERNOR OF ALEXANDRIA: In the time of the ex-Khedive the Egyptian government gave Cleopatra's Needle, now standing on the sea-shore of Alexandria, to the United States of America, to be erected in the city of New York. His Excellency Chérif Pacha, who was then Minister of Foreign Affairs, communicated the fact to the United States Consul-General in a dispatch dated May 18, 1879. An American officer having been sent here to receive and remove the said Cleopatra's Needle, and His Highness the Khedive having confirmed the gift by a decree, I hasten to instruct you to deliver that monument immediately to the said officer, and to offer him the same assistance for removing it from its site and embarking it as was offered at the time of removing the other obelisk that was given to the English government. All expenses will be paid by the officer of the United States.

(Signed)

MOUSTAPHA RIAZ, *Minister of Foreign Affairs.*

We returned to Alexandria by the first train after the receipt of this order, and on arrival there we lost no time in presenting it to the Governor, and as soon as he had read it we urged him to execute it at once by a formal transfer of the obelisk. This was all accomplished within three days after our arrival. Considering with whom we were dealing there was reason for great satisfaction at the promptness with which possession of the obelisk had been secured. As long as it remained in the control of the Egyptian government there were reasons for anticipating pressure from the European consuls and resident foreigners to prevent its transfer; but the transfer was effected so quickly and so quietly that these gentlemen had no time to act in concert and with effect before it was too late. To their protests and petitions subsequently presented, the Khedive and his Ministers answered: "Too late; Cleopatra's Needle is the possession of the United States officer sent to receive it." The efforts of foreign residents were then directed to preventing its removal.

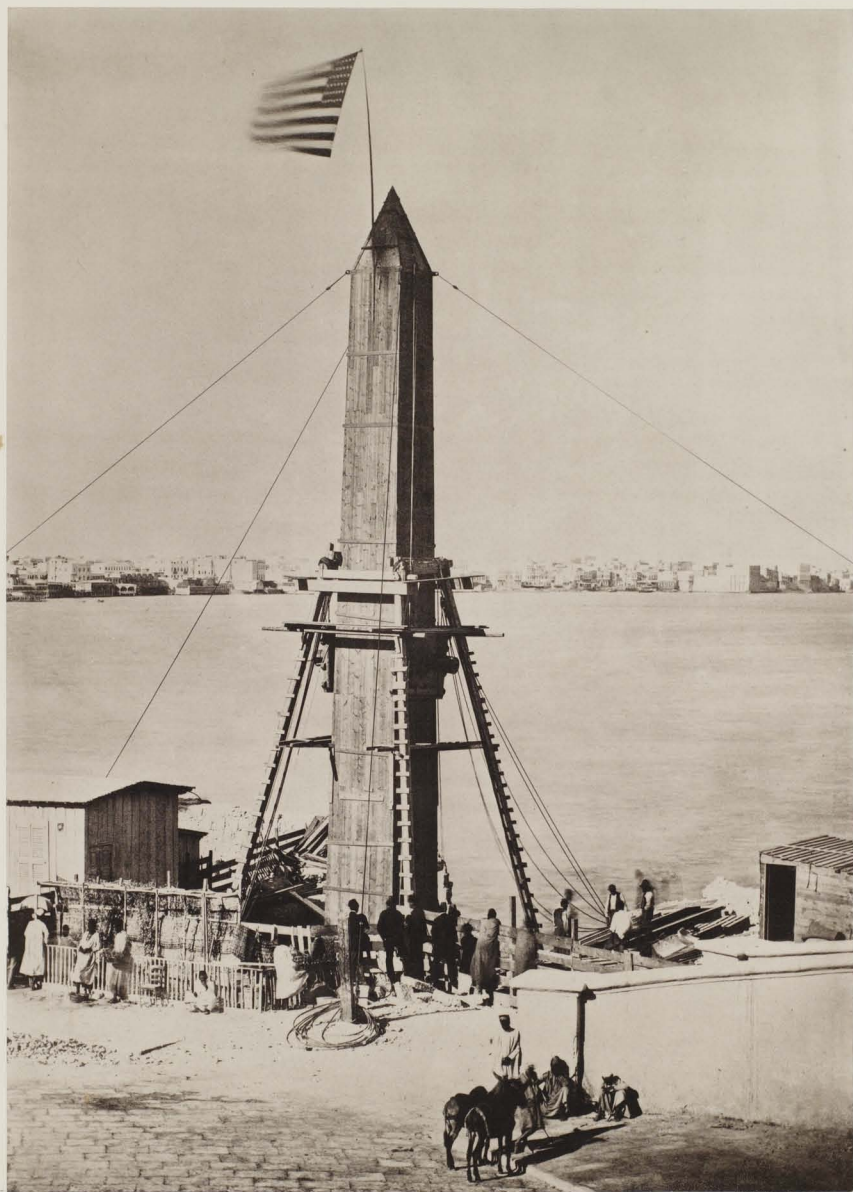
Although the Governor had formally transferred the obelisk, he had stipulated that work should not be commenced for a day or two, and kindly suggested that the interval could be profitably spent in making our preparations. After a lapse of four days another visit was paid to him, and he authorized us to commence operations, and excused the delay on the ground of a legal complication about the land around the obelisk that he had been obliged to enquire into.

At noon on October 27th, a force of laborers having begun clearing away the ground, an incident occurred that is related in the following letter.

H. E. THE GOVERNOR OF ALEXANDRIA.

ALEXANDRIA, Oct. 28, 1879.

SIR: I regret extremely that it has become once more necessary for me to have recourse to your good-will and your duty to assist me in prosecuting the work with which I am entrusted by the government of the United States. Yesterday, having received authority from you, I set some men to work to remove the paving stones that surround the obelisk, the owner of the stones making no objection whatever. Another individual arrived, however, and ordered the work stopped. Arriving myself a few moments afterward, I learned that the man claimed possession of the ground and would allow no one to work there. He also added that if we persisted he would apply to the Italian Consul, whose janissaries would be sent to eject us from the premises. Not recognizing his right to interfere, but not wishing to bring about such a disturbance, I went to see the Italian Vice-Consul, accompanied by the Consul of the United



AIRTYPE

HARRISON & BIERSTADT, N. Y.

THE OBELISK ENCASED AND STAYED.

The Hoisting Shears with Trunnions suspended to them

Plate VII

States, to ask an explanation. He informed me that any Italian subject occupying a property belonging to him had a right to his protection, and that he would protect him, even by force of arms. I thought it strange that he should dare to prevent by main force what your Excellency had authorized me to do; but before notifying my government that the Italian Vice-Consul had defied the orders of the Egyptian government, and that I am thus stopped in the execution of a work with which I am charged, I thought it best to try to arrange it amicably, so as not to trouble your Excellency. During the dispute on the ground I had offered to the *soi-disant* proprietor to pay him a rent, just as though it really belonged to him; but he refused point-blank to rent the ground to me, and informed me through his lawyer that he would not permit the operations for removing the obelisk. Nevertheless, I begged the Italian Vice-Consul to try his best to settle the matter, and he promised to give me an answer by four o'clock this afternoon. If he does not succeed I shall be obliged to request your Excellency to protect me against the Italian janissaries. Failing that, I shall be compelled to telegraph to my government that I have been forcibly ejected, and that Egyptian authority has failed to protect me.

I beg your Excellency to so direct affairs as to enable me to begin operations at once, because it is needless to say that if the matter should take an official form between the two governments the situation would only become more grave.

I am, sir, with great respect, your obedient servant,

(Signed)

HENRY H. GORRINGE, *Lieutenant-Commander U. S. Navy.*

In a subsequent interview with the Governor, he explained that the legal complication he had been investigating, that caused the delay in authorizing us to begin work, was the claim that the land around the obelisk was the property of some Italians; and in further explanation he related the circumstances substantially as follows:

An Italian having been granted authority by Mohammed Ali Pacha, then ruler of Egypt, to build a bathing establishment on the sea-shore near the obelisk, was unfortunate enough to have his property destroyed by the sea during a gale. He subsequently made a claim against the Egyptian government for compensation for the damage done by the sea; and in order to secure himself against a possible adverse decision on his claim, he took possession of the land surrounding the obelisk and erected a shanty on it. This claim was still pending when the international courts were organized for the trial of causes between foreigners and the Egyptian government and between individuals of different nationalities. It was regarded as so absurd that difficulty was experienced in getting it placed on the docket, but the Italian Consul persisted, and it was finally so placed in the belief that it never would be pressed for trial by the government, and certainly not by the claimants.

Four fifths of the claims of foreigners against the Egyptian government have no firmer basis than the one here cited, and at least four fifths of the foreign residents of Egypt have claims that are handed down in wills to heirs, just as this one was, the original claimant having died several years ago. Their attorney had kept himself well informed of the proceedings in connection with the removal of the obelisk, and had in concert with others deliberately planned the prohibition of the work in order to prevent its removal.

The Governor expressed surprise at the presumption of the Italian Consul, and requested time to communicate with the Minister of Foreign Affairs at Cairo. I notified U. S. Vice-Consul-General Comanos by telegraph of the circumstance, and urged him to confer with the Italian Consul-General about it; and pending answers from the Governor and Mr. Comanos, I notified the Italian Consul that a suit for damages for £15,000 would be instituted against whoever attempted to interfere with the work of removing the obelisk, and that I limited the time for amicable settlement, by acceptance of my proposition to lease the ground, to four o'clock P. M. of that day.

In reply to this the Italian Consul informed our consular agent that the claimant had accepted my offer to lease the ground, and proposed to appoint arbitrators to fix on a suitable sum. This was agreed to, arbitrators were selected, and the lease effected before night. Although there could have been no question as to the result of a determination to proceed without leasing the land, it was deemed advisable to get absolute control of the ground that must necessarily be covered with the works, so as to have a right to exclude from it undesirable persons.

Removal of the New York Obelisk.

On the morning of October 29th work was begun by one hundred Arabs, varying from ten to seventy years of age, divided into three gangs. The middle-aged dug and filled baskets, the old lifted them to the backs of the young, who carried them to the shore and emptied them into the surf. By November 6th an excavation of seventeen hundred and thirty cubic yards had been completed. It had laid bare the pedestal and steps, and made a space large enough to construct a caisson in which to transport the obelisk to the port for embarkation. Several interesting fragments of statuary, a number of coins, and a few scarabee and other antique objects were found by the workmen, to whom liberal rewards were paid for each article delivered. Men accustomed to the work were employed to search the beach for other small objects that having escaped detection would probably be washed up by the surf. In this way many interesting bronze fragments were recovered.

The base of the obelisk and the position of one of the metal supports are shown on Plate iv, on the right. This is copied from a photograph taken at the time the London obelisk was being removed. One corner of the obelisk is shown, supported by a piece of stone that had been substituted for one of the metal supports. The corner diagonally opposite to it was supported in exactly the same manner, two of the metal supports having been removed. The two remaining ones were badly mutilated. Their condition is shown on Plate v, which is a photograph of one metal support in two positions and the other in one position. They had been cast in the form of sea-crabs, but when we uncovered them all the legs but one, and all the claws but a part of one, had been broken off and removed, doubtless for the value of the metal.

Plate iv also shows the excavation and the condition of the base and steps when they were uncovered. The masonry on top of the pedestal around the base of the obelisk, shown in the picture on the left, was put there about the time the London obelisk was removed; owing to inferior mortar and other causes it was loose and gave no support to the shaft. Another feature in the picture to the left is the reef in the base of the obelisk, that has been misrepresented as a crack in the shaft, received during its transportation. It is in reality a vein of hornblende, the outer part of which has been decomposed, leaving an irregular shallow notch nowhere exceeding an inch in depth. But for this photograph, made before the obelisk had been lowered, there might have been some question as to the origin of this defect, which is now very noticeable from the drive in the Central Park, the dirt having been washed out of it.

The bottom of the lower step was found to be nearly at mean sea level; as the foundation could not have sunk so nearly uniformly, it is certain that there has been a subsidence of the ground since the obelisk was erected; and if the level of the lower step was at the same height as the surface is at present, this subsidence is about seventeen feet in nineteen hundred years. Down to the level of the water there was nothing but loose earth and sand, mixed with all sorts of fragments of columns and statuary and pottery. In several places remains of old walls were met with. Surrounding the steps were fragments of a mosaic pavement, composed of alternate squares of white and dark marble. The sea end of the pit was left open down to the remains of an ancient massive wall that ran nearly parallel with the shore and close to the water. This wall served as a breakwater for the pit when the surf was high.

While the excavations were in progress another attempt was made to prevent the removal of the obelisk, through a creditor of the Egyptian government who applied to the International Court to seize it and keep possession until his claim had been paid. Before serving the writ enquiries were made as to the probable result of doing so. On being assured that no notice would be taken of the writ, and that all the resistance possible would be offered to any use of force to take possession of the obelisk, the Court withheld the writ. The object of this proceeding was to arrest the work, get the obelisk into court, and keep the case pending until the attempt to remove it had been abandoned. It is inexplicable that the proposition should ever have been entertained; and yet it was not only entertained, but the process was actually begun, and would undoubtedly have been pushed but for prompt action that gave assurance of a determination to resist. The United States flag was conspicuously displayed on the obelisk to indicate ownership; and the means of defending it was provided and arranged in a manner that carried conviction to any one that had been in doubt about our sincerity and our determination to defend it and remove it.



ARTOTYPE

HARRISON S. BIERSTADT, N. Y.

TURNING THE OBELISK.

December 6, 1879

Plate VIII

Soon after this affair had quieted down some of the consuls-general in Cairo, at the instigation of some resident European archaeologists, made an attempt to have the work of removal suspended until the matter could be referred to their governments. It appears that by the terms of a convention entered into with several of the European powers, the Egyptian government agreed to prevent the exportation of any object of antiquity. No attention had been paid to this convention when the English removed the fallen obelisk; and its provisions were commonly violated by the consuls and archaeologists themselves in the shipment of articles to Europe. Besides this, the *firman* that gave the Egyptian government existence stipulated that it should not make treaties with foreign powers, and it is clear that the convention in question was unauthorized. Fearing that the pressure on the Khedive and his Ministers might become more than they could resist, negotiations were commenced through a prominent, and at that time powerful, Pacha in Constantinople, whom it had been my good fortune to befriend, to insure the prompt confirmation of the gift by the Porte, in case of necessity.

To put an end to these annoyances I determined to push the work of removal forward as rapidly as possible by working night and day, so as to get the obelisk off its pedestal. Every effort was devoted to this end, and it was accomplished within a month from the day the turning structure arrived.

PREPARATIONS FOR TURNING THE OBELISK.

While the pit was being dug a staging was erected around the obelisk for sheathing it with planks, in order to protect the hieroglyphs from injury. (Plate vi.) The sheathing was held together by iron bands, similar to the hoops of a barrel. The top band was heavier than the others, and had a loop at each angle, into which were shackled four steel wire cables. These were secured to anchors at suitable distances from the base of the obelisk, and tightened so as to support it until it was secured in the turning structure. The masonry and concrete piers on which this was to stand were commenced as soon as the pit was dug, and in order to have them dry quickly hydraulic cement was used. These piers are shown on Plates ii and iii. As soon as the staging had been removed four long spars were placed in position, opposite the angles of the obelisk, to form derricks for hoisting the pieces of the turning structure into position. Plate vii illustrates the plan adopted for supporting the obelisk, the sheathing banded around it, and the hoisting shears with the trunnions suspended to them. For convenience in placing the trunnions on the pillow-blocks, they were hoisted first and left hanging until the turning structure had been erected.

The machinery and material for removing the obelisk were shipped from New York on the steamer "Nevada," of the Guion Line, which sailed on October 7th, and arrived in Liverpool on October 19th. There they were transhipped on the steamer "Mariotis," which sailed on October 27th, and arrived at Alexandria November 11, 1879. Preparations had been made for their prompt disembarkation and transport from the port, through the town, to the side of the obelisk; and this was completed in four days. The trunnions were the only pieces that gave trouble, owing to there not being a truck in the city suitable for their transport. They were, however, placed on the best truck obtainable, which was hauled by Arabs, who wisely selected the Christian Sabbath for the day to move them, owing to the diminution of traffic on that day.

The Arabs were very noisy and attracted a large and increasing crowd, who followed the procession through the town. For this an American missionary roundly abused us from a borrowed pulpit, and took advantage of the occasion to denounce the removal of the obelisk as a work of the Devil. This act of "Christian charity" was of no consequence, beyond the amusement it afforded the editors and readers of local newspapers, who seized on it with much eagerness as evidence of the prevailing sentiment of Americans. In explanation of the missionary's condition of mind on the subject it may be well to state on his own authority that he wanted the money that was being spent on the removal given to his mission. In connection with this question of Sunday-work, which was commented on in a rational manner by many friends, it is well to recall the fact that the Mohammedan and Christian Sabbaths are on different days. It was impossible to observe both; and a respect for the opinions of both sects led to the rule that work would be carried on without intermission, and that the workmen were at liberty to select their own Sunday and observe it in

their own fashion. Arab Mohammedans and Maltese and European Christians formed the majority of the men employed. The former spent Friday, their Sabbath, in a rational manner, sleeping during the early part of the day, attending services at the mosque at noon, and devoting the afternoon to social intercourse and amusement. The Christians, almost to a man, would devote the thirty-six hours from Saturday evening to Monday morning in drinking, gambling, fighting, and other excesses, and return to work drunk, sleepy, and bruised.

By December 2d the turning structure had been placed in position, and so admirably were the several parts fitted that it was not even necessary to ream out a bolt hole.¹ The process of lifting the obelisk clear of the pedestal and disengaging the metal supports or crabs occupied us until the evening of December 5th. With the bolts that clamped the trunnions together loosened so as to allow the obelisk to pass freely up through them, levers inserted in the turn-buckles of the tie-rods were turned simultaneously with the nuts on the upper and lower ends of the tie-rods. Some anxiety was caused by the buckling of the heel-beams, due to imperfect bearing against the bottom of the obelisk. After this had been provided against by wedges driven in the vacant spaces, the lifting was successfully and easily accomplished. The operation of lifting, here briefly described, will be made clear by referring to Plate ii, where the turn-buckles in the tie-rods *C* are shown inside of the steel towers, about midway between the trunnions *B*, and the heel-beams *D*. And on Plate iii the ends of the tie-rods are seen through the brackets on the trunnions and also through the ends of the heel-beams.

Before turning the obelisk horizontal the steel wire-rope truss *A*, shown on Plates iii, vii, and viii, was placed in position and tightened by means of screws and nuts to an estimated strain of sixty tons; thereby relieving the section of the obelisk through the point of suspension of this amount of the weight of the ends, and insuring it against fracture when it was horizontal. Plates vii and viii also show a stack of timber piled to receive the upper section of the obelisk should the tackles that were provided to keep control of the turning unexpectedly give way. These tackles were led from a strap round the bottom of the obelisk to posts led into the masonry towers. They were, theoretically, capable of raising fifteen tons. New rope and blocks of the best quality obtainable in Alexandria were purchased expressly for the purpose. The rope, previously purchased had been so treacherous, and had parted so many times with inadequate strain, that it was deemed prudent to provide a safeguard against the obelisk revolving past the horizontal. The upper section was known to have a preponderance of three and a half tons of weight, given it to facilitate the operation of turning.

TURNING THE OBELISK.

On the morning of December 4th an attempt was made to pull the upper end of the obelisk over by means of tackles. This attempt failed, owing to the further bending of the heel-beams, which caused the bottom of the obelisk to bind against the top of one of the crabs. The impression prevailed that the turning structure had settled and was therefore of inadequate strength to sustain the weight. Several engineers and others strongly advised abandoning the attempt to place the obelisk horizontal in the manner proposed; and letters were received protesting against the destruction of so valuable a monument by any further attempt to remove it. These expressions did not affect in any way the confidence I felt in a speedy termination of this, the first stage of the work, although they caused me great chagrin, and aroused every one associated with me in the work to an extra exertion in order to prove them senseless.

Removing the crabs was rendered very difficult by the lead which had been poured into the mortices in the pedestal while molten. The angles of the dowels of the crabs had notches in them (see Plate vi), and the bottom of the mortice was larger than the top. These were devices of the Roman engineer to prevent the removal of the crabs, and they were very effective. The process of lifting the obelisk, already described,

¹ The contract for this work was sublet by John A. Roebling's Sons to the Phoenix Iron Works of Trenton, to which all credit is due for its admirable execution.



ARTOTYPE

HARROUN & BIERSTADT, N. Y.

THE OBELISK HORIZONTAL.

December 6, 1879.

was again resorted to, and having raised it clear of the crab the bottom was pushed over to seaward until the obelisk was in the position shown on Plate viii. In this position it remained seventeen hours without affecting any part of the structure in which it was suspended.

Rumors of a possible demonstration by the foreign residents when the obelisk was to be placed horizontal had been circulated until they reached Rear-Admiral Aslambekoff, of the Russian Imperial Navy, who was in the port of Alexandria in his flag-ship the "Minim." He was aware of the feeling that existed among the foreigners, and while unable to land an armed force for our protection, he landed a large force of unarmed trained seamen for the purpose of enclosing the grounds in a cordon of effective men and affording any assistance that was needed at a critical moment.

His Excellency, Zulficar Pacha, Governor of Alexandria, the Egyptian officials, and a few acquaintances were notified that the turning would take place at 9 A. M. of the 6th. But his Excellency did not arrive until 11 A. M. As soon as he had reached the platform provided for invited persons, the word was given to slack the tackles. A large crowd of Greeks, Italians, and other Europeans had gathered in the vicinity, and occupied every available spot from which the movement could be seen. While we were waiting for the Governor, the crowd was noisy and at times unruly when they were prevented from going within the inclosure. But at the instant the obelisk began to move there was absolute silence and stillness. As it slowly turned not a sound but the rendering of the ropes around the posts and an occasional creak of the structure could be heard. Immediately following a creak louder than any previous one, the motion was suddenly arrested, then there was a sharp snap—one of the tackles had parted. Instantly the order was given to slack the other tackle rapidly, using it merely to retard the motion and not to arrest it; but the man attending the fall had lost his wits, and instead of slackening, he held it fast and it very soon broke. The obelisk was at that moment about half over; it moved slowly at first, and then more and more rapidly, until it struck the stack of timbers, rebounded twice, and came to rest in the position shown on Plate viii. There was intense excitement; many of the Arabs and Greeks about the grounds had fled precipitously when the obelisk began to move rapidly; and when it rested on the stack of timber uninjured there arose a prolonged cheer, which was the first friendly manifestation shown by the Alexandrians.

The explanation given for the breaking of the first tackle by the man attending it was, that he looked up to see what the noise was, and in doing so involuntarily checked the passage of the rope through his hands; this brought the whole strain on his tackle and caused it to break. The other man was properly giving his whole attention to the command, and was unconscious of the accident until he saw that his companion had fled precipitately from under the obelisk, leaving him alone. Surely his loss of self-control was excusable. It was to provide against such contingencies that the timber stack was built. The two upper tiers of plank were crushed; aside from this no loss or injury to any person or any thing resulted from the successful accomplishment of the first essential feature of the work of removal.

Simultaneously with the preparations for turning, other equally important parts of the work were being pushed forward; notably the construction of a wooden box or caisson in which the obelisk was to be carried by sea to the port, and the clearing away of ruins from, and grading of the sea-bed along, the route over which it had to be launched. By way of explanation it is necessary to recall the fact that an iron truss-cradle, moving on cannon-balls instead of wheels, in channel irons instead of on an ordinary rail, had been designed, made in the United States, and brought to Egypt for transporting the obelisk overland to the port for embarkation. The distance overland was less than a mile; and the route was over comparatively unfrequented streets, except for a short distance across what was once the ancient causeway connecting Eunostos Island with the mainland, and what is now an accumulation of sand and debris, occupied by the most important part of the city. An examination of Plate x will make this clear.

Soon after our arrival at Alexandria an unofficial application was made to the Governor for permission to move the obelisk along the proposed route. A conference ensued during which the Governor stated, in effect, that in consideration for keeping the streets paved and clean the government had transferred all con-

Removal of the New York Obelisk.

trol of them to the foreign merchants. He agreed to ascertain the probable result of an application made to these merchants and to inform us. Several days afterward he advised us not to make the application until every other method of getting the obelisk to the port had been tried and had failed. It appears that the foreign merchants had determined not to allow the obelisk to be moved through the city, giving as a reason the probability of its crushing in the sewers. Guarantees of repairing all damage done were of no avail; the transporting cradle, costing \$5,100, had to be thrown away, and the expensive and very dangerous method of sea transport in a wooden caisson a distance of ten miles was the only resource. The expense was least of all in the construction of the caisson, which cost only \$2,200; it was chiefly in the preparations for launching it over a shallow bank cumbered with heavy blocks of syenite and granite; the massive submerged foundations of one of the famous palaces of Alexandria were directly in the way. These obstructions could only be removed by means of divers, a serious undertaking in smooth water, and a most discouraging and almost hopeless task to accomplish on an open coast on which the surf was breaking two thirds of the time. Diving operations were commenced on November 5, 1879, and continued, whenever the sea would permit, until March 18, 1880. A pier with derricks for lifting out the blocks had to be constructed. The estimated weight of material removed is one hundred and seventy tons. The pieces ranged from three to seven tons in weight. In Alexandria competent divers are scarce, and in order to retain those we employed they had to be paid whether at work or not. The cost of this submarine work was nearly \$4,000. It will be shown hereafter that the cost of the caisson and submarine work necessary for launching it were inconsiderable and unimportant when compared with the cost of launching and the imminent danger involved in the operation of getting it afloat, due to the displacement of the ways by the surf.

Plate iii shows the frame of the caisson in course of construction, and Plate viii shows the end sections nearly completed in the pit. The floor timbers of these sections were made to form a part of the timber stacks on which the obelisk was lowered, as shown in Plate iii. Work on the middle section could not be commenced until the pedestal, steps, and foundation had been removed; and their removal could not be accomplished until the turning structure had been released and taken down, and its foundation piers demolished.

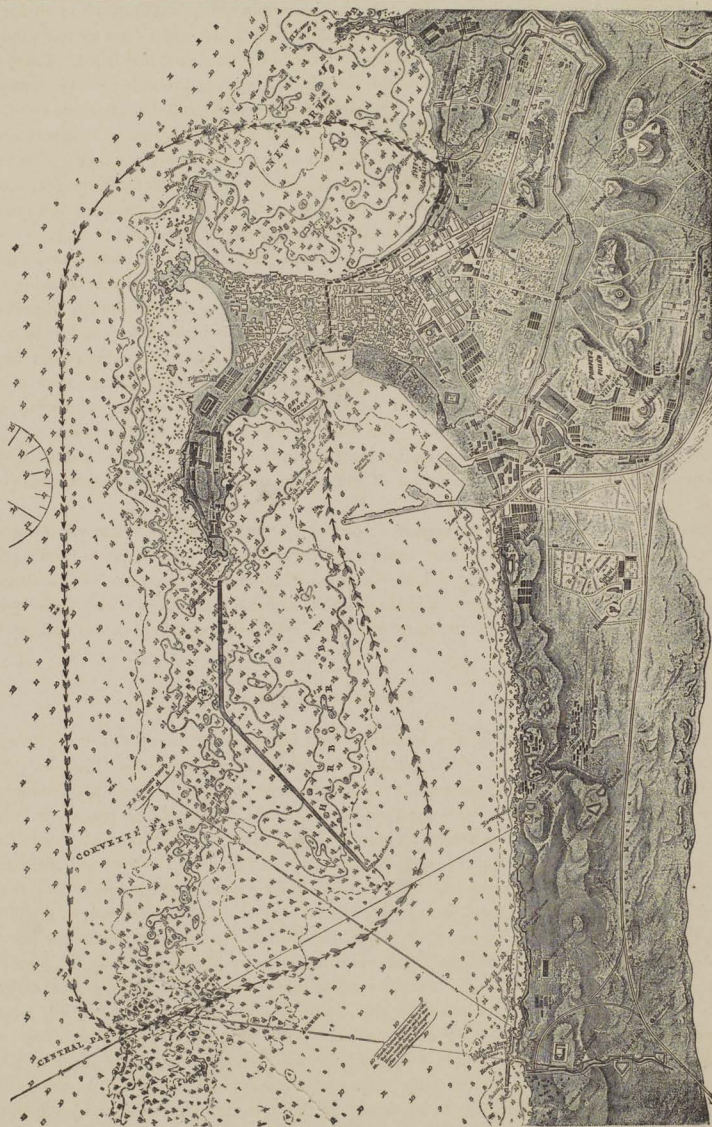
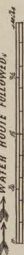
LOWERING THE OBELISK.

The preparations for releasing the machinery and for lowering the obelisk from its elevated position, forty-three feet above the bottom of the pit, into the caisson are illustrated on Plate iii. After the obelisk had been placed horizontal, the upper section was temporarily supported on two spars under the pyramidion. The stack of timber placed to receive it was then removed. After several experiments in building the stacks, the plan illustrated in Plate iii was finally adopted. Planks three inches thick, nine inches wide, and sixteen feet long, were piled in groups of three, at right angles to each other, up to the level of the top of the pedestal; the lengths were then fourteen feet for two thirds the remaining height, and finally twelve feet for the remainder. Heavy timber, diagonal shores were placed against the sides and ends of the piles to insure stability. Oak beams were slung by iron rods under the obelisk, and fastened to it at the points against which the pistons of the pumps were to bear; and other beams were placed on top of the piles for the pumps to stand on, so as to distribute the bearing over the whole pile uniformly. The tops of the stacks were cut down through the middle to give room enough for the pumps to be worked,—(see Plate iii),—the ends being left to receive the weight of the obelisk when it was necessary to shift the pumps down. The pumps were fitted with lowering valves, an indispensable substitute for the ordinary method of tripping the plunger when releasing the strain from the piston. By means of these valves the liquid in the cylinder is allowed to escape to the chamber as rapidly or as slowly as the operator pleases, thereby allowing the piston to descend at any desired speed.

CITY & PORT OF ALEXANDRIA.

--- OVERLAND ROUTE PROPOSED.

--- WATER ROUTE FOLLOWED.



Very great inconvenience resulted from the use of small instead of large timber for the stacks, and it may well be asked why small timber was used. Relying on the order of Riaz Pacha to the Governor, to "offer him (the officer sent to remove the obelisk) the same assistance for removing it from its site and embarking it as was offered at the time of removing the other obelisk that was given to the English government," and knowing that the timber used by the English was still in the government store-house, no effort was made to find other timber until the time for lowering the obelisk had nearly arrived. Application for the loan of government timber was made. The officer in charge happened to be a European, and he managed to evade the order, even after it had been reiterated, by delays and other means, until it was too late. The obelisk was ready for turning, timber for lowering it had to be provided, and the only kind available was the soft planks that were bought at an exorbitant rate. Here again the vicious obstruction of Europeans failed to retard the work, and had no other effect than to increase the cost of its execution. In this instance the unnecessary expense for timber amounted to \$4,300.

The operation of releasing the turning structure was very troublesome, owing to the elasticity of the stacks. The total compression in the forty-three feet was twenty-two and a half inches under the weight of the obelisk. As soon as the weight had been transferred to the stacks, the towers and trunnions were removed, and demolition of the masonry piers commenced.

The operation of lowering was as follows: The pistons of the pumps were forced out to within four inches of their limit of fourteen inches; blocking was then supplied to whatever space intervened between the caps and the oak beam under the obelisk; the piston was then forced out the remaining four inches, or as much as was needed to lift the obelisk clear of the blocking on the ends of the stacks, on which it had been landed while the trunnions and towers were being removed; nine inches of this blocking was then gradually taken away, while the pistons of the pumps were allowed to descend slowly; when nearly down to their limit, removing the blocking was stopped, and the obelisk once more rested on it with the pumps free. The planks that were parallel with the direction of the obelisk had to be sawed in two places to allow of removing the middle section so that the pumps might be lowered nine inches. Those that were laid in the other direction could be removed without being cut. When the pumps had been lowered the process above described was repeated. The average rate of lowering was about three feet per day. It must, however, be remarked that owing to the height of the stacks and to insure safety, work was not carried on simultaneously at both ends.

It was difficult to maintain uniformity of pressure on the pistons; and instead of pumps capable of sustaining sixty tons each, it would have been much better to have had them capable of sustaining one hundred. Considerable delay resulted from the disabling of three of the pumps; the system was new to the mechanics of Alexandria, and restoring the pumps to efficiency was a tedious and expensive process.

Demolishing the foundation piers without blasting was also troublesome, the cement having set to a degree entirely unexpected. As soon as they had been demolished the pit was enlarged on the east side, and the pedestal steps and foundation moved out from under the obelisk and placed in the enlargement. The pedestal was raised clear of the steps by driving steel wedges under it until there was room enough for the end of a bent steel bar or link to be inserted. (See Fig. *L*, Plate xi.) Hydraulic pumps acting on the upper part of this bar or link then raised the pedestal clear of the steps and held it suspended until channel irons and cannon balls could be placed underneath. The pedestal was then lowered on top of the channel irons and balls. It was moved with the greatest ease over a track of channel irons prolonged to the position assigned it. A section through the pedestal and channel iron tracks with the balls in position is shown on Plate xi, Fig. *M*.

This plate also shows the position in which each piece forming the steps and foundation was found, and gives the form and dimensions of all the essential pieces of the structure, including the pedestal. The curious features of the foundation are the forms and positions of certain pieces of syenite, and the marks and characters that are cut on other pieces that occupy the axis and east angle of the structure.

Whatever their significance there is something striking in their arrangement, and almost any explanation is more reasonable than the assumption that it was accidental.

THE MASONIC EMBLEMS.

The pieces forming the steps and all but four of those inclosed by them are a hard limestone of grayish-white color. Three of the four exceptions are syenite from the same quarry as the obelisk and pedestal (Plate xi, Figs. *A, B, C*); the other one, *E*, is soft limestone entirely free from discolorations and as purely white as the best statuary marble. The foundation below the lower step is composed of soft sandstone blocks, rough-hewn and of irregular form, with three exceptions; these three had been carefully dressed and had had figures cut in relief on the sides (Figs. *P, G, H*). Of the three pieces of syenite, two, *A* and *B*, are carefully cut and had been polished; the other, *C*, is rough and irregular, the upper part having been gouged by tools into an unnatural and conspicuously uneven surface. One of the polished pieces, *A*, is an imperfect cube, that is, the height is less than the sides in measurement; the other is of remarkable shape, more easily comprehended from the drawing *B* on Plate xi than from any possible description. The upper part is hewn to form a long and a short arm, at right angles, similar to the mechanic's tool called a builder's square, or in French *l'angle*. At the junction of the lower part with the vertical faces of the arms there are three beads, or convex surfaces of unequal dimensions; and around the lower edges of the sides there is a concave surface or groove. The assumption that it had formed a part of some ancient building, from the ruins of which it was taken to fill up a vacant space under the obelisk, would not be reasonable, chiefly because its form is unsuited for such a purpose, as will be very evident by examining the drawing. With reference to the rough piece of syenite there are two proofs that the roughness and irregularity were intentionally given to its upper surface: one of these is the tool marks; the other is its singularity—in this respect, every other piece of the steps and foundation had the upper and lower surfaces dressed to give a good bearing for the layers above and below.

Assuming that the forms of these pieces of syenite, in connection with the fact that they are syenite while all the other pieces are limestone, have some significance, an explanation may be sought in their actual and relative positions. The polished cube occupied the east angle of the upper tier, and stood on the end of the long arm of the polished square; this extended across the S. E. face of the structure parallel with the inner edges of the second tier or lower step; the short arm extended half-way across the S. W. face, and touched the rough block of syenite which occupied the west angle of the same tier. If there is any thing within the limits of our knowledge and understanding that serves to explain the forms and arrangement of these three pieces it seems unreasonable to reject it until some better explanation is offered. One striking peculiarity existed in the manner of laying the polished cube. While every other part of the structure was laid in white mortar, this one was placed on yellow cement, and the spaces around it were not filled in, as all other spaces were, with fragments of hard limestone and white mortar.

The piece of white limestone was found on the lower part of the piece of syenite out of which the square was cut. The cube of syenite (*A*) rested partly on the long arm of the square (*B*), and partly on the piece of white limestone (*E*). On the block of hard gray limestone adjacent to it (*D*) an *iron trowel* and a *lead plummet* (*K*) were found. These implements could not have been left accidentally by the workmen who built the foundation, for the trowel is firmly cemented to the surface of the stone. They are not modern, and could not have been placed where they were found at any time after the re-erection of the obelisk, B. C. 22.

After removing all the pieces forming the steps and those enclosed by them, numbering in all forty-three, two tiers of the foundation were removed. The only piece of the first tier that was dressed occupied the east angle. This piece is shown on Plate xi, marked *H*. Two of the sides have a figure in relief, extending through the middle, that resembles a snake in form. At the angle of these sides are two spiral figures in relief also resembling snakes. The upper part of the stone at this angle projects above

Architectural drawing of the Temple of Isis at Philae, showing a plan view and various elevations. The plan view is a large rectangle divided into several rooms labeled A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z. The elevations show the temple's facade, side walls, and roof. Dimensions are given in feet and inches.

- ST. STAMP INDICED W. LEAD. ——— A. PRINTED CURVE OF STENTEE.
1. STAMPING INDICATED P. AND LINE. ——— B. PLEADED SQUARE OF STENTEE.
————— C. BACKED AND IRREGULAR BLACK OF STENTEE.
————— D. FIRM LAMINATE WITH THIN COATED TO SCALD.
————— E. SHORT LAMINATE VERY WHITE AND INTERESTING FROM SPOTS.
————— F. AXIS STAMP WITH FIGURES.
————— G. MARBLE STONE.
————— H. CORNER STAMP FOUND UNDER EAST ANGLE OF LOWER STEP.
————— K. LEAD PLAINLY FOUND ON TOP OF STONE.
————— M. SECTION THROUGH FERRUGEN AND CHALKS, IRON TRAIL.

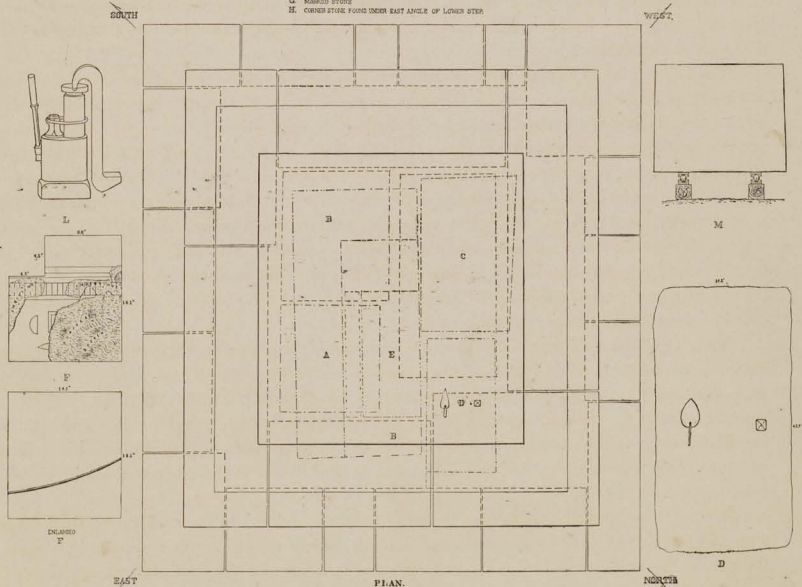


PLATE XI.

the surface; and where the spirals meet there is an angular recess below it. The projection and recess form a group of three miniature steps above the spirals. In the face of the stone that was found adjacent to this one there is a diamond-shaped recess. No other mark was found on any piece of this tier.

In the tier next below, all of the pieces were rough and irregularly laid except two; one marked *F* in Plate xi occupied the axis of the structure, and the other marked *G* was adjacent to it. One face of the axis stone *F* has had a group of lines and a group of figures carved on it, the latter in relief; and another face has an arc of a very large circle extending across it. As far as it is possible to distinguish the group of lines they *may* be divided into three parts. The upper part appears to consist of three parallel lines of unequal length; the middle part consists of two parallel lines, the interval between them divided into equal spaces as if to form a scale; the lower part has a line forming with a part of the lower line of the scale, as far as it can be traced, a figure resembling the cubit measure of the ancient Egyptians. One of the group of figures resembles a builder's square, or angle; another is the segment of a circle or a semicircle; both of these forms are hieroglyphical characters; the other is more like a spherical triangle than any thing else; it is manifestly a part of some figure that is nearly obliterated.

The marked stone *G* adjacent to the axis stone *F* has one of its sides carefully dressed, the others being rough. On the dressed side there are two rows of parallel grooves about one eighth of an inch in depth and the same in width; the upper row contains nine groups with three grooves in each, and the lower row five groups with three grooves in each. The grooves are cut diagonally across the face of the stone in two directions; every alternate group of the upper row intersects one of the lower row, and forms with it an obtuse angle. A glance at the drawing will make this clear.

The rapid inflow of water prevented excavation below the lower tier shown on Plate xi, which appeared to be the last one that was composed of large stones.

The foundation and steps were removed with great care; each piece was measured and numbered as it was lifted out, and a corresponding number marked on a drawing made at the time, of which Plate xi is a reproduction.

The striking similarity between the forms and actual and relative positions of the pieces here described and those of the emblems of Freemasonry, led to the appointment of a committee of Freemasons, by the Grand Lodge of Egypt, to examine them; and after discussion and deliberation, the following conclusions were announced: The polished cube found in the east angle corresponds with the Masonic emblem designated the Perfect Ashler. The polished square corresponds with the emblem of that name. The rough block found in the west angle corresponds with the Rough Ashler. The stone with figures resembling snakes is emblematic of Wisdom. The axis stone is the Trestle-Board; and the marked stone adjacent to it bears the Master's Mark. The two implements, the iron trowel and lead-plummet, are also emblematic of Freemasonry. It is worthy of record that the Masonic character of the foundation had been affirmed before either of these implements was discovered. The piece of soft white limestone that was found under the polished cube (*E*, Plate xi) has been regarded as the symbol of Purity, and as having been placed in the centre of the eighteen pieces forming the lower step to designate the word of the eighteenth degree.

Mr. Gaston L. Feuardent, of New York, unquestionably the most expert archæologist in the United States, was asked to examine the axis stone (*F*), and express an opinion as to the meaning of the figures and lines on it. The following is his reply:

"I have no doubt that the stone with the relief inscriptions, found in the lower tier of the foundation of the obelisk, was placed there entirely by accident among the rough stones forming the lower strata. If the people who built the foundation had desired to bury there some record, they would not have selected a mere fragment, but would have, as they usually did, placed there a record made and shaped in the most intelligible manner.

"The actual preservation of the iron trowel and the lead weight shows how little damage was suffered by the objects placed in the foundation; and there is ample evidence in the appearance of the stone itself, its uniformity of color, and its shape, to show that it was found in the same condition as when it was originally placed there, except a few scratches accidentally and recently put on it. Therefore I believe that the workmen took a fragment from some monument and placed it where it was found, after having cut it into shape to fit the place.

Removal of the New York Obelisk.

"I believe that a wrong interpretation was given to the characters cut in the stone, on account of the position it occupied in the foundation; that is to say, that its deciphering was attempted while keeping the stone in its horizontal position instead of placing it vertically as ought to have been done.

"The many vertical and horizontal lines on the side of the stone represent to me part of the original ornamentation, forming a kind of frame, of which the other portions are lost. The two hieroglyphic signs now existing at the middle of the stone represent to me (first) half a sphere and (second) the top part of a figure which originally represented three sides of a square, and these signs are meant to represent in hieroglyphics the word 'Temple.'

"I see clearly that most of the surface of the inscribed side of the stone was damaged or taken away before being placed in the foundation, and the many accidents appearing on the present damaged surface of the stone must have led to false interpretation in its deciphering, as is frequently the case in reading ancient inscriptions found on monuments in a poor state of preservation."

The conclusions of Mr. Feuardent are entitled to the greatest weight. It will be noted by instructed Freemasons that he interprets the hieroglyphical figures that still remain on the surface, distinct enough to be recognized, as meaning "Temple"; and it is a remarkable coincidence that figures of these particular forms should have been used to designate the word "Temple." Freemasonry is believed to be the modern representative of an order or society that was founded by the ancients engaged in the construction of temples, and the whole speculative fabric of modern Freemasonry is based on the operations of builders.

As differences of opinion on all subjects of interest are inevitable, there are some Freemasons who regard the arrangement and forms of the pieces of the base of the obelisk as having no Masonic significance. Those who do not belong to the Order are hardly capable of judging.

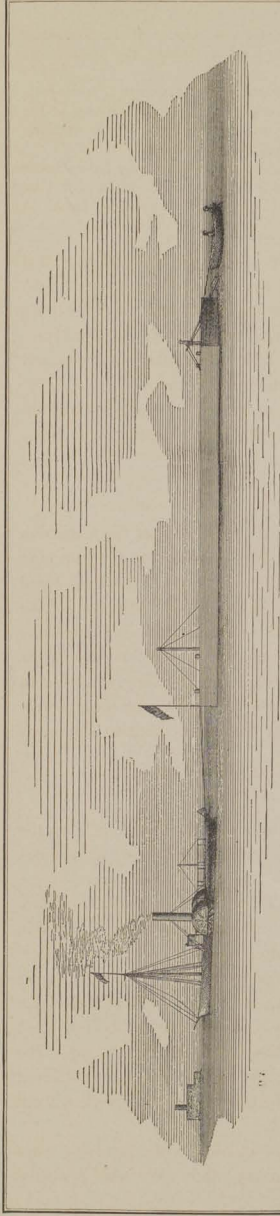
THE CAISSON.

Completing the caisson and lowering the obelisk into it occupied but a short time after the foundation had been moved out of the way. The caisson with the obelisk in it had to be placed on the launching ways, which were laid at an inclination of seven per cent., and extended out a distance of one hundred and ten yards from the low-water line of the shore to a depth of seven feet. Plate xii illustrates the form of the caisson and the method of securing the obelisk in it. The caisson was nothing but a large box eighty-three feet long, twenty-two feet wide at one end, thirty feet wide at the other end, and eleven feet deep on the outside. It was given two keels and two keelsons; the former to act as guides in launching, the latter to form a bed for the obelisk to rest on, and both to give it additional strength. The dimensions were determined by its weight with the obelisk in it, and the depth of water at the end of the launching ways, which was about seven feet at mean level of the tide.

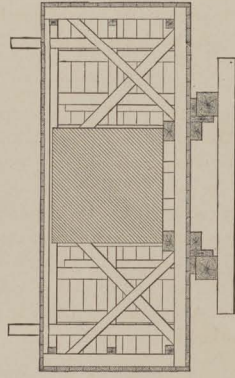
LOWERING THE CAISSON ON THE LAUNCHING WAYS.

The accompanying figure illustrates the method of lowering the caisson with the obelisk in it on the launching ways. It was pivoted at the point (*A*) of intersection of its keels with the launching ways, which were laid in sections. The pivot was an oak beam, rounded on the lower side to fit into the curves of the pillow-blocks (*C*) of the turning structure, that had been placed on the blocking (*D*) underneath the caisson. The aggregate weight of the caisson and its contents was three hundred and seventeen tons. To provide adequate bearing surface for the pivot, it was found necessary to excavate some distance below the water-level, and pack pieces of heavy timber close together over an area twenty-five feet square. A similar bearing surface or foundation (*E*) was provided for the hydraulic pumps (*P*) that were to lower the sea end of the caisson to its position on the ways. The difficulties of this operation were much increased by the contracted space in which the work must be done, the want of light, and above all the encroachment of the sea. The break-water had necessarily been removed to place the launching ways in position; and the surf almost continuously poured a large volume of water into the pit. Powerful pumps were kept at work without reducing the water-level to any great extent.

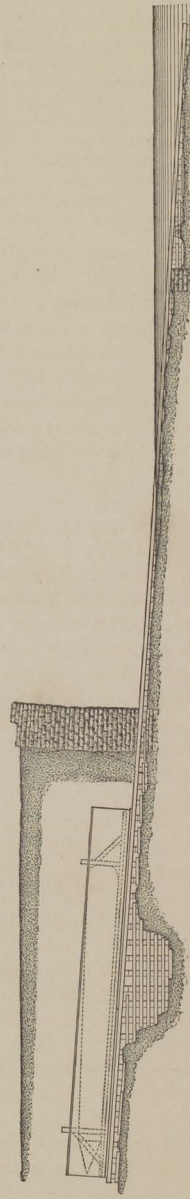
I regard this part of the work, that is, the operation of placing the caisson on the launching ways and launching it, as attended with more embarrassments and risks than any other. We were restricted



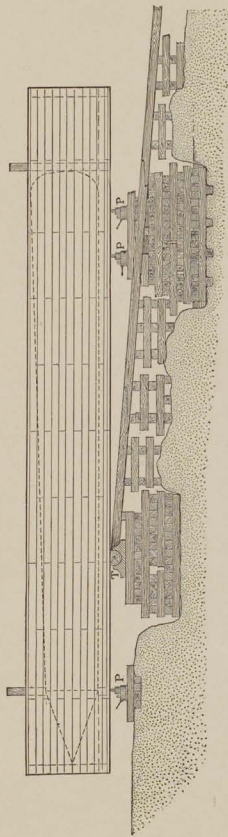
CAISSON AFLOAT



SECTION THROUGH CAISSON AND OBELISK

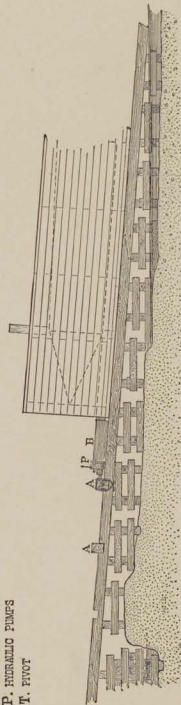


PREPARATIONS FOR LAUNCHING ALEXANDRIA



PIVOT FOR LOWERING CAISSON ON LAUNCHING WAYS

- A. ANCHORS
- B. TIMBER RACKING
- P. HYDRAULIC PUMPS
- T. PIVOT



ANCHOR FOR HYDRAULIC JACKS TO PUSH CAISSON AFLOAT.

to an inadequate space for carrying on the work conveniently; we were operating on an exposed coast in the stormiest season (March), with the sea breaking dangerously at least two thirds of the time; and we were without sufficient hydraulic power to lower the sea end of the caisson without great risk. Hydraulic pumps available for the work could not be obtained nearer than New York City, and it was not possible to have those that had given out satisfactorily repaired in Alexandria.

RÉSUMÉ OF OPERATIONS FROM DECEMBER 6TH TO MARCH 18TH.

The time that had elapsed from December 6th, when the obelisk was placed horizontal, to March 18th, when it was ready for launching, was occupied in building the stacks of timber for lowering it, releasing the turning structure, lowering the obelisk from a height of forty-three feet, demolishing the foundation walls of the towers, removing the pedestal, steps, and foundation to make room for building the caisson and placing it on the ways, and building and laying the ways. It was not possible to carry on these different operations simultaneously. Their accomplishment in less than ninety working days, with an almost continuous surf breaking on the shore, constantly embarrassing and frequently suspending work, seems at this interval of time to have been very expeditious. The diving operations, already alluded to, for clearing a track for the launching ways, were carried on continuously when the state of the sea would permit; but it was a common occurrence for one day of heavy surf to destroy the results of many days' work. Nothing more disheartening can be imagined than to witness the destruction in a few hours of the results of many days of costly labor without the possibility of preventing it. The foreign merchants of Alexandria, who forced on us the sea transportation of the obelisk to the port by withholding their consent to its passage through the city, must have felt a grim satisfaction in witnessing the consequences of their decision. The worst result of their refusal was the difference in cost of the work, amounting to about \$21,000.

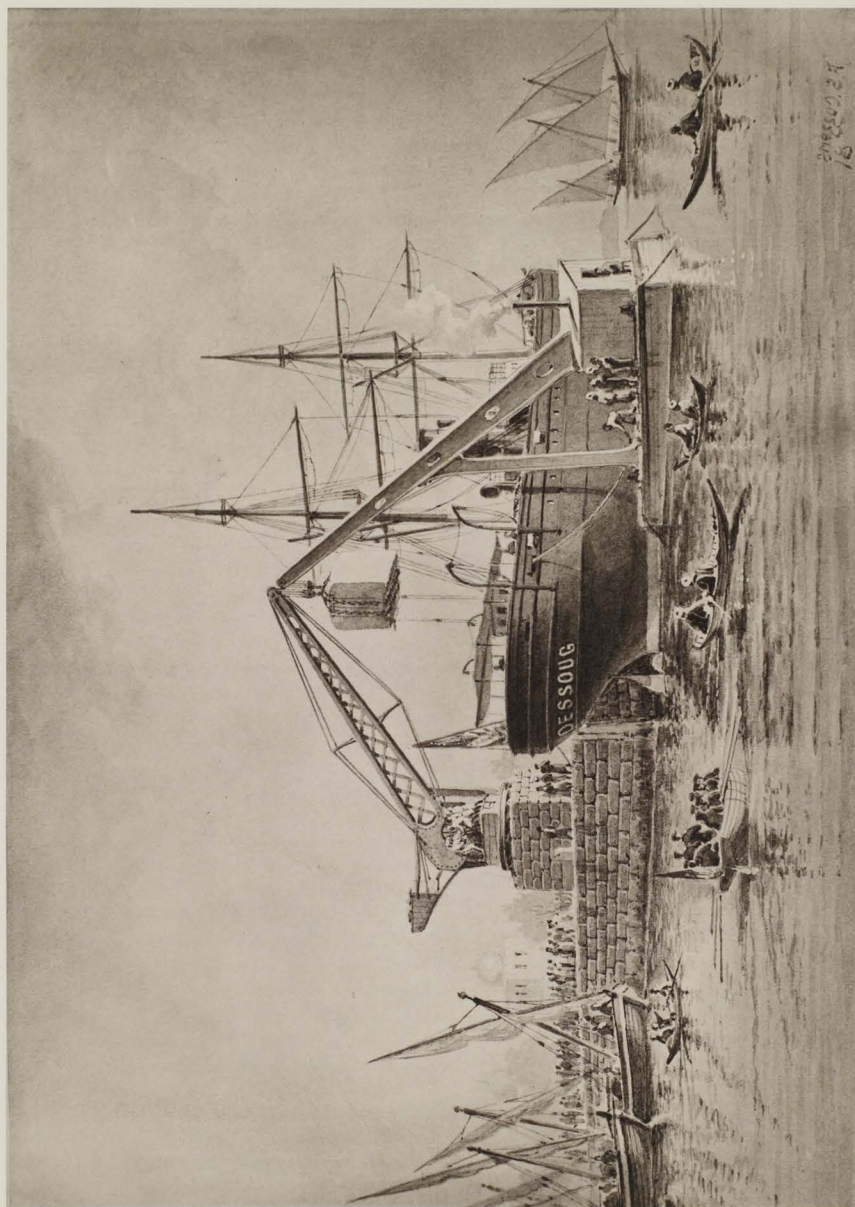
LAUNCHING THE CAISSON.

There was every reason to feel assured that the caisson would slide down the ways after having been started. An abundance of lubricant was used on the ways to facilitate it, and every precaution taken against fouling of the sliding surfaces. A final examination of all parts, including those submerged, was made on the morning of March 18th, and at 11 A. M. of that day the lashings that held the caisson were removed. A powerful tug was waiting to tow it around to the port. The smaller hydraulic pumps, which had been placed in position to give it a start, were brought into action, and under pressure from them the caisson began to move very slowly at first, then more rapidly, and after it had slid a distance of twenty feet it abruptly stopped sliding. A tow-line was run out to the tug, and two anchors were planted off shore with cables leading to the caisson. The combined force of the tug and threefold purchases on the cables did not move it an inch. At this critical time the sea, which had been smooth, began to rise rapidly, and the tug was obliged to seek shelter in Alexandria harbor. By dark the sea had become so rough that all efforts to get the caisson afloat had to be suspended. By the next morning the sea had moderated, and our efforts to push the caisson into the water were renewed, in the belief that it would slide of its own accord if it could be started with rapid motion. But in this we were mistaken; there was no alternative to pushing it inch by inch down the ways with the hydraulic pumps until it was afloat. This tedious process lasted until March 31st, with frequent intervals, during which operations had to be suspended on account of the surf. One of these, on March 21st, caused us much anxiety. The caisson had by that time been pushed down the ways to a position where it was about half water-borne. In this position the sea end was liable to be raised by the waves, thereby causing it to thump heavily on the ways, with liability of breaking the obelisk and the almost certainty of displacing it and destroying the caisson. To provide against these dangers, water was admitted to the caisson and the sea end was strengthened

by shoring the frames against the obelisk so as to resist the vigorous blows of the waves as they broke over it. When the gale subsided, an examination showed that no damage had been done. The water was pumped out of the caisson, and pushing it down the ways was resumed. Finally, on March 31st, at 10 A.M., our efforts were rewarded, and by 3 P.M. the caisson was safely moored in the port of Alexandria, having been towed around by the Peninsular and Oriental Company's tug "Ausari." Plate xii, *A*, illustrates the method adopted for pushing the caisson afloat with the hydraulic pumps (*P*) applied to the ends of the keelsons (*K*). The anchor against which the pumps bore was a timber beam let into a slot cut in the upper part of the ways and held in place by chain lashings. The beam had to be shifted when the caisson had moved about ten feet; the space between the pumps and beam was filled with blocking, which could not be held in place when it exceeded ten feet in aggregate length. The force required to move the caisson varied unaccountably from about one hundred tons pressure down to not less than ten. The cause of all this difficulty was subsequently ascertained to be the stripping of the sliding ways, doubtless through the presence of some hard substance that had been washed in by the surf during the storm of March 18th.

PURCHASE OF THE STEAMER "DESSOUG."

While the operations of lowering the obelisk and launching the caisson had been progressing, preparations were being made for embarking the obelisk on the steamer "Dessoug." This vessel had been purchased from the Egyptian government expressly for transporting the obelisk to New York. She is an iron steamer built in England in 1864 for the Egyptian government, and had been employed chiefly in the Egyptian postal service between Alexandria, Smyrna, and Constantinople. Extravagance and corruption in the service had caused the withdrawal of several of the steamers employed in it, the "Dessoug" among them. The service had never been a profitable one to the Egyptian treasury. When the financial administration of Egypt passed under the control of a European commission, abolishing the service altogether was contemplated; but the influence of the European employés effected a compromise, and it was finally determined to continue the service under the management of Europeans, as long as it did not sink money and draw the deficiencies from the Egyptian treasury. To insure this result superfluous vessels and useless material were sold from time to time for any thing they would bring. Very soon after our arrival at Alexandria, and while still negotiating for the charter or purchase of English and Italian steamers, my attention was attracted to the "Dessoug," then lying dismantled in the arsenal, chiefly by the fulness of her form, and particularly of her bow-lines. Measurements were made, which satisfied us that there was just height enough under the lower-deck beams to embark the obelisk, and length enough to get it entirely into the fore compartment, between the collision and coal-bunker bulkheads; and as this was an exceptionally advantageous feature of the vessel her purchase was determined on. Her engines and boilers were known to be in bad condition, but her hull was perfect; her hold was filthy, and she had been neglected to a degree that cannot be imagined. To refit and repair her, a long time and a large expenditure were necessary, which made it essential to purchase her at a low price. To effect this it was decided not to make an offer at once, but to treat the matter with apparent indifference. The result was the commencement of negotiations by the Assistant Postmaster-General, as we would term him here, which gave me a very decided advantage in conducting them. After several informal conferences an offer of £5,000 sterling was made in writing to the Postmaster-General, who affected to regard it as a joke, and suggested that the matter be treated seriously as to price, adding that other negotiations were pending for the purchase of the "Dessoug." A firm of ship-brokers who had been trying to charter or sell me a vessel had been informed of my negotiations with the Egyptian government for the purchase of a vessel, and had made an indefinite offer for the "Dessoug," with a view to being bought off by me. One member of the firm proposed to withdraw his offer if he was paid a commission of ten per cent. on the purchase-money. This was treated in a



BRISTOL, N. Y.

ARTIST

way it deserved; and in order to bring matters to a crisis formal notice was given to the Ministry at Cairo that my offer would be withdrawn at noon of December 3, 1879, unless it had been formally accepted before. The government then accepted the offer of the brokers, and demanded a guarantee of payment within a specified time. As they had no use for the vessel except to sell her to me, they offered her to me for £6,000. They were informed that the "Dessoug" would not be purchased from them under any circumstances. They could not give the guarantee demanded, and when the time allowed them had lapsed, I was notified that I could have the vessel on the payment of £5,100 sterling. The money was promptly paid, and the transfer effected on December 3d. It cost nearly as much more to refit, repair, and clean the "Dessoug"; and this work was carried on under the immediate supervision of Lieutenant Seaton Schroeder, U. S. N., simultaneously with that of lowering and launching the obelisk, to which I gave my personal attention. Pending the negotiations for the purchase of the "Dessoug," one other of the government vessels laid up in the arsenal was sold. Before the transfer from the government to the purchaser could be effected, a warrant was issued by the court taking possession of the vessel, or the money paid for her, in the interest of some one who had a claim against the Egyptian government. To avoid a repetition of this inexplicable performance in the transfer of the "Dessoug," the conclusion of the purchase and time fixed for transfer were kept secret. The transfer was effected in the office of the Director of the Postal Service, whose representative accompanied me on board, and hauled down the Egyptian flag, while I hoisted United States ensigns to the mast-heads and peaks. The Arabs in immediate charge of the vessel looked on in amazement at this performance. When ordered to gather up their personal effects and leave the vessel, they made no protest, but deferred their departure until they had prayed fervently and impressively. That a seizure of the "Dessoug" had been arranged for there can be no doubt, but no serious attempt was ever made to execute it. A notice in Arabic, Greek, Italian, French, and English was posted on each gangway, prohibiting any one from going on board without a pass from Lieutenant Schroeder, at the peril of their lives. Several persons approached the gangways in boats near enough to read the notice, but made no attempt to board the vessel. Any such attempt would have been met by force, if necessary. In justification of this course it must be conceded that the court had no right to issue a warrant to seize the property of an American citizen, unless it was for debt or violation of Egyptian law. Neither of these causes existed, and as there was no one on whom I could call for protection, I was bound to protect my property myself, with all the means in my power.

The nationality of the "Dessoug" was a delicate question to settle. Under the laws of the United States she could not be registered as an American vessel. Sailing under the Egyptian flag would have involved serious risks and embarrassments, especially in connection with the crew. The British or other European flag would have been more objectionable from every standpoint, especially in the evasion of laws relating to ownership. There was no other course than open defiance of law, which the circumstances fully justified; and I determined to make the voyage from Alexandria to New York without registry or nationality, thereby taking the risk of having my steamer seized by any vessel of war at sea, or by the authorities of any port I might be obliged to touch at. Gibraltar was the only port that it was desirable for me to touch at, and there only for coal. Personal acquaintance with the chief military and naval authorities there gave me confidence that the ship's papers would not be too closely examined. To remove all risk I made arrangements for taking in coal from lighters awaiting our arrival on the eastern side of Gibraltar Peninsula, in the event of any hesitation to admit us to the port.

The following is the only "document" I should have been able to produce, had the "ship's papers" been demanded.

Removal of the New York Obelisk.

ALEXANDRIA, 2d December, 1879,
12 o'clock noon.

In consideration of the sum of £5,100 sterling paid by Captain Gorrings, the Director-General of Posts, duly authorized by the Egyptian government, transfers the S. S. "Dessoug," with her equipment, into his possession, and recognizes that he is the sole proprietor from this moment.

The Director-General of Posts,

CAILLARD.

THE EMBARKATION OF THE OBELISK DELAYED.

One of the conditions of the purchase of the "Dessoug" was that the government floating-dock should be used for embarking the obelisk as soon as it was ready for embarkation. The English cylinder containing the London obelisk had been placed in the dock for repairs prior to its departure from Alexandria, and a charge only for actual expenses incurred, was made. The order of Riaz Pacha, the President of the Council of Ministers, that we should have the same privileges as the English, was reiterated, at my request, in relation to the use of the dock, and every precaution possible was taken to ensure admittance to it as soon as the obelisk arrived in the port. It arrived on March 31st, and was all ready to enter on the next day. But the Egyptian official, who had control of the dock, had other plans; he ordered several small river steamers to be hauled in, which was done without a word of warning to us; and before we could appeal to Cairo the dock was pumped out and plates torn off the bottoms of the steamers, so that they would not float and could not be ordered out by the Ministry. The steamers were of such a size that hauling them out of water, on shore, would have cost less than it did to dock them. The conduct of the official cannot therefore be excused on any ground.

Nearly five weeks elapsed before the dock was again disengaged. The caisson containing the obelisk was, however, placed in it on April 12th, by lowering the dock to a depth of seven feet, which did not affect the small steamers beyond washing out their filthy holds and destroying some of the vermin for which they are justly celebrated. The official referred to, fought hard to prevent even this being done, and would not yield, in spite of peremptory orders from the Ministry in Cairo, until I had consented to the docking of another vessel before the "Dessoug" was placed in the dock. This I had to do, as the caisson was leaking badly and there was danger of its being sunk by accident or design as long as it was afloat. As soon as it was in the dock it was demolished, not so much to advance the work of embarkation as to insure the obelisk not being removed from the dock until it had been embarked in the "Dessoug."

There was a widespread belief in Alexandria that the obelisk could not be embarked in the manner proposed, and this had doubtless influenced the action of the official, who spoke of the embarkation as something that would either entirely destroy the dock or at least occupy it to the exclusion of all other business for a very long time.

TRANSPORTING AND EMBARKING THE PEDESTAL AND STEPS.

It had been intended to use the caisson that took the obelisk to the port, for removing the pedestal and steps. To avoid delay and utilize the time we were obliged to wait for the dock, we chartered a lighter that had been used in the construction of the breakwater of Alexandria harbor, and hauled her up on the same ways that the caisson was launched on. After the lighter had been hauled up and carefully blocked, the pedestal was raised by the hydraulic pumps to the height of her deck, and moved on it in the same manner as it had been moved aside from under the obelisk, by placing it on cannon-balls. The steps and foundation and the pieces comprising the turning struc-

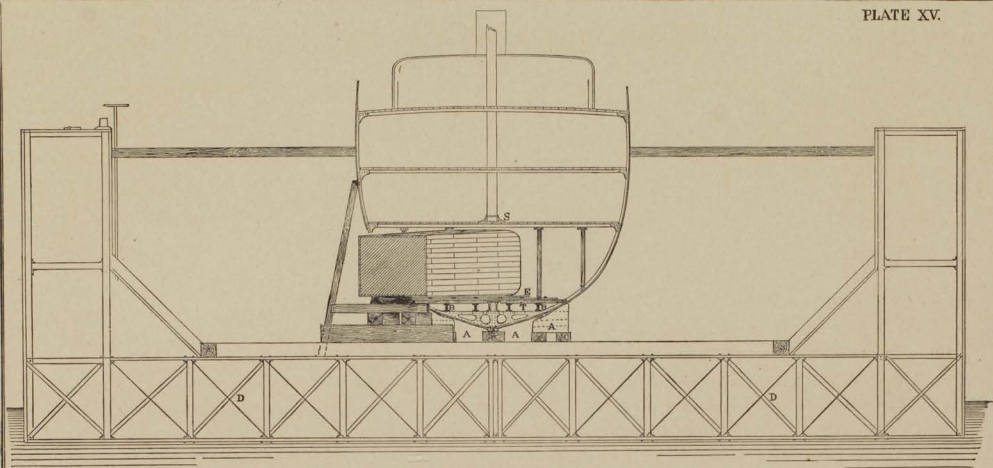


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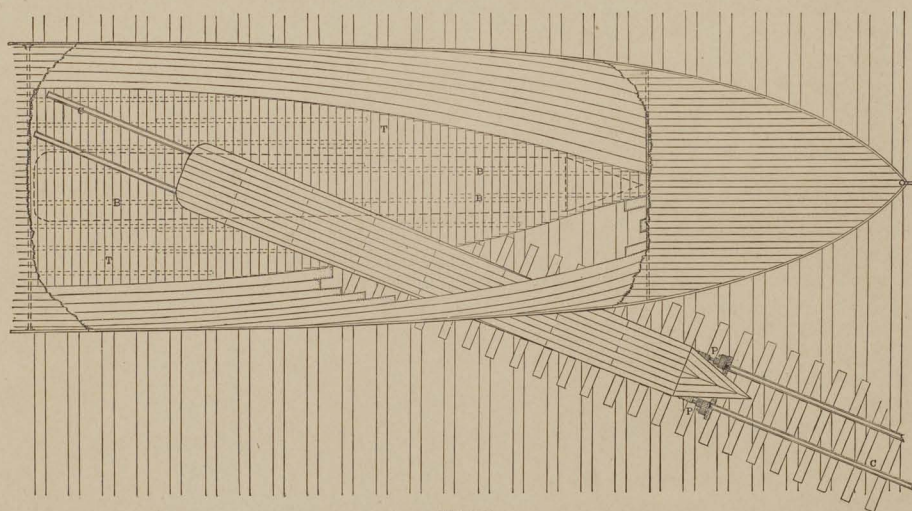
HARRON & BIERSTADT, N. Y.

EMBARKING THE OBELISK.

Plate XIV



SECTION



PLAN

- B. STEEL BEAMS.
T. TIMBER PLATFORM.
C. CHANNEL IRON TRACK.
S. NEW STEP OF FOREMAST.
A. BILGE BLOCKS AND POSITION OF TIMBER PACKING.

- D. BOTTOM OF DRYDOCK.
E. CHANNEL IRONS AND BALLS.
F. HEEL BEAMS.
P. HYDRAULIC PUMPS.
G. IRON PLATES.

SLUING OBELISK IN STEAMSHIP'S HOLD
EMBARKING THE OBELISK

ture were also placed on the deck of the lighter, which had been designed to sustain a load of two hundred tons. The aggregate load placed on it was one hundred and seventy tons. Every thing having been secured for the trip by sea around to the port, the lighter was successfully launched and towed around on May 1st.

The pedestal weighs nearly fifty tons. It had to be placed in the after-hatchway, on an iron frame or stand that had been prepared for it and constructed so as to distribute the weight over a larger area than that of the side or base. There was just room enough in the hatchway to admit the pedestal sideways. To get it into the ship it had to be turned over on its side first, and then lifted thirty feet above the deck of the lighter to clear the bulwarks of the "Dessoug." The most powerful crane in Alexandria was one on the arsenal quay, capable of lifting only thirty tons. Besides this there was a floating steam-derrick capable of lifting twenty-five tons. Before incurring the expense of rigging special shears, it was determined to try lifting the pedestal simultaneously with the crane on shore and the derrick afloat. To insure proportionate distribution of the weight between the crane and derrick, a computation was made to determine the displacement of the floating derrick at different angles of the plane of the deck of the float with that of the water, and a mark was placed on the float at the point to which it would be submerged when sustaining a weight of twenty-two tons on the hoisting chain. This enabled us to insure no more than twenty-eight tons weight on the shore crane by keeping the mark on the float at the water level, which was made possible by the more rapid lifting purchase on the floating derrick. (See Plate xiii.)

The pedestal was slung with four parts of steel-wire cable, one and a half inches in diameter, capable, theoretically, of sustaining three times its weight. The lighter was hauled under the purchases, between the floating derrick and the quay; the purchases were hooked to the wire cable on one side of the pedestal, which was quickly turned over, and gradually lifted clear of the lighter without indications of excessive strain on any thing. The lifting continued until the pedestal was thirty feet in the air and high enough to clear the steamer's rail. The lighter having been hauled out, the stern of the steamer was being hauled under when a sharp sound was heard and the pedestal was observed to be oscillating. It was known positively that nothing had touched it to cause oscillation or vibration. If it had fallen while the steamer's stern was under it the destruction of that end of the vessel would have been the result. The "Dessoug" was hauled ahead as rapidly as possible; when her stern was well clear and nothing remained between the pedestal and the water, an examination was made, and one of the four parts of the steel-wire rope with which it was slung was found to have stranded. Only two of the seven strands remained uninjured. The pedestal was then lowered in the full expectation that it would fall into the water, whence it could be recovered without serious difficulty. But the two strands held on; and the lighter having been hauled underneath, the pedestal was once more safely landed on her deck. The cause of the stranding of the wire rope has never been explained. On the day following, May 6th, the pedestal was slung with a part of the "Dessoug's" bower chain cable, by which it was hoisted to the requisite height; and after the steamer had been placed in position, it was lowered into the hatchway and landed on the stand without incident. (See Plate xiii.)

EMBARKATION OF THE OBELISK.

During the four months that elapsed between the purchase of the steamer and arrival of the obelisk in the port, preparations had been made to embark the obelisk with dispatch. A platform had been constructed in the forehold by bolting the steel beams (*B*, Plate xv) of the turning structure to the frames of the vessel, and building on it a timber bed (*T*, Plate xv) on which the channel-iron tracks (*C*, Plate xv) could be placed in any direction desired. The steel beams gave great additional longitudinal strength to the hull, and served to distribute the weight of the obelisk over the whole

structure. Without them the weight would have been concentrated on the keelson. Other preparations consisted in removing the single row of stanchions that held up the lower deck from over the keelsons, and substituting for them two rows, one on each side, over the bilge keelsons. The foremast was unstepped, and that part below the lower deck cut off. A new step on the lower deck was provided and the mast replaced. The frames that had to be removed to make the aperture for admitting the obelisk had all been cut, and the pieces for replacing them had been shaped, drilled, and fitted to their places with screw bolts. The plates above the water-line had been removed, and a large supply of tools provided for cutting off and driving out rivets, and for replacing them.

On May 10th the "Dessoug" entered the dock. A foreman shipwright from Glasgow had been brought to Alexandria expressly to superintend the opening and closing of the aperture. Three gangs of thirty men each, of Arab boiler-makers, had been selected and engaged; and as soon as the vessel was high and dry the work began, and was carried on without intermission day and night, each gang working eight hours, until the aperture had been opened. About seven thousand rivets, sixteen frames, and thirty plates had to be removed from the starboard bow to make the aperture large enough to admit the obelisk at the angle of 21° with the keel, the greatest angle at which it could be embarked without turning it twice during the embarkation. (See Plates xiv and xv.)

When the caisson containing the obelisk had been placed in the dock, it was placed at this angle with the axis of the dock. And when the "Dessoug" was hauled in, her bow was hauled up to the proper distance from the base of the obelisk, and held there until it had landed on the keel blocks; so that, when the dock had been pumped out, the relative positions of the vessel and the obelisk were exactly as they were designed to be.

While the aperture was being opened, gangs of carpenters were engaged in packing timber under the forward run of the steamer's hull, and under the track of the obelisk, so as to prevent straining of the frames. (Plate xv.) Only those who were engaged in this work can realize the difficulty of shaping the timbers to fit closely to the iron, and this consumed a large part of the time occupied in preparing to embark the obelisk. It was so thoroughly executed, however, that not one rivet or seam admitted a drop of water after the vessel was afloat, a result not even dreamed of. It was expected that the vessel would leak freely in all seams under the track of the obelisk, and extra provision had been made to pump out the water during the voyage.

The space that intervened between the obelisk and the aperture was bridged over with heavy timbers, supported on very long oak beams laid on the flooring of the dock, directly over the trusses *D*, Plate xv, that extended across the bottom of the dock. The bed of the track was thus a continuous one from where the obelisk had been landed on the dock, through the aperture, and into the hold. As soon as this track had been completed, the obelisk was raised by the hydraulic pumps, and while suspended on them the channel irons and cannon-balls *E* were placed under it on each side, near the edges. Soft wood was packed in between the upper channel iron and the obelisk to insure uniform pressure on the balls. The obelisk was then landed on the channel irons. The balls were $5\frac{1}{4}$ inches in diameter, and placed at intervals of 18 inches. Plates xiv and xv give a better idea than can possibly be given in words, of the general plan for embarking the obelisk. Plate xiv is taken from a photograph made while the obelisk was actually in motion, and just as its base was entering the aperture.

The power employed for moving it was two hydraulic pumps (*P*) pushing against the outer end, and at no time was it necessary to exert more than five tons pressure in order to start it. The time occupied in opening the aperture, laying the track, blocking under the vessel, and placing the obelisk on the channel irons and balls, was ten days; the time occupied in embarking the obelisk was eight hours.



ARTIST

HARBOUR & SHIPSTOCK, N. Y.

THE STEAMER DESSOUG WITH THE OBELISK ON BOARD READY FOR DEPARTURE FROM ALEXANDRIA

The ship's frames were replaced as fast as there was room for them to be fitted into position, and almost as soon as the point of the pyramidion was within the vessel the last frame was up and riveted.

As soon as the obelisk was entirely inside of the hold it was lifted clear of the track, which was then removed from under it. There was hardly room enough to lift the weight clear of the channel irons; the work of removing them and the balls was tedious and trying beyond description. There was so little room to spare that all operations inside of the vessel were greatly embarrassed and delayed.

Plate xv illustrates the apparatus for turning the obelisk to parallel with the steamer's keel, with the axis directly amidships. The bending of the heel beams of the turning structure, it will be remembered, had caused me much chagrin when the weight of the obelisk had been transferred to them (see page 14). The bent keel beams (*F*) were utilized in the arrangement of the "turn-table," shown under each end of the obelisk in this figure. The obelisk was landed on them, with soft wood intervening to prevent injury to the edges; underneath the keel beams were the iron plates *G*, also belonging to the turning structure. These are shown on Plate ii in the position they were used while turning the obelisk horizontal in Alexandria, and on Plate xxviii while placing it on its pedestal in New York. Their function in the operation (illustrated on Plate xv) of turning the obelisk parallel with the keel was simply to reduce friction. The arrangement of this "turn-table" occupied two days. When it had been completed, hydraulic pumps (*P*, Plate xv, lower figure) were applied to the two ends of the obelisk, in opposite directions, and the obelisk was moved into position in three quarters of an hour. Shores were set between the ship's side, where the pumps rested, and the dock, to form anchors for the pumps to work against. The force exerted in turning the obelisk was equivalent to about twenty tons.

PREPARING FOR THE VOYAGE.

On June 1, 1881, three weeks from the day the vessel entered the dock to embark the obelisk, she was floated out with the obelisk on board. She was immediately hauled under the arsenal shears, to re-embark her ballast and equipments that had been removed prior to entering the dock, and to embark the pieces forming the base and steps of the obelisk. The largest of these pieces weighed seven tons, and the smallest nearly a ton. A force of the best shipwrights that could be hired in Alexandria was engaged shoring and stowing the obelisk for the sea-voyage. To obviate all risk of breaking the obelisk by the working of the ship, it was placed on a bed of Adriatic white pine, very spongy and soft, and ten feet of the extremities left without support. To prevent it from moving laterally, a system of horizontal, diagonal, and vertical shores were fitted into the hieroglyphs, and driven against the stringer-pieces of the steamer's hull; and the vacant spaces between the deck beams and the upper face were packed with wood so tightly that the wedges had to be cut out after our arrival in New York. The diagonal shores from the lower edges of the side faces were notched on the outboard ends, which were driven astride of the webs of the lower deck beams, and then shored up from the wing stringer-pieces. This alone made it impossible for the obelisk to move in any direction, and I have no hesitation in stating that the vessel might have laid on her "beam ends" without causing the obelisk to break adrift.

A judicious distribution of the pieces forming the steps and base, the ballast, and the pieces forming the turning structure, and other heavy material, brought the vessel to a good trim, and insured easy motion in a sea-way. Additional coal-bunkers were provided by building bulkheads between the upper and the second decks.

Providing a crew and securing a reasonable rate of insurance for the voyage had been the cause of endless trouble and negotiation from the day the vessel was purchased until the day she sailed. As there are no commercial steam-vessels of the United States trading to Mediterranean ports, I was

obliged to send to Great Britain for officers and engineers, and to Trieste for a crew. The chief engineer, a Scotchman, had been in the Egyptian postal service, and had served several years on the "Dessoug" while she was employed in that service. He was engaged the day after the steamer was purchased, and remained on full pay during the five months and a half that elapsed between that date and our departure. He was supposed during this time to be engaged in thoroughly examining, overhauling, and repairing the machinery and boilers, having been provided with skilled mechanics to assist him. Yet he allowed a serious flaw in the shaft to escape detection. The first and second officers, the second and third engineers, and three quartermasters were sent for, to England. The first and second officers turned out to be confirmed drunkards; the latter so bad that he had to be dismissed to prevent him from killing himself. He fell twice from the second deck into the hold, and twice overboard, while drunk. The engineers were useful, hard-working, hard-drinking men. The quartermasters would do credit to a pirate's crew. The number of men who solemnly enlisted for the voyage and speedily deserted before it began, was forty-eight. Despairing of being able to secure a crew in Alexandria, I sent my power of attorney to Trieste, to a ship-agent there, with authority to enlist the requisite number, and, in addition, to make a contract with each one for the voyage. I relied on having these men arrive upon the day the vessel was ready for sea, and on getting away from the port before they had time to think about it. They arrived, however, the day the vessel was floated out of the dock. All but three remained. One man that had been shipped in Alexandria, named Jacob Zuratic, a Delmatian, stuck to the vessel throughout. It was his influence over his countrymen from Trieste that made them remain by the vessel and undertake the voyage. As the "Dessoug" had no nationality, deserters could not be arrested. But four of the crew, besides the quartermasters, could speak or understand a word of English. It must be evident that, considering the circumstances, commanding the "Dessoug" was not the most desirable and comfortable of occupations. Without the means of legally enforcing discipline, the only available method was the summary one.

The embarkation of every thing but coal was completed by June 7th. On the 8th the vessel was hauled away from the quay and moored to buoys. On that day and the next, five hundred tons of coal were taken on board. On the 9th and 11th I visited Cairo to take my leave of the Khedive and his Ministers, and to thank them for not having yielded to the pressure and influence exerted by foreign residents to revoke the gift, and for their steadfast friendship throughout. They expressed the greatest gratification at the successful removal and embarkation of the obelisk without damage, stating that otherwise it would have been embarrassing to them.

On my return to Alexandria the only thing remaining to complete our preparations was the final arrangements for insurance. The underwriters had yielded gradually from their demands for twenty-five per cent. premium down to five per cent., at which they stuck. I had insisted that the marine risk was not an extraordinary one if the general average clause was omitted and their liability for damage limited to total loss, and I gave notice to my London agent that I would pay no more than two per cent., and make the voyage without insurance if this rate was not conceded. After holding out for five per cent. until the day before our departure, the agents telegraphed to Europe that the steamer would certainly proceed to sea without insurance on the next day. This brought me a great many acceptances of two per cent., and insurance was effected by telegraph at this rate in a number of selected companies. Finally, at 2 P.M., of Saturday, June 12th, the moorings were cast off and the "Dessoug" steamed out of port amidst the sounding of steam-whistles, the cheers of ships' crews and boatmen, and a general dipping of colors. One gentleman who had watched our work with close attention bade me good-by, saying that he hoped we had good boats, well equipped and provisioned. A boat load of the Arabs who had been employed on the work all the time we were in Alexandria accompanied us to the entrance of the port, and hastily took their departure when the vessel began

to feel the swell and to roll. To Lieutenant Schroeder and myself the open sea, with the comparative rest and relief that it brought, was acceptable and enjoyable beyond expression.

THE VOYAGE.

The wind freshened and the sea increased gradually as we drew away from the land. The behavior of the vessel was most satisfactory; her pitching motion was slow and easy, her rolling exceptionally gentle. Perfect confidence in the efficiency of the stowage and the ability of the steamer to make the voyage with no greater risk than is involved in any similar voyage, was quickly acquired by the crew, who settled down to the monotonous routine of an ordinary merchant-steamer. The head-wind and sea continued for four days. During one night it blew a moderate gale, and while off the coast of Algiers we experienced violent squalls, accompanied by intense electrical discharges. Passing Malta at noon of the 17th, we ran close in to attract attention, so as to be reported to the Maritime Exchange in London. Having no distinguishing signal or registered number, the name of the vessel had been painted on the bows and stern in letters two feet long. At 8.30 P. M. of June 22d, we anchored off Gibraltar, having steamed 1,738 knots, and averaged almost exactly seven knots per hour. The only unpleasant feature of this passage was the leaking of both boilers in every furnace, which prevented them from making adequate steam. There was no excuse for this condition of the boilers. The chief engineer had been allowed all the labor and material he wanted to put them in efficient condition, had expended enough to do so, and had reported them thoroughly repaired. Immediately after our arrival at Gibraltar the fires were hauled, and as soon as the boilers had cooled off sufficiently, a force was put on to repair them. This work detained us three days, during which we took in five hundred and fifty tons of coal. A large number of people visited the ship to see the obelisk, among them Lord Napier of Magdala, the Governor, and his staff, accompanied by Lady Napier and a number of other ladies.

We sailed from Gibraltar at midnight of June 25-26th, having on board a total dead weight of 1,470 tons, not including fixtures of the vessel, drawing 15 feet forward and 17½ feet aft. On the following day we experienced a fresh breeze from the northward, and a heavy beam sea which caused the vessel to roll deeply. On June 30th we passed through the Azores, the weather having been variable and at times disagreeable. On July 6th, at 8.30 P. M., when 1,500 miles from New York, with a smooth sea and a moderately fair wind, the engines came to an abrupt standstill after a short interval of unusual and noisy performance. Examination showed that the after-crank shaft had broken through an old flaw or crack in the after-web. Fortunately, the breaking of the shaft was the only damage done, and there were two spare sections of shaft on board, one of which belonged to the after-engine. Boring the large holes in and fitting the brasses to the new section, occupied all the men that could work at it, night and day, until July 10th. Connecting the engines took two days more. On July 12th we started ahead again under steam.

A curious incident in this connection is the persistency with which I insisted on having this section of the shaft delivered to me from the arsenal in Alexandria. According to the terms of purchase, "all equipments and spare articles on board and in store, that properly belonged to the 'Dessoug,' were included." This section of the shaft was in store, and it took me four months to get the authorities to deliver it. They had no use for it, and it appeared to them as if I had not; but it belonged to me, it was an excellent thing to have on board, and I never ceased demanding it until it was delivered, five days prior to our departure from Alexandria.

During the six days we were replacing the broken shaft the progress of the vessel, under sail alone, toward New York was seventy-six knots. At this rate it would have taken us one hundred and twenty days to complete the voyage. On the day following the accident we communicated with and purchased some bread from the Austrian bark "Nettuno" of Perzagno, Captain Emilia Zucovich,

twelve days out from New York, bound to Constantinople, with a cargo of petroleum. The following telegram was delivered to the captain, with the request to send it from the first port he touched at :

SECRETARY OF THE NAVY, WASHINGTON, DISTRICT OF COLUMBIA, UNITED STATES OF AMERICA.

Steamer "Dessoug," with obelisk, broke crank shaft July 6th, latitude 37°, longitude 47°. Spare shaft is being fitted; probable detention ten days. Until repairs are completed will try to keep between parallels 37° and 38°.

The dispatch reached Washington about two weeks after the "Dessoug" reached New York, having been sent from one of the Azores.

An incident occurred on July 10th which caused me more anxiety than any thing else during the voyage, much more than the breaking of the shaft. The weather had been squally, with heavy rain all day. Water-spouts were seen to form and dissipate without completing the column several times during the day. One formed directly to windward of the vessel, and after appearing to dissipate, it suddenly reformed much larger than before, and began moving directly toward us. Every precaution was taken to cover the hatches and skylights and open the bulwark ports, so as to exclude the water from below. After watching it closely it was evident that we were in for a deluge unless the course of the vessel could be changed. This was impossible owing to the lack of wind, which had in the meantime entirely died out. There was nothing to do but to await the deluge calmly, for we had no cannon to fire and break the spout. It kept us in suspense for about five minutes, and then abruptly changed its course, passed about fifty yards ahead of us, and broke with some noise about a thousand yards from the vessel. The danger feared was in the probable bursting in of our decks by the weight of the column of water which appeared at least fifty feet in height.

On July 13th, 14th, and 15th we experienced a westerly gale, which blew very hard from S. W. during the night of the 14th and day of the 15th, with a high sea that almost arrested our progress entirely. The behavior of the vessel was exceptionally good, as far as her motion was concerned, but she shipped two seas, among many others, which did considerable damage to boats and skylights. Very close watch was kept of the obelisk and its fastenings, but not the least motion was detected in any thing connected with them. With the fullest confidence that the vessel was able to stand any weather, she was held to her course and driven through the gale as hard as the boilers would permit, so as to reach port on the day set for our arrival—not later than July 20th,—and to avoid the usual but needless anxieties experienced by landmen when vessels are overdue.

On the morning of July 19th we took on board Pilot Murphy, from N. Y. Pilot-boat A. M. Lawrence, No. 4. On that evening we stood in toward Fire Island, and made a pre-arranged signal which caused us to be reported in New York. At 2 A. M. of July 20th we anchored off Staten Island, at the Quarantine Station, and after having been granted pratique, moved up the Hudson and moored off Twenty-third Street during the afternoon. The crew and officers were promptly discharged, excepting three Arabs, who had been brought over, at their own urgent request, as cabin servants. One of these, a boy named Hassan, was an object of as great curiosity as the obelisk. During the ten days from July 20th to 30th the "Dessoug" was thrown open to visitors. On one day seventeen hundred and eleven persons visited the vessel between 7 A. M. and 8 P. M.

SELECTING THE SITE.

Before our departure from the United States in August, 1879, the spot on which the obelisk was to be erected in New York had been selected, after due deliberation, by Mr. F. E. Church, Mr.



ARTIST

HARRISON & BIERSTADT, N. Y.

TRUCKING THE PEDESTAL

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W. H. Hurlbert, and myself. Mr. W. H. Vanderbilt had expressed a preference for the Central Park, in the vicinity of the Metropolitan Museum. In order to avoid needless discussion of the subject, it was decided to maintain the strictest secrecy as to the location determined on. The site that was adopted, the spot on which the obelisk now stands, is perhaps the worst one within the city limits for getting an obelisk to. It involved a much larger expenditure for transport by land, as it was a more difficult route than any other site that had been proposed. The other sites most warmly advocated were the circles at the intersection of Fifth and Eighth Avenues and Fifty-ninth Street, at the S. E. and S. W. entrances to the Central Park. The reasons given were: the ease with which the obelisk could be reached by the public, the desirableness of having it stand on level land, and the advantage of having it near some building. The objections were: the probability of having the obelisk surrounded by tall buildings, towering above it and dwarfing it by contrast; and the certainty that these buildings would not have one feature in common with the sublime architecture represented by the obelisk. There can hardly be found a wider separation of architectural design than an ancient Egyptian temple and a modern New York building. The best site for the obelisk was the one that insured its isolation, and this consideration resulted in the selection of the Graywacke Knoll. The objection that it would not be easy of access does not seem reasonable, in view of the prevailing opinion and hope that the Central Park will be at no very distant day what its name implies, and the assumption that the obelisk will stand where it is long after this has been realized. Few persons will deny that the Graywacke Knoll is the best site within the limits of the park. It is near the Metropolitan Museum of Art and Antiquities, with which the obelisk is intimately associated; it is close to the favorite drives and walks; it is a mass of solid granite that affords a natural and imperishable foundation on which the obelisk will stand erect until it is pulled down by man or thrown down by some violent convulsion of nature; and it is one of the highest points on Manhattan Island, without the appearance of being elevated.

At the regular meeting of the Board of Commissioners of the Department of Parks on May 5, 1879, a communication was presented from the Honorable Henry G. Stebbins, in behalf of the gentlemen interested in the removal of the obelisk, asking that the site they recommended may be formally selected by the Department. This was unanimously agreed to, and the desired permission duly recorded. Soon after the arrival of the "Dessoug" this decision of the Board was reconsidered, and the question remained unsettled until July 27th. On that day, after discussion and examination of the other sites urged on the Board, a final decision was reached, designating the summit of Graywacke Knoll as the spot upon which the obelisk was to stand.

DISSEMBARKING AND TRANSPORTING THE PEDESTAL.

Circumstances made it easy to select a landing-place and a route for the obelisk. The rapid tidal currents and short intervals of slack water made a landing on the East River shore undesirable, although the grades are more uniform, the route more direct, and the distance less. The steep slopes on the North River shore abreast of the park have but one break, and that is through Ninety-sixth Street. At the foot of this street, therefore, the obelisk had to be landed. But it was not possible to move the pedestal by truck over the roadway of this Street, and another landing-place had to be found for it. The wharf at the foot of Fifty-first street was finally selected, and the "Dessoug" moored alongside of it on July 31st. The derrick belonging to the Dock Department of the city had in the meantime been loaned by the Dock Commissioners, on condition that all expenses incurred by the Department would be paid by me. Discharging the foundation and steps was begun on August 1st, and on the 4th the pedestal was lifted out of the steamer and landed on the dock by the derrick with an ease and rapidity that contrasted strangely with its embarkation in Alexandria.

The accompanying Plate (xvii) shows the pedestal suspended to the derrick. While so sus-

pended the steamer was hauled ahead, and when she was out of the way, the arm of the derrick was swung around, and the pedestal landed on the wharf, as near as possible to the shore. From this point it was moved by sliding it on heavy timbers (skids) to a convenient place about five hundred feet distant, there to await the partial rebuilding of a truck that was to carry it to the Central Park. This truck was the only one in the city capable of sustaining a load of fifty tons that was suitable for moving the pedestal. It belonged to the firm of W. B. Smith & Sons, who made a reasonable offer to move the pedestal foundation and steps to their destination, and with whom I contracted to do that work.

Plate xviii illustrates the method of suspending the pedestal on the truck. Difficulty was experienced in several places in keeping the wheels from sinking into the pavements. They had only to sink nine inches for the chain slings, by which the stone was suspended to the beams, to touch the ground. Whenever this occurred the slings had to be slackened until the truck was released, and the wheels placed on timber laid on the pavement, and the stone again suspended. Thirty-two horses in sixteen pairs were attached to the truck for hauling it. The first forward movement was invariably given by hydraulic pumps applied to the tire of the rear wheels. As soon as the truck was in motion the horses were started and kept going on a slow trot until the wheels again sank into the pavements. The route was through Fifty-first Street to Fifth Avenue, through Fifth Avenue to the Eighty-second Street east entrance to the park, where the truck was dispensed with. Thence to the site the pedestal was moved on greased skids. This stone is the largest and heaviest moved on wheels of which there is any record, and excepting the obelisk it is the largest ever moved through New York City.

THE FOUNDATION.

It was not until August 5th that any action was taken by the Department of Parks to prepare the Graywacke Knoll for the foundation. On that day four laborers of the Department commenced removing the young trees that stood on it and clearing away the surface. A few days later the work was suspended without apparent reason. The invariable custom of the Department had been to prepare foundations for the reception of monuments and statuary contributed by individuals to the adornment of the city. In this case the custom was violated. Anxious that the foundation should be prepared before winter set in, I sought almost daily at the Department for the requisite authority to proceed with the work at my own expense. This was withheld until August 27th, and then granted under onerous conditions that involved a large increase in the cost of the work of placing the obelisk on the site assigned it.

The earth having been removed from the top of the knoll, the surface of the granite was levelled and the cavities filled with cement. A thin layer of this was then laid over the granite, and the foundation was replaced exactly as it had stood in Alexandria, each piece in the same relative position to the others, and to the points of the compass. Instead of leaving the interstices vacant as the Romans had done, they were filled with the best cement obtainable, thus making the structure as solid a mass as the granite on which it stands and as the syenite that stands on it. Each piece was bound to the other by iron and steel clamps similar to those that had been used by the Romans, which we had necessarily removed when taking the foundation apart in Alexandria.

A number of lead boxes of different shapes and sizes had been prepared to fit into available spaces enclosed by the steps, and into these were placed the various articles contributed by the Departments in Washington and by individuals. The boxes were carefully soldered up and completely encased in cement, so as to exclude air from their contents. Applications for space in them came from all over the country. Some were evidently prompted by vanity, others by a hope of advertisement, but the majority were based on a common-sense desire to perpetuate some examples



ASTOTYPE

E. BERTHOLD, N. Y.

LAYING THE CORNER-STONE

of our civilization. I made an effort to secure a complete telephone system, but failed. I asked the representative of the American Bible Society to contribute the New Testament, or any part of it, in all the ancient and modern languages and dialects into which it had been translated and published. He referred me to the book-store where I could buy them. I did buy them; and they were carefully deposited in a lead case, where they will be preserved for an indefinite period. One of the persons connected with this Society displayed much zeal in the effort to have the names of the officers of the Society deposited with the New Testament. He did not succeed. I made application to the United States Coast and Geodetic Survey for standards of the weights and measures of the United States for deposit. I also asked for specimen copies of the publications of the office. Both were refused without assigning a reason.

The Departments at Washington contributed the following named articles which were duly deposited in copper cases hermetically sealed, enclosed in lead cases carefully soldered, and these again in a mass of cement :

THE DEPARTMENT OF STATE.—A copy of Federal and State Constitutions, colonial charters, and other organic laws of the United States. Congressional Directory for 1880. Fac-simile of the Declaration of Independence. Revised Statutes of the United States, 1878. Statutes relating to the District of Columbia and post-roads, XLIII Congress, 1873-4. Copies of papers on file in the Department, relating to the presentation, by His Highness, Ismaïl I, Khedive of Egypt, of the obelisk to the city of New York.

THE TREASURY DEPARTMENT.—A full set of medals of the Presidents of the United States. A full proof set of the silver and minor coinage for the year 1880. A collection of documents and engravings selected from those on file in the Department.

DEPARTMENT OF THE INTERIOR.—Official Register of the United States, 1879. Compendium of the Ninth Census, 1870. Report of the Secretary of the Interior, and accompanying documents, 1879. Report of Commissioner of Education, 1877. Catalogue of publications of Hayden's surveys. Register of the Department of the Interior, 1880.

WAR DEPARTMENT.—Official Army Register, 1880, corrected to September 17th. Signal Office International Bulletin. Tri-daily weather maps. Monthly weather record for July, 1880. General order announcing death of General Myer.

NAVY DEPARTMENT.—Navy Registers for January and July, 1880. Report of the Secretary of the Navy for 1879. Report of the "Polaris" cruise in the Arctic regions. Model of the "Hartford's" propeller while Admiral Farragut's flag-ship. Silver medal for Arctic discoveries, 1818-25, presented by Queen Victoria to officers and seamen of the navy. Silver medals commemorating naval victories of the War of 1812. Model of an improved anchor.

THE SOCIETY FOR THE PREVENTION OF CRUELTY TO ANIMALS, through the President, Henry Bergh, furnished a parcel of documents relating to the Society.

ANGLO-SAXON LODGE, No. 137, contributed a complete set of the emblems and jewels of the Order of Freemasons, in silver.

Mr. WILLIAM HENRY HURLBERT contributed a small box, the contents of which is known only to himself, and a gold plate on which is engraved the essential facts relating to the removal of the Alexandrian obelisk to New York.

A copy of Webster's Unabridged Dictionary, the works of William Shakespeare, New York City Directory, a map of the city, Telegraphic Determination of Longitudes in the West Indies, Nautical Almanac for 1880, Haydn's Dictionary of Dates, Wilkinson's Egypt, an Encyclopedia of Mechanics and Engineering, and a Compendium of Electricity and Magnetism, were among the books selected to fill vacant spaces in the boxes. Photographs of the different stages of the work of removing the obelisk, similar to those published in this volume, were also placed in the largest box. Specimens of all the

Removal of the New York Obelisk.

metals used in the industrial arts, different kinds of screws, samples of boring and cutting tools for wood and iron, several sizes of steel-wire rope, and a hydraulic pump, were among the articles deposited. The hydraulic pump was made and contributed by Richard Dudgeon, of New York, and was identical in form and system with those used for lifting and lowering the obelisk. It was encased in a lead jacket, the lead having been run into a mold containing the pump, while molten, so as to insure exclusion of the atmosphere and moisture.

By October 10th the foundation and steps were laid and in place with the exception of the polished cube of syenite (Fig. A, Plate xi), which was reserved for the Masonic ceremonies of laying the foundation-stone, this being the last piece to be placed before the pedestal was moved into position.

THE MASONIC CEREMONIES.

Most Worshipful Jesse B. Anthony, Grand Master of Masons in the State of New York, accepted the invitation to lay the corner-stone with Masonic ceremonies, and after consultation with the Commissioners of Public Parks, fixed October 9th as the date. The following order had been issued.

OFFICE OF THE GRAND MASTER OF MASONS IN THE STATE OF NEW YORK,
TROY, N. Y., September 16, 1880.

To the Masters, Wardens, and Brethren of the several Lodges in New York, Brooklyn, and vicinity, Greeting:

Having accepted an invitation to lay the corner-stone of the Egyptian obelisk about to be placed in Central Park, New York City, the ceremonies of which will take place in the afternoon of Saturday, October 2d,¹ it is desirable that the fraternity of Free and Accepted Masons should generally unite in recognition of the compliment paid our Society in thus becoming connected with the noble enterprise of placing this historical monument of Egypt in the metropolitan city. You are therefore most earnestly requested to support the officers of the Grand Lodge on this occasion, and make it a memorable event in the annals of the craft in the Empire State.

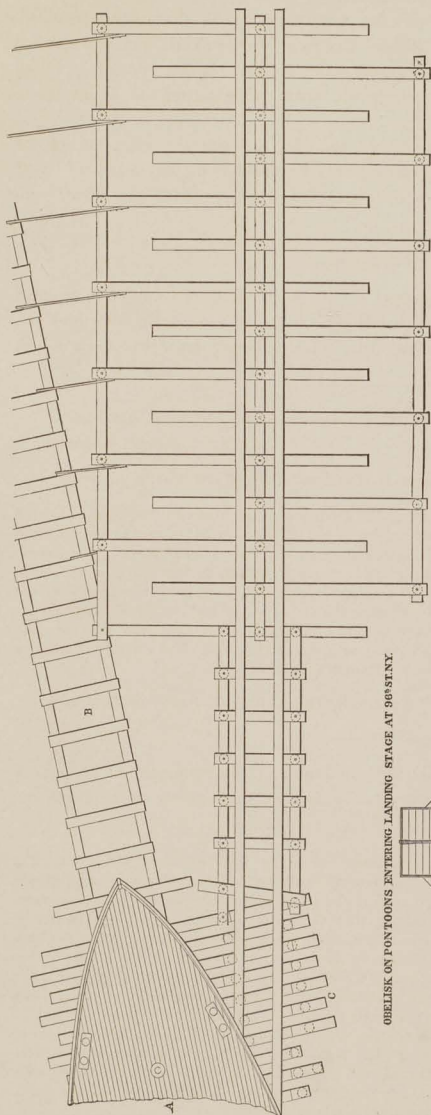
I have appointed Right Worshipful E. M. L. Ehlers as Grand Marshal of the Day, who will issue the necessary orders incident to the parade, and due publicity will be given to the same. All lodges proposing to parade will please report promptly to the Grand Marshal at Masonic Temple, New York.

Fraternally, JESSE B. ANTHONY, *Grand Master.*

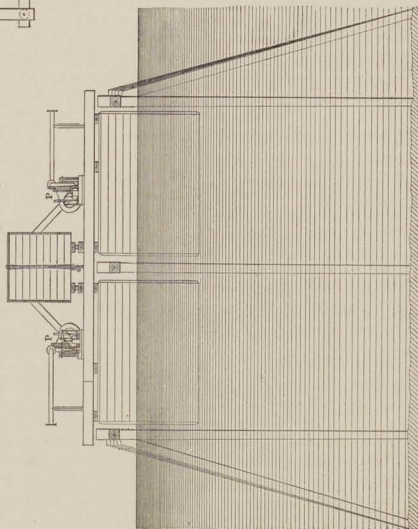
In accordance therewith special meetings of the different lodges and commanderies in New York and vicinity were held and arrangements effected, resulting in the promulgation of a programme by the Grand Marshall.

The number of Freemasons that paraded for the ceremony was nearly nine thousand. It is estimated that from Fifteenth Street to the Eighty-second Street entrance of the park not less than thirty thousand people were on the sidewalks. The disciplined and orderly appearance of the paraders drew out much favorable comment. Each commandery and division was headed by a band, so that there was music at several points in the procession all the time. As the entrance to the park was approached the crowd grew denser, and in the park itself it was so great that the policemen were practically useless in keeping the spectators out of the spaces reserved for the ceremonies. The column having marched to the base of the obelisk, opened ranks three deep, and faced in. The line then extended to Sixtieth Street, where the Grand Master and the Grand Lodge officers left the carriages, and, preceded by Apollo Commandery and Anglo-Saxon Lodge, marched through the line to the platform on the Graywacke Knoll, from which the ceremonies were conducted. The Masters and Wardens of the lodges followed then, and the Marshals took charge. The ranks were closed, and the commanderies were massed on the west side and the lodges on the north and east sides, while the south side was crowded with spectators, some occupying as a vantage-ground the 43-ton pedestal of the obelisk at the foot of the knoll. When order had been obtained the Grand Master addressed the brethren as follows.

"BRETHREN: We have assembled to-day for the purpose of laying the corner-stone of the foundation which is to again support the ancient monument known as Cleopatra's Needle. The occasion is one of which, as a



PLAN OF DISEMBARKING STAGE.



SECTION OF DISEMBARKING STAGE.

fraternity, we may well be proud, and while it is but true we engage in a labor which has been the custom of our fraternity from time immemorial when such service has been requested, yet as a matter of history connecting our Society with the national character of this work, we may regard it as the event of a lifetime and its record of great importance to our history as a craft. Coming thus publicly before the world as members of an organization which commends itself to the favorable consideration of all candid and unprejudiced minds, it is creditable to you that as individual members, as lodges, and as commanderies you have responded so nobly to the call and by your presence given your assistance to the work. The work is before us, and in accordance with our earliest Masonic lesson we will, before entering upon this undertaking, unite with Rev. and R. W. Bro. C. H. Hall, Grand Chaplain, in an invocation to the Deity."

The usual ceremonies having been concluded, the Grand Master delivered the following address:

"BRETHREN: Standing as we do upon ground which is ever to be memorable from the associations connected with the historical monument about to be replaced upon its original foundation, of which we have to-day laid the corner-stone in accordance with our forms and ceremonies, you will pardon me if in my remarks I depart somewhat from the usual course on such occasions. The importance of this labor to our history as a craft; the honor conferred upon our fraternity by thus being linked with the national importance of this successful achievement of the removal, transportation, and yet to be accomplished fact of again placing the obelisk on the foundation-stone; the universal interest in this addition to the monuments which adorn and beautify this city; the fact that this monolith represents to us the work of the operative workmen of centuries ago, and recalls to our minds most prominently the history of the past, demand that we turn our thoughts beyond the events and occurrences of the present moment to the ages that are gone, of which this obelisk is a venerable relic. This monument in its associations brings forcibly before us that period of which at present, we know so little and of which the researches of the scholar, the calculation of the astronomer, the study of the rocks by the geologist, and the skill of the engineer, are each year adding to our information and startling us with wonderful results. This trophy comes from that land, the history of which, was long lost in the mist and obscurities of ancient fable and tradition,—a land of wonderful creations of human power and genius, that has been, and long will continue to be, a place of interest and curiosity to the learned. Egypt itself is a book of history,—one of God's great monumental records, on the face of which He has written with His own hand many of the strange events of the past. It was the birthplace of literature, the cradle of science and art, the garden and garner of the world. The people of those days excelled in many respects the advanced growth of the present century. Could we but know that which time will yet unveil, we should be astonished at the revelation and ashamed of our littleness. The Supreme Master, the great Architect, in the design upon the eternal trestle-board, traced each cycle of the progress of the universe, inspired the people with the idea to be worked out, and in His wisdom, even though ages have intervened, the prophecy or design has been or will be fulfilled. 'The ways of the Almighty are indeed wonderful.' Let us for a moment consider some points in the history of Egypt which are intimately associated with the principles of our fraternity as a society of workmen, or as conservators of the liberal arts and sciences. In the branches of decorative art and the science of architecture they were undoubtedly far in advance of us at the present day, and could we bring to light that which is buried from our sight by the devastations of war, the sacking of the old cities, could we open the grave made by the growth of years we should be struck with awe and astonishment at the wondrous magnificence of ancient times. The character of Egyptian architecture is that of massive grandeur and severe simplicity, as exhibited in the sculptors' well-defined outlines and in the colossal dimensions of their temples and the enormous blocks of material employed in their construction. The great object of the builders seems to have been that the strength and durability portrayed in the prodigious magnitude of their structures should seem to typify their greatness. The architectural types of all other structures of antiquity sink into insignificance when compared with those of Egypt. The Egyptians were the first to observe the course of the planets, and their observations led them to regulate the year from the course of the sun. Among the immense structures erected by the Egyptian workmen, the pyramids were the first that claimed the attention of the outside world, and while it is conceded that they were generally constructed to serve as tombs for some monarch, yet it is also thought that they were designed for astronomical purposes. For while we cannot suppose that they were intended as places of observation, there are many things in connection with them—their position, the exact angle at which they were built, varying in accordance with their situation as regards the longitudinal lines, together with the peculiar position of the opening or entrance into them—which induce us to believe that the shadows cast into the interior were made the basis of useful calculations. Let us consider them a moment, and while we have reference particularly to the pyramids—and in the illustration that which is termed the great pyramid,—yet the application is pertinent to other monuments erected by this ancient people. They are so intimately linked together that it is impossible to completely separate them. The pyramids were built for a purpose and built in all respects with some peculiar and symbolic reference. Every stone and every line had some allusion or reference to something which should yet be accomplished. The exactness with which these calculations have been verified proves that they were no accidental allusion, and while it seems incredible to us that prophecies can be foretold in the block, lines, and exact situation of the pile of stone, yet we cannot shut our eyes to the fact that they have been proven to be true after the closest scrutiny and investigation of the leading minds of

the world. The labors of the ancients in the science of astronomy cannot be despised. If the ancient philosophers groped where modern minds have seen more clearly, the events of time have proven that they appreciated the fact that the sun, planets, and stars were governed by fixed, immovable laws, and that there could be no variation from the great plan designed by the Almighty. The Egyptian priesthood 2,500 years before Christ had their calendar and periods proportioned to the processional cycle of the equinoxes. Tables have accumulated for over 3,000 years which now enable astronomers to predict with certainty the exact position each star in the solar system will occupy at a given moment. There may be a slight deviation of dates, but not sufficient to invalidate the fact that they had a correct knowledge of the laws governing the operation of the solar system.

"The great pyramid is more than science. It is the embodiment of a great revelation. 'The measurements, joint lines, and minute but exact markings, calculated at the rate of one pyramid unit or inch a year, agree with the past events of history, which must have been a prophetic revelation when built into its chronological passages.' If they have been correct in the past the inference is that they will be in the future. The investigations of astronomers have demonstrated the fact that the great pyramid was designed as an astronomical stone clock or ancient observatory, erected by inspiration of the Most High; for it cannot be attributed to accident that at exact periods of time of long intervals between—a thousand years and over—a certain star, the time-keeper of the ancients, is in such a position as to shine down the entrance passage of the great pyramid. This event is calculated by astronomers to occur during the coming year at a time which corresponds with the record engraved by the mystical lines on the stone. Jeremiah proclaimed: 'The great, the mighty God; great in counsel and mighty in works, which has set signs and wonders in the land of Egypt,' standing even unto this day. As we march along the cycle of time each one has added some discovery, or brought before us the fact that in many respects we have not yet equalled the position then occupied by the arts and sciences. In the former ages of the world, not having the art of printing—the power of the press at the present day—they wrought their lessons in the shape of the monuments of stone, and we cannot ignore the fact that the peculiarities of those ancient monuments, in the shape of the stone, numbers composing the same, the peculiar position, or the mystical inscriptions to be found thereon, were for a wise purpose. They were intended to tell their story at a future day and draw the veil from the past for the information and wonder of the present. Such a fact demonstrates that the lessons of the stone monuments erected in the land of Egypt, by inspiration undoubtedly from the Supreme Ruler, cannot be ignored, but demand of us the closest investigation. What we are in search of is truth. It is the mystical reward ever before the Masonic student, and every thing which in any way aids us in our progress in that direction should be carefully weighed and considered in all its aspects before we accept or reject the evidence thus brought before us. We should not, because of any previously conceived opinion, discard them hastily; neither, on the other hand, should we allow imagination to warp our judgment. The ancients were proficient in the science of mechanics, and as far advanced, if not farther, than we are at the present day in the knowledge of the use of the forces of water as an adjunct to the labors of man. They were fully acquainted with the laws of hydraulics, and must have utilized that branch of science in their work. It is impossible for us on an occasion like this to examine in particular the various departments of art and science of which Egypt was the home. They were a wonderful race, combining within themselves all the branches which adorn, beautify, and add to the reputation of a people when directed in the right channel. Their works, whether the obelisks, pyramids, temples, palaces, tombs, or other structures, were all on a colossal scale. It has been a wonder to many how the ancients could have moved the immense blocks of stone used in the monuments of ancient times, but it can be no longer, for while they did not have all the appliances of mechanical skill extant to-day, yet they were thoroughly acquainted with the laws and forces of nature, adapted them to their wants, and rendered them serviceable in their vast undertakings. The advance which has been made in science by the present generation is in the utilization of electricity, and more especially in the line of chemistry, the combination of different elements to create a new source of power. The steam-engine is simply the application of chemistry in utilizing the elements of water in the form of units of steam, in conjunction with mechanical appliances.

"Egypt abounded in obelisks, or monoliths, as they are termed, and they were erected to commemorate some particular event, perpetuate the reputation, or hand down to posterity the glory, of some great monarch. They were erected in great numbers, and many of them have been removed to Europe to add to the trophies of some city. That of which we have to-day laid the foundation-stone was one of two originally located at Heliopolis some 3,400 years ago, and afterward, 23 years B. C., removed to Alexandria, where they received the name of Cleopatra's Needles. One of these now adorns the city of London, and the other will add to the attractiveness of this place and recall to our minds, by its allusions, the important lessons of past centuries. You will pardon me if I have devoted too much time to this part of my address; but in considering the work of to-day, the foundation of the result yet to be attained, my thoughts have turned instinctively to the past, of which this obelisk is to me a reminder. We cannot gaze upon it without desiring to know of the land whence it came, the status of the people, and especially of the evidences of skill of the operative workmen of those times. This is especially true when we consider that our Society was originally of the operative character, and that as the reward of the labor of one of our brethren of the present, discoveries have been made in the removal of the obelisk from its Eastern home which, in the judgment of many, seem to have an allusion to



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DISEMBARKING THE OBELISK.

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the fraternity of which we are members. Masonry may be divided into two periods: the operative and speculative. It was originally a school of architecture and a promoter of the sciences. In its operative character Masonry applied the unlimited resources of architectural skill to develop Divine ideas through symbolized stone. It awakened the emotional element of the people in the exquisite temples of worship, and it elevated their aspirations in art productions of wondrous beauty and uniformity. These guilds travelled from place to place engaging in the work, and in all sections is to be found that uniformity of detail which demonstrates that they were combined into societies to carry out a well-defined and arranged system. There have been operative societies in all ages of the world. They flourished in Egypt and we see their handiwork in the monuments, temples, and pyramids of that day. We find traces of them among the Greeks, in the introduction of peculiar characteristics of architecture into Rome. We find at one time that the home of the arts and sciences was located in the Orient, especially at Byzantium. We find it perpetuated in the Roman colleges instituted by Numa Pompilius. We find it carried into Britain with the Roman conquerors. It is generally conceded that Masonry as an operative science came from the East, was incorporated with the guilds of the Middle Ages, and subsequently constituted an essential part of Masonry of the present day. We cannot be expected to enter into minute detail, and we sketch the outline only for the purpose of presenting the proposition, that we can justly claim that the foundation of our speculative organization rests upon and is the natural outgrowth of the ancient operative corporations of the Middle Ages, and they in turn derived their origin from the still older societies banded together for the same purpose. I do not claim that all societies of the past engaged as operative bands were Masonic in their nature, for we know that they combined religious forms and ceremonies in many of the most remote, which are entirely foreign and antagonistic to Masonry of the present; but I think that we can fairly claim that the various points which these societies present in common, and which in some respects are to be found in our Society as at present organized, cannot have been the result of accident or the work of chance. Our Society is the natural outgrowth of these societies, and while we build for a nobler purpose and a higher ideal, yet the object which each endeavors to perpetuate and promote is in spirit harmonious. In its early history the operative workmen by all the resources of their art outlined and perfected Divine truths in the sculptured stone. They wrought out in granite blocks the thoughts and aspirations of their day. They worked for a wise purpose, and were actuated by a combined policy. Every object was designed to develop some great idea or to perpetuate some event of importance. They left the traces of their work behind them, and in the temples, pyramids, monuments, and other results of their labor do we find the distinctive marks of the craft. The marks of the workmen upon their work trace their progress, and the similitude to be found in the mystical marks proves that, in some respects at least, they must have possessed a common knowledge and been actuated by the same purposes. This is one of the essential points which have been demonstrated to us by the discoveries made at the exhumation of the foundation of this obelisk. We find delineated there certain emblems which are to be found in common use among the operative craftsmen of the Middle Ages, and it is an evidence that these marks are definitive mementoes of a systematic labor. They are suggestive of a connection which may have existed by regular sequence between the Eastern and Western builders. I do not, however, consider that we should regard these marks as being symbolic, for while such an inference may be drawn, yet the geometrical outlines should not be accepted without qualification. We find that they labored with the same tools that are preserved in our Society and regarded by us in a symbolic sense as teaching moral lessons. Now, brethren, let us consider for a few moments these discoveries with reference to Masonic history.

"I touch upon the point because it has been so prominently brought before the public in connection with this obelisk, and especially because in the judgment of many they seem to have a direct allusion to our fraternity. In considering these discoveries from a Masonic standpoint we must eliminate from our minds the Masonry of to-day as now organized. 'History,' says Cicero, 'is the light of truth. It differs from symbolism in that we expect and demand that it should be conclusive, that each link should follow the other in regular order, and when thus presented we should accept it as true.' It is a common remark that all history is uncertain, and if this be true in its full extent there would be little use in attempting to show the value of that which cannot be known with certainty. But although many events, or rather the minute circumstances of such events, are uncertain, the most valuable part of history rests upon visible monuments, such as pillars, edifices, heaps of stones, etc., erected upon the occasion of remarkable events. These monuments attracting the attention of the rising generation would naturally cause such inquiries concerning their origin and use as would long preserve the knowledge of the transactions to which they refer. It is questionable to my mind whether we are to confine ourselves to the historical rule—that is, to limit our views to that which can only be proven by indisputable facts and consecutive links to be true. Should we not take a broader ground and look to the principles which antedate the time assumed for the origin of Masonry as at present constituted? There can be no question but that in the secret societies of Egypt are to be found some elements now embraced in the principles or symbolism of Masonry of the present, and yet, notwithstanding this, I am not prepared to state that we should consider that Freemasonry existed in those days. We cannot honestly claim, because of such traces, that those societies or institutions were Masonic in their nature. In the annals of our craft there have been handed down to us much that is mythical and traditionary in its nature, and many of the old writers on Masonic history have

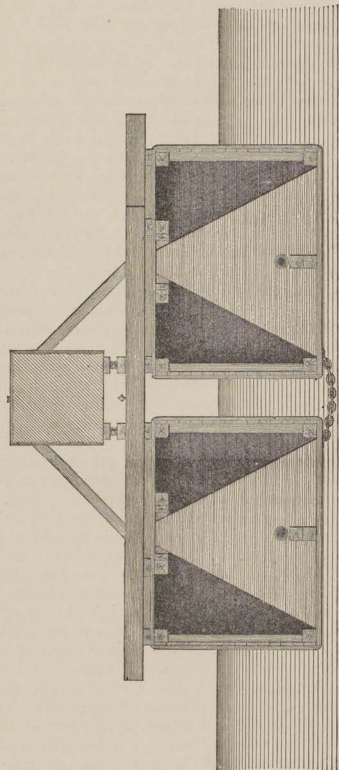
in the support of their theories given us much that is visionary. We all know that when we enter the field of speculation there is really no limit to the extent it may be carried. Cast your eyes upon the fleeting clouds of the firmament as they pass along, give the imagination full play, and you create many fantastic and strange pictures; curb the imagination, look again, they are after all only clouds. Do not understand me as detracting in the least degree from the importance of these discoveries. They may have within them elements which may prove much, but I do not think we should hastily decide that they are conclusive.

"The antiquity of Masonry in its principles we must with one voice concede; for the spirit of our institution includes all that is good and elevating to the human race, and, as a system of morals, ranks with religion, leaving each one in that respect to be governed by the dictates of his own conscience and in accordance with his peculiar belief. I should be glad if from the discoveries which have been, or may yet be made, we might be able to successfully trace the history of our institution back through the past, for we all have a particular veneration for age. It is a principle which is imbued into our feelings at early childhood and grows with our years. In the proper regard which we have for antiquity do not let us rest upon and be content with that; the present is given for our field. We are to improve our opportunities, labor in the carrying out of the vital principles of our organization, and by so doing make a record which shall endure through the ages to come, so that when the monuments and temples have crumbled to dust, the good deeds of Masonry shall stand out on its escutcheon brighter and brighter with the passing years. The effect of these discoveries will be productive of one result at least. It will awaken new zeal in the student, and it is possible that some things which may now seem to be curious may lead to further discoveries which will demonstrate a connection between the ancient and modern that we are not yet prepared to admit. You will understand that I am expressing individual views. When I first heard of these discoveries I gave them no consideration whatever, and while I have had no opportunity to thoroughly examine them, yet there are some peculiarities which seem to me worthy of the careful consideration of the Masonic student. Let them be tested by the crucible of time, which may yet eliminate the dross and present the truth in its purity. The world we live in is made up of the occurrences of the past, and it is the work of the investigator, the geologist, the astronomer, the philosopher, and the student in any specialty, to examine, to dig into, to look into, to consider, and to analyze that which has been covered up by the operations of nature or the lapse of time. Every year presents new facts, develops new truths, which enlighten and render intelligible many things which have for ages been shrouded in darkness, or subject to the claim of speculation. Our world, which seems complete in itself and is remarkable for its achievements, appliances, and results, has passed through wonderful changes; and while we boast of the intelligence of the nineteenth century, yet when we uncover and bring to light the buried treasures of the past, we find that even with our boasted superiority we do not equal the skill of the ancients. The monuments of the past are to be considered by us as representatives of some grand historical event in the history of those nations, or as memorials of their knowledge perpetuated in the form of stone. The history of the world has not yet been written, neither has the history of Masonry, and even though 'the mills of God grind slowly,' yet all incongruities will finally be reduced to an even and consistent nature, and the almighty power of truth shall prevail. In conclusion, brethren, there is nothing done in Masonry that is not for a purpose and is not designed to impress its lessons upon us. What is the design upon the trestle-board to-day? What has been brought prominently before you on this occasion? What thought is uppermost in your minds? Is it not that a man's work in this world lives long after he has laid down the implements of labor, and that his influence does not entirely cease with the termination of life's powers? This obelisk erected thousands of years ago is not without its lesson to us of to-day. The ancient workman did not build for an age, but for eternity. So with us, brethren; we may not consider that our efforts amount to much of themselves, but nevertheless every one has his influence, and in a greater or lesser degree we contribute to the aggregate whole. Let it be our endeavor therefore to lay the foundation of character on a broad, sure, and deep foundation; let it be such as will bear the application of the plumb, square, and level; let us continue to build upon that foundation a character which is above reproach in the sight of Him Who ruleth all things. And, when finally we have completed our task, erected a monument of moral grandeur and symmetry, achieved something which is for the welfare and advancement of the human race, then in after years the coming generations will treasure our memory, imitate our example, point to our deeds, and draw inspiration from our age as worthy of their veneration. Such a monument will be more enduring than even that of stone; and the chiselled record, long after the tracings upon the stone shall have become obliterated, will stand out in its original sharpness, telling of grand enterprises and noble works, which are the real monuments of a successful life. Let us therefore labor faithfully in the present, looking forward to the reward promised to him who performs his whole duty, and the past, present, and future of each and every one will entitle him to the salutation: 'Well done, good and faithful servant.'"

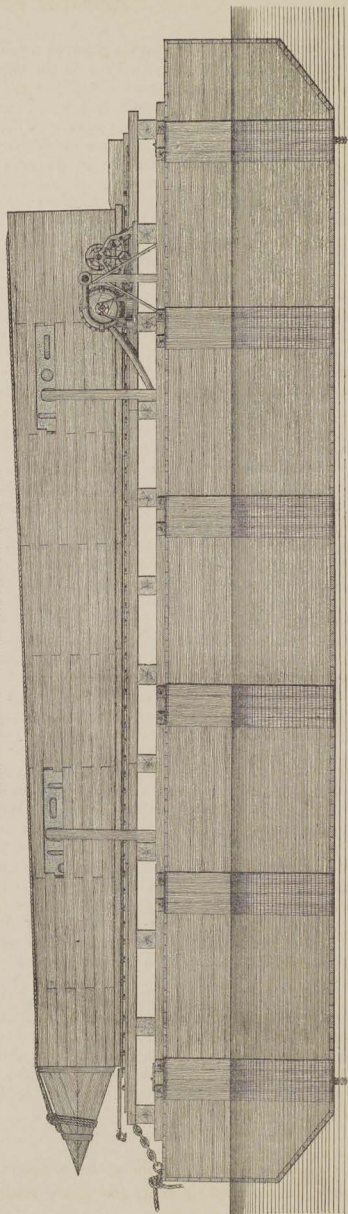
The benediction was then pronounced by R. W. and Rev. Brother J. Bradford Cleaver, Grand Chaplain, and the ceremonies were concluded.

The only thing remaining to complete the structure on which the obelisk was to stand was to move the pedestal from its temporary resting-place near by on the west side of the foundation to its

CROSS SECTION THROUGH OBELISK AND PONTOONS.



SIDE ELEVATION OF OBELISK AND PONTOONS.



proper position. This was accomplished on October 11th. Building the masonry piers for the turning structure, (Plates xxvii and xxviii, G) was pushed forward rapidly. By November 30th the turning structure was erected on them ready for the obelisk.

DISSEMBARKING THE OBELISK.

Almost the first thing that occupied my attention on arriving in New York on July 20th was the arrangement for disembarking the obelisk. It was very soon discovered that there was only one dry dock at or near the city in which it could be disembarked by reversing the plan of embarking it. The owners of this dock had also discovered this fact. On opening negotiations with their representative it was evident that they were prepared to dictate their own terms for the use of the dock without regard to the customary charges. They had the right to fix on whatever price they pleased and make their own conditions for the use of their property. They fixed on a price in excess of that charged for other steamers, and made the condition that I must give security for any injury that might result to their property from disembarking the obelisk. These terms contrast strangely with the arrangements made by the Egyptian government, which gave me the free use of the dock in Alexandria for an indefinite period, without conditions as to injury, and charged only for the actual expenditure of fuel and labor in raising and lowering the steamer. I offered the dock owners the same rates as were paid by other steamers, and proposed the appointment of a commission of experts to watch the operation of disembarking the obelisk and decide what amount of damages, if any, should be paid them resulting therefrom. The answer to this was to the effect that unless I accepted their terms and conditions at once they would not agree to take the "Dessoug" on the dock at any fixed date, according to turn, but would leave the disembarkation of the obelisk to some time when there was no immediate demand for the dock. Without replying, I left the office, determined to devise some other plan for disembarking it.

At first I thought of taking the "Dessoug" to Philadelphia or Baltimore, disembarking the obelisk in the spacious dry dock in either of these cities, and bringing it to New York on floats by canal. Negotiations with the dock owners or their representatives developed the same feeling as that existing in New York as to extra charges. Besides this there would have been no end of obstacles to be overcome in connection with the Customs authorities and navigation laws. The "Dessoug" had neither register nor nationality, and could not leave the port of New York. The next plan that suggested itself to my mind was the construction of a marine railway at the foot of Ninety-sixth Street, North River, where the obelisk was to be landed on Manhattan Island, on which to haul the "Dessoug's" bow out of water, and then haul the obelisk out of her hold on to the shore. This was found to be impracticable on account of the Hudson River Railway, which skirts the shore, and the abrupt increase of depth close to the river bank. Besides these objections were the cost, and the condition exacted by the Dock Department, that the structure should be entirely removed and the piles *pulled out* after the disembarkation of the obelisk. Removal would have cost almost as much as construction.

Disembarking the obelisk while the "Dessoug" was on a marine railway was entirely practicable and as easily accomplished as if the steamer were in a dock. But getting the obelisk afloat with moderate expense after it had been disembarked, so as to remove it to the foot of Ninety-sixth Street, was the difficult problem to solve. After having almost despaired of being able to accomplish my object without yielding to the demands of the dock company, I reached a solution that may be summed up in the word *tide*. I determined to make the rising tide lift the obelisk and the falling tide land it. There would be no lack of power.

Before communicating my plans to any one, I visited incognito all the marine railways on the shores of New York Bay, and fixed on a new one at Staten Island as the best adapted to my purpose. An

illustration and advertisement in the *Daily Graphic* had attracted my attention to it. The proprietor had no knowledge of my plans until the terms of an agreement had been entered into for the occupation of his slip. Had he then changed his mind I had two other marine railways in view, the proprietors of which were ready to accept my offer. Every thing was arranged satisfactorily. The "Dessoug's" bow was hauled out of water on August 21st, at Lawler's Marine Railway, on the east shore of Staten Island. Iron shipwrights had been engaged; and the work of opening the aperture was begun on August 22d, and completed on the 29th.

While this was in progress a disembarking stage on piles had been prepared adjacent to the marine railway to receive the obelisk. Plate xix illustrates the plan and section of the disembarking stage, and shows the relative positions of the steamer's bow (*A*), the marine railway (*B*), and the disembarking stage and its approach (*C*). Two rows of piles were driven from a point close to the railway right under the aperture in the steamer's bow, to a distance of seventy feet, and at an angle with the line of the railway equal to that at which the obelisk had to leave the steamer's hold. Capping and cross-beams were placed on these piles, to form the approach to the disembarking stage. The latter comprised three parallel rows of piles, twenty feet apart. The centre row had double the number of piles in the outside rows. Over each pile of the outside rows and every alternate one of the middle row heavy cross-timbers were placed; and on these, longitudinal pieces were laid to form the bed for the channel iron tracks, prolonged into the steamer's hold. This arrangement of the cross-timbers was due to the impossibility of purchasing suitable timber long enough to extend across the whole width of the staging. The spaces between the rows could not be reduced in width, as suitable pontoons of less than twenty feet beam could not be obtained. The staging and approach were given the same incline as the platform in the steamer's hold, which was the same as that of the marine railway.

The obelisk having been slued inside of the steamer, in identically the same manner as it had been slued in Alexandria, to the angle at which it was to be disembarked, it was raised, and the channel iron tracks and cannon-balls placed under it. It was moved outward about fifty feet by a *pulling* hydraulic pump, when, to hasten the disembarkation a fourfold purchase of six-inch rope was applied to it. The hauling part of the purchase was taken to the engine of an ordinary floating pile-driver, secured to the end of the disembarking stage, as shown on Plate xx. The time occupied in making the aperture in the steamer's bow, building the stage and its approach, sluing the obelisk in the hold, raising it, and placing the track under it, and preparing to disembark it, was two weeks. The time occupied in disembarking it was fifty minutes.

The report that the obelisk was to be disembarked brought down to Staten Island a crowd of spectators, who occupied every available spot from which a view of the work could be obtained.

REMOVAL FROM STATEN ISLAND TO MANHATTAN ISLAND.

On September 13th the pontoons, that had been prepared for the operation of lifting the obelisk from the staging, were placed under the cross-timbers and between the rows of piling at low tide. Water was let into them to prevent their rising with the flood tide. On the following day they were pumped out. As the tide rose they naturally rose with it and lifted the obelisk. About two hours before high-water the cross-timbers were clear of the capping, and the obelisk was once more afloat. Owing to lack of space the positions of the pontoons had not been properly adjusted. It was found that they did not float on even keels. To effect this adjustment they were hauled fifteen feet toward the shore; and water was admitted to them while in this position, so as to land the cross-timbers sustaining the obelisk on the capping this distance from their original positions. This operation consumed the short interval of high-water, and nothing more was attempted until the 16th. The wind on the 15th was such as to cause a considerable sea in the bay, in which it would have been imprudent to float the obelisk on the pontoons. The delay was utilized in removing the approach to



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ARTIST

THE OBELISK CROSSING THE HUDSON RIVER RAILROAD.

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the disembarking stage, and clearing a passage for the caissons to be hauled out of the slip directly astern, instead of ahead first and then astern as had been intended.

In the forenoon of September 16th, every thing being ready and the weather favorable, the pontoons were pumped out at low-water and adjusted to their proper position under the obelisk. The rising tide caused them to gradually raise the cross-timbers clear of the capping on the piles until the weight of the obelisk had been transferred from the stage. At high-water, 4 P.M., they were hauled out of the slip into the bay, bearing the obelisk on their decks (see Plate xxi). The next half hour was spent in lashing them together by means of chains passed through the wells in each and under their bottoms, as shown in Plate xxi, cross-section through obelisk and pontoons. The side elevation of obelisk and pontoons on this plate shows the pumps that had been placed to free the pontoons of water, and the method of securing the obelisk by shores from the recesses of its hieroglyphs to the decks of the pontoons.

A landing-stage had been prepared for the obelisk at the foot of Ninety-sixth Street, North River, identically the same in principle as that at Staten Island. The steamer "Manhattan," belonging to the Dock Department of the city, was in readiness to tow the pontoons from Staten Island. The steamer "Rescue" of the Coast Wrecking Company was in attendance to escort it. She was provided with powerful pumping machinery and the necessary flexible hose to convey steam from her boilers to the pumps on the pontoons. And in order to provide against all contingencies she towed one of the Wrecking Company's schooners, also provided with steam boilers and pumps.

The time of high-water at the foot of Ninety-sixth Street is about two hours later than at Staten Island. The distance is twelve miles. At 4.55 P.M. the "Manhattan" started ahead with the pontoons in tow. As she proceeded up the bay, tugs and steamers diverged from their courses to greet the strange object with vigorous and prolonged blasts of their steam-whistles and the cheers of their passengers and crews. We reached the landing-stage at Ninety-sixth Street at 7.15 P.M.. The evening was very dark and it seemed as if it would be impossible to adjust the pontoons between the rows of piles. After one or two failures, owing to the swiftly running tide, this was finally accomplished. Plate xix shows the obelisk on the pontoons just entering the landing-stage. As soon as it was in position the valves of the pontoons were opened to admit water to them, and in a few minutes the obelisk had been finally landed on Manhattan Island. As it settled down on the staging the piles swayed, owing to their great height; but as soon as the whole weight was on them they remained steady and the staging became stable.

CROSSING THE HUDSON RIVER RAILWAY.

The Hudson River Railway tracks skirt the river bank at the point where the obelisk was landed; passenger trains pass at very frequent intervals, the longest time between trains being an hour and a half about noon. To have blocked the road at this point for more than two or three hours would have involved serious loss and much serious inconvenience to travellers. Preparations for transferring the obelisk from the landing-stage across the track to the roadway of Ninety-sixth Street, comprised the placing of heavy timbers across the street and others at right angles to them for the channel iron tracks to rest on, and adjusting these to a uniform grade. The frequent passage of trains and the rugged surface of the unpaved street delayed this work until September 25th. The temporary bridge across the railway tracks had been prepared with care, every piece hewn and cut to the proper size, marked, and its position well understood by the workmen. Strong anchors had been sunk deep down into the rip-rap of the street, and made secure by chain-cable backing to large iron bolts let into holes drilled in the solid rock on the south side of the street. The pulling purchase was rove and overhauled; the hauling part was led to the drum of the engine of a floating pile-driver moored to the wharf adjacent to the landing-stage. Nothing that could be thought of that would

facilitate and hasten the crossing was neglected. Orders had been given by the railway officials to stop all trains at 11 A. M. Immediately after the passage of the last train that was allowed by, the temporary bridge was thrown across the track; in one hour and twenty minutes subsequently the obelisk was resting on the roadway of Ninety-sixth Street and the track was entirely clear of obstruction. The freight train seen in Plate xxii was delayed twenty-five minutes. The regular passenger trains were not delayed at all.

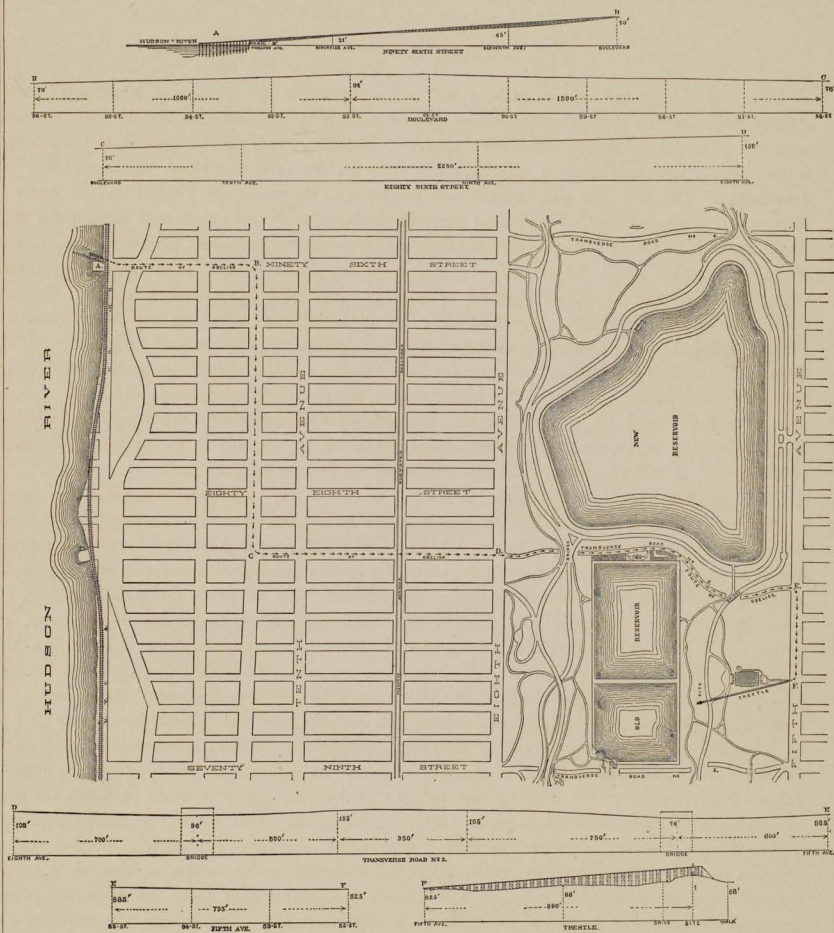
THE LAND TRANSPORT.

The landing-stage had necessarily been built at an angle with the direction of Ninety-sixth Street, a wharf at the foot of that street preventing its construction in any other way. The first operation after having moved the obelisk across the Hudson River Railway was that of sluing it to the direction of its route. This was done in identically the same manner as it was slued when embarked and disembarked. The route that was followed from this point to the site in the Central Park is shown on Plate xxiii: Eastward through Ninety-sixth Street to the West Boulevard; southward through the West Boulevard to Eighty-sixth Street; eastward through Eighty-sixth Street to the Eighth Avenue entrance of the sunken road across the park; eastward through this sunken road to Fifth Avenue; southward through Fifth Avenue to the Metropolitan Museum gate facing Eighty-second Street; then westward through the park to the site. Notwithstanding its numerous turns, this route was the best one that could be followed, chiefly on account of the more uniform grades and the condition of the streets. The aggregate distance is ten thousand nine hundred and five feet; and the aggregate vertical lift from the level of the landing-stage to that of the axis of the trunnions of the turning structure was two hundred and thirty feet. This lift is not, however, the difference of elevation above water-level, which is one hundred and forty-seven feet. Eighty-three feet of the lift was due to the up and down grades of the streets, as will appear from an examination of the profiles on Plate xxiii.

The apparatus used for moving the obelisk across the railway, and invariably up to the time it reached the roadway of Ninety-sixth Street, is illustrated on the accompanying drawing, which is a section through it, showing the cross-timbers (*A*) that were placed on the ground to distribute the weight over a large area, the track timbers (*B*) on which the lower iron channel tracks (*C*) were placed and adjusted, the cannon-balls (*D*) and the upper iron channels (*E*) on which the obelisk rested. The great advantage of substituting iron channels and cannon-balls for the ordinary wheels, axles, and tracks, was in diminishing the friction to a minimum and increasing the resistance of the rollers to a maximum. There was, however, one difficulty experienced with this method that could not be overcome at moderate cost. The bottom of iron channels of ordinary dimensions was found to be insufficiently thick to resist the pressure, and the iron channels were literally split into two angle irons by the cannon-balls. To remedy this defect three-quarter-inch flat iron plates were riveted to the bottom of the iron channels, but even this was found to be insufficient. Every effort was made to procure iron channels of the required size with thicker bottoms, but none could be found nor could any be made unless machinery was made expressly to roll them. This was out of the question.

It became necessary, therefore, to change the method of moving the obelisk. Nothing offered so many advantages as the ordinary cradle, rollers and track of a marine railway, which were substituted for the iron channels and cannon-balls. The idea first suggested itself to me in Alexandria, during the embarkation of the obelisk, when the iron channels also split. The change was determined on at Staten Island, during the disembarkation, when it was found that riveting flat irons on the back of the iron channels was not effective to prevent the splitting.

The system in use on marine railways and adopted for the land transport of the obelisk is illustrated on Plate xxiv. It comprised a cradle (*G*) a ways (*W*) and rollers (*R*). The cradle is



ROUTE OF THE OBELISK.

formed of two parallel beams, long enough to contain the obelisk and engine, about eighty feet, held together with through bolts, (*I*) and held apart by wooden struts, not shown on the drawing. Suitable fastenings were secured to the forward end of the cradle to hook or shackle the movable purchase block on. The lower faces of the cradle beams and upper faces of the ways beams were grooved through the middle and shod on each side of the groove with flat irons (*H*). The ways beams were kept independent of each other, to facilitate shifting them along the route after the obelisk had passed over them. The rollers were grouped in "boxes" of the form shown on the accompanying figure. The side pieces (*P*) were two-inch plank, twelve inches deep and six feet long, held together by wooden struts (*S*) having shoulders on the inside and keys through the ends. Iron thimbles (*T*) were let into the plank, to reduce the friction of the ends of the rollers (*R*). These rollers were cast with a flange around the middle, that fitted into the grooves of the cradle and ways beams and acted as a guide. The motive power of an ordinary marine railway is stationary. That of the obelisk railway was a pile-driver engine fastened to the forward end of the cradle and moving with it and, therefore, with the obelisk. It is evident that the rollers would travel over half the distance advanced by the obelisk and cradle, and that the ways were stationary. To have laid continuous ways from the river to the park would have been a useless expense. Six double lengths of ways beams and one and a half double lengths of roller boxes were provided. Gangs of men were employed grading the track ahead of the obelisk by placing cross-timbers and crib-work for the ways beams to lie on, others moving the timbers and other material ahead for the grading, others sinking anchors for the stationary purchase block to be shackled to, and picked men were employed placing the ways beams and adjusting them, to the exact grade on which the next advance of the obelisk was to be made.

The preparations for the first advance lasted until September 30th. Rainy weather, difficulty in finding suitable men, and other causes delayed the work, and the obelisk did not reach the West Boulevard until October 27th. The distance from the starting-point, near the railway to the West Boulevard is twelve hundred feet; the difference of level is sixty feet, the grade being about one in twenty. For hauling the cradle with the obelisk and engine on it up this steep grade a fourfold purchase was applied to it. Six-inch manilla rope was used for the fall. The stationary block of the purchase was shackled to a length of bower chain-cable belonging to the "Dessoug," which served as a pennant, the other end of the cable having been fastened to an anchor sunk twelve feet into the roadway of the street. The hauling part of the fall was taken to the drum of the engine on the cradle. The traction to be overcome averaged about thirty-eight tons—that is, the strain on the purchase was equal to a lift of thirty-eight tons before the inertia, the tendency down the incline, and the friction could be overcome. To keep the cradle from descending in case the rope or any thing connected with the pulling purchase should have given way, men were stationed in the rear of the obelisk with large iron wedges, that were held close against the rollers. The least retrograde movement would have caught the points of the wedges; the weight of the large end of the obelisk would, in this manner, have been utilized as a brake.

A change of grade and turn of ninety degrees were the next things to be accomplished after reaching the West Boulevard. The former occupied a few hours. The hydraulic pumps were placed under the ways in spaces left vacant in the blocking, which was removed as soon as the weight had been suspended on the pumps. The lower end of the obelisk was thus lifted, whilst the upper end was lowered until the new grade had been reached.

Instead of lowering the ways on blocking they were lowered on large timbers placed diagonally across the street so as to form a plane on which the obelisk and its railway could be slid. Strips of half inch iron were placed between the ways timbers and diagonal timbers, to reduce friction. Powerful purchases operating in opposite directions were applied to the ends of the obelisk and its

railway, and] the whole [slued around by November 3d, after six days and nights of tedious and unsatisfactory work.

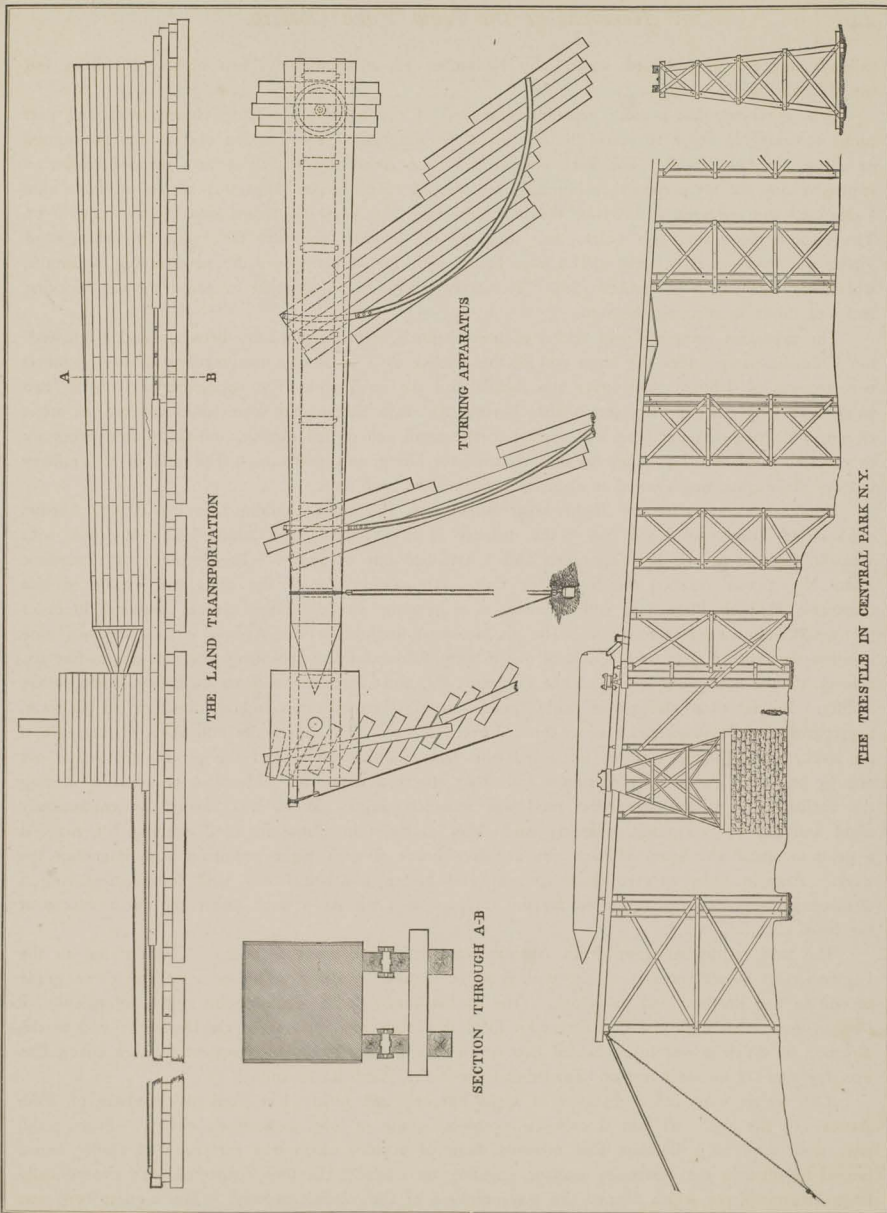
It was evident that a more expeditious method of making the remaining eleven turns and part turns necessary in order to reach the site must be designed. The London obelisk was not turned or moved overland at all. The Paris obelisk had been turned by placing it on a pivoted cradle, an expensive and for my purposes an impracticable system. The turning apparatus shown on Plate xxiv I designed and arranged in time for the next turn from the West Boulevard into Eighty-sixth Street. The distance between these points, two thousand six hundred and fifty feet, with two changes of grade, was made in eight days. The ways beams were laid directly over the new turning apparatus, which was reached on November 15th. Twenty-two hours were occupied in preparing the blocking and four hours in effecting the turn.

The apparatus comprises two circles of iron channels, with cannon-balls between, and a hundred-ton hydraulic pump under the large end of the obelisk as a pivot, and two sections of iron channels bent to arcs of different radii under the middle and the small end. The upper channels of the two latter were long enough to project a little beyond the ways beams; the lower ones covered an angle of ninety degrees. A purchase was applied to the small end of the obelisk, and the power necessary to effect the turn was equivalent to that required for lifting only two tons. The end of the railway bearing the engine was allowed to slide on a beam shod with iron.

From the intersection of Eighty-sixth Street with the West Boulevard to the Eighth Avenue entrance of Transverse Road No. 3, the distance is two thousand two hundred and fifty feet, with ascending grades of one in thirty-seven and a half, and one in ninety. The entrance to Transverse Road No. 3 was reached on November 25th. An examination of the plan and profile of this transverse road on Plate xxiii will indicate, in a measure, the difficulties to be overcome in order to transport the obelisk through it. The distance from Eighth to Fifth Avenue is two thousand nine hundred feet, with a descending grade of one in sixty, followed by an ascending grade of one in fifty-six, a level, then a descending grade, of one in twenty-six, and concluding with an ascending grade of one in fifty. Besides these changes of grade, there were eight partial turns in both directions to be made, aggregating one hundred and seventy-three degrees of arc. To add to the difficulties of this part of the work, intensely cold weather alternated with heavy falls of snow, and the picked men gave out one by one from attacks of rheumatism and other effects of exposure. The time occupied in moving the obelisk through the transverse road was nineteen days. Work was carried on continuously night and day by two gangs, relieving each other at six o'clock, morning and evening. I made it a point to spend six hours of each day and five hours of each night personally superintending the work. And in order to give encouragement and hasten it, a bonus was paid for accomplishing a distance greater than that regarded by the foreman as a fair day's work under the circumstances at the time.

The turn southward down Fifth Avenue was made on December 16th. The distance to the Eighty-second Street entrance to the park is seven hundred and ninety feet, or a uniform down grade of one to one hundred and thirty-one. The obelisk reached the turning-point at the intersection of Fifth Avenue with Eighty-second Street on December 18th, and was turned on December 22d to the direction in which it was to be hauled over the trestle to the site. The greatest distance covered in one day was six hundred feet on November 11th in the West Boulevard.

The trestle extended a distance of eight hundred and ninety feet from the roadway of Fifth Avenue to the site. It had a uniform ascending grade of one in fourteen nearly. Plates xxiii, xxiv, and xxvii fully illustrate this ordinary form of trestle, which was composed of timber bents, braced together in the customary manner, standing on mudsills, the tops connected with exceptionally large stringer-pieces which formed the ways timbers of the obelisk railway. The highest bent was



forty-eight feet. The sizes of the timber for verticals, cross-pieces, and stringer-pieces varied from twelve to sixteen inches square, according to the height and other circumstances. It was commenced about October 1st, and completed just as the obelisk reached the lower end during the last week in December. Several sections of the "Dessoug's" bower cable were shackled together and extended along the entire length of the trestle; one end was secured to a large steel pin that had been let into a hole drilled in the rock a short distance west of the site. This served as a pennant for the pulling purchase, the stationary block of which was shackled into the links of the cable, and shifted farther along when the obelisk cradle had been pulled up to it.

A heavy fall of snow on December 28th, followed by intense cold, delayed the operation of hauling the obelisk up the trestle several days, and it did not reach its destination until January 5, 1881. On that day the centre of gravity was placed directly over the axis of the pedestal and foundation, and its long and tedious land journey was at an end. It had travelled 10,905 feet in 112 days, or at the rate of about ninety-seven feet a day.

SUSPENDING THE OBELISK IN THE TURNING STRUCTURE.

The cradle and engine were released by raising and suspending the obelisk on hydraulic pumps in the manner illustrated on Plate xxiv, lower figure. Double bents had been placed in the trestle, on each side of the turning structure, for the hydraulic pumps to stand on that were to raise the ends of the obelisk, and extra single bents were placed on the pedestal for other pumps to stand on to aid in lifting and supporting it. The aggregate lifting power of the seven hydraulic pumps used for this operation was four hundred and sixty tons, about double the weight of the obelisk. The apparatus used for applying two of the pumps to the large end was an iron yoke, shown on the lower figure in Plate xxiv, consisting of two wrought-iron beams, eight inches wide, six inches deep, and nine feet long, placed underneath and projecting on each side of the obelisk far enough to allow of two steel bolts, each three inches in diameter, to pass through the ends of each beam. The upper ends of the bolts passed through iron plates two feet long, six inches thick, and eight inches wide. The pistons of the pumps acted against the lower sides of these plates, which were adjustable to the requisite height by means of nuts screwed on both ends of the bolts.

Every thing having been cleared away between the lower side of the obelisk and the stringer-pieces of the trestle, the trunnions were hoisted by a pair of shears on one side and a boom derrick on the other, and carefully adjusted to the centre of gravity of the obelisk. Plate xxviii, enlarged section through the centre of gravity, illustrates the method of claspings the obelisk in the trunnion plates. Strips of very soft wood were placed against the stone to prevent injury by the iron; the plates *P* were then slid into position, between the lips *E* and the wood; the bolts *H* were rove through the lugs in the trunnion plates, and nuts screwed over the threads in both ends as tight as possible. The truss *T*, the same as that used in Alexandria, was then adjusted, as shown on Plates xxvii and xxviii, to support the ends of the obelisk. This work was completed on January 15th, and on that day the obelisk was lowered by the hydraulic pumps until the trunnions rested in the pillow-blocks and the entire weight had been transferred from the trestle to the turning structure. All supports were then removed from under the ends in order to test the turning apparatus and to determine whether or not the obelisk had been suspended exactly at its centre of gravity. The structure gave no evidence of weakness, and the obelisk turned easily in either direction.

The ancient Egyptians had invariably placed the obelisks they erected directly on the *pedestals*. The Romans had invariably mounted those they removed on metal supports, leaving a space between the obelisk and pedestal. My desire was to give the obelisk the greatest possible stability, while restoring it and its accessories as nearly as possible to the exact conditions that existed in Alexandria when I took possession of them. With this in view it was decided to mount the obelisk directly on

the pedestal, and place the metal supports under the corners. The bottom was imperfect from injuries received before I took charge of it, and not over two thirds of its area would come in contact with the pedestal. To give it a bearing surface equal to that which it would have if the corners had not been broken off, flanges had been cast on the bottoms of the crabs nearly equal to the difference of the area of the bottom of the obelisk as it is and as it was originally. Recesses *R*, Plate xxviii, end view of base, were cut into the rounded part of the bottom for the upper bearing on the crabs. These had been reproduced from plaster casts of the originals, perfected by Mr. Theodore Baur, sculptor, with great skill and feeling. The new crabs were cast at my expense in the Brooklyn Navy Yard, Commodore G. H. Cooper, U. S. N., Commandant, by permission of the Honorable Nathan Goff, Secretary of the Navy, under the immediate and careful supervision of Chief Engineer Charles H. Loring. Artistic moulders could not be found to complete this work. It was done mainly by the ordinary brass-moulders of the Navy Yard, to whose skill the results bear ample testimony. The metal is a bronze as nearly as possible the same as that of the crabs cast by the Romans nineteen centuries ago. The average weight of the new crabs is nine hundred and twenty-two pounds each.

The decision to place the bottom of the obelisk directly in contact with the pedestal necessarily involved a change of plan from the reverse method of raising it in Alexandria. The new plan is fully illustrated on Plate xxviii. Plaster casts were made of the sides of the obelisk close to the bottom. From these casts moulds were made that would allow for shrinkage of the molten metal, so that the clamps would fit exactly into the hieroglyphs and around the broken corners. Lugs (*L*) were cast on the outside faces of the clamps for the trunnion tie-rods (*C*) to pass through. The ends were also provided with holes for steel bolts (*I*) to pass through from one to the other. The weight of each was five thousand seven hundred pounds.

The clamps were hoisted and placed in position on January 18th. The bolts (*I*) passing through the ends were provided with threads over which nuts were screwed to bind them tightly against the stone. It is evident that the metal that fitted into the recesses of the hieroglyphs and around the corners of the obelisk would prevent the clamps from sliding toward the trunnions when the tie-rods had been placed in position and tightened. For the same reason the obelisk could not slip downward after it had been turned to a vertical position, until the tie-rods (*C*) had been lengthened by revolving the turn-buckles (*K*).

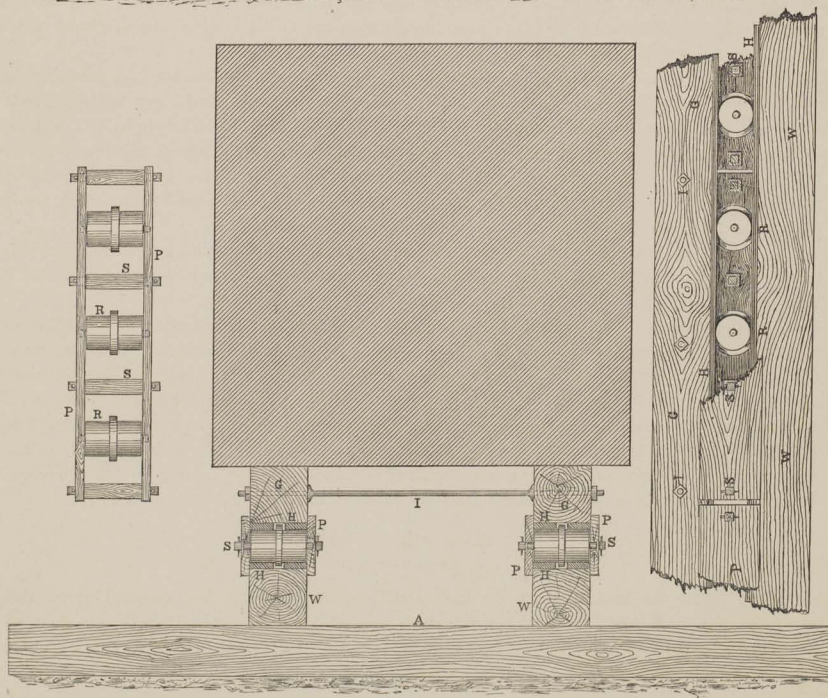
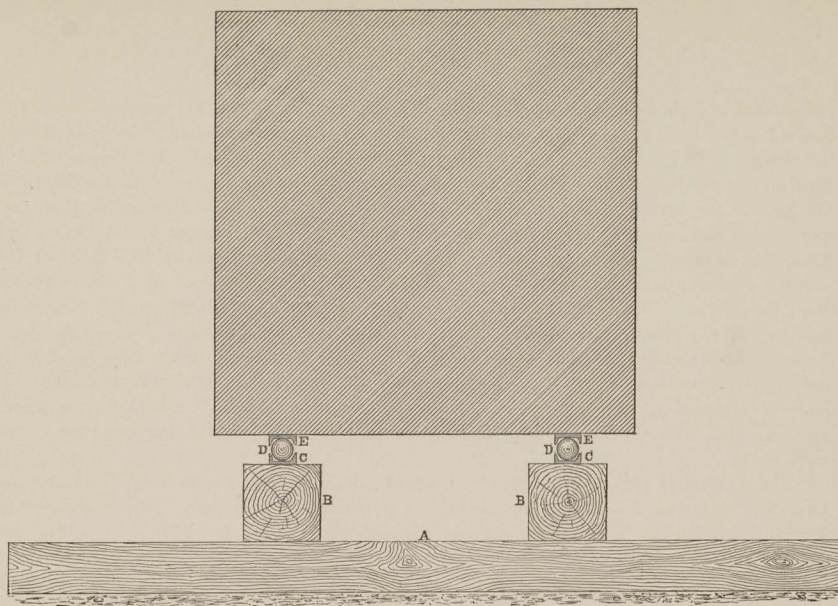
The work of demolishing the trestle had been proceeding rapidly, and by January 20th all the bents, except the double one, shown on Plate xxvii, under the forward end of the obelisk, had been removed.

The composition clamps had given the large end of the obelisk preponderance enough to overcome the friction of the trunnions in the pillow-blocks while the obelisk was horizontal. Tackles were led from both ends to suitable places to insure perfect control; and by the forenoon of January 20th the obelisk was ready to be placed vertically on its pedestal. Noon of January 22d had previously been fixed on for the operation. To thoroughly test every thing and be reassured that there would be no unforeseen difficulty, an experimental turn was made at 11 o'clock P.M. of the 20th. The obelisk was then replaced in a horizontal position, and remained suspended on the turning structure through the violent gale of January 21st, that left its mark on so many things in and around New York.

RE-ERECTING THE OBELISK.

NOON JANUARY 22, 1881.

Long before the hour fixed on for turning the obelisk, spectators had occupied every available space in the park and its vicinity from which a good view could be obtained. In spite of the piercing cold wind and thick bed of snow that lay on the ground, ladies formed at least half of the



IRON CHANNELS AND MARINE RAILWAY

ten thousand persons estimated as the number who witnessed the operation. A cordon of park-keepers encircled the immediate vicinity of the site, and with difficulty kept the crowd from encroaching within the space reserved for workmen. A platform had been erected on the north side of this space for the accommodation of distinguished persons and officials. A battalion of sailors and marines from the Navy Yard, Brooklyn, under the command of Lieutenant-Commander W. H. Whiting, U. S. Navy, and Captain Bishop, U. S. Marine Corps, had been ordered by the Secretary of the Navy to act as a guard of honor for the occasion. They arrived at the park headed by the Marine Band at a little before noon, and were paraded in double line on the north side of the site, enclosing the platform on three sides. His Honor, W. R. Grace, the Mayor, the Aldermen, and other officers of the city, many of the civil and judicial officers of the State, very many civil, judicial, army and navy officers of the United States, nearly all of the foreign consuls residing in New York, a large delegation of the members of the Grand Lodge, almost all the members of Anglo-Saxon Lodge in a body, and a large number of distinguished citizens and professional men, accompanied by their wives and families, having positions upon the platform, occupied nearly every inch of available space. Five thousand cards had been issued as a souvenir of the event, bearing on one side a picture of the obelisk as it stood in Alexandria, and on the other an announcement that it would be placed on its pedestal in the Central Park at noon of January 22d.

A few minutes before noon the Hon. Wm. M. Evarts, Secretary of State, the Honorable Nathan Goff, Secretary of the Navy, and Mr. William Henry Hurlbert, Editor of the *New York World*, drove up to the foot of Graywacke Knoll, dismounted, and took positions reserved for them on the platform. The men stationed at the fall of the down-haul tackle from the base, and those stationed at the fall of the lowering tackle from the top of the obelisk, had been previously instructed to haul down and slack away, respectively, when I held my hand up, and as long as it was held up, and to stop as soon as I lowered my hand. After a moment's conversation with Mr. Evarts the signal was given, and the obelisk slowly turned, the spectators preserving a silence that was almost unnatural. When the obelisk had changed from the horizontal to an angle of about forty-five degrees, I gave the signal to hold it in that position while Mr. Edward Bierstadt made a photograph for which he had made preparations. This seemed to break the spell that bound the spectators in silence, and when the signal was given to continue the turning there arose a loud cheer which was prolonged until the shaft stood erect. It is something to have witnessed the manipulation of a mass weighing nearly two hundred and twenty tons changing its position majestically, yet as easily and steadily as if it were without weight. It was to me an inexpressible relief to feel that my work was complete, and that no accident or incident had happened that would make my countrymen regret that I had been intrusted with the work of removing and re-erecting in their metropolis one of the most famous monuments of the Old World and the most ancient and interesting relic of the past on the American Continent. Only five minutes elapsed from the first signal to the time the obelisk was vertical. As it reached this position the Marine Band played the national airs while the battalion presented arms. Congratulations followed, and the spectators very soon dispersed.

After the grounds had been cleared the hydraulic pumps (*A*, Plate xxviii) were placed in position under the clamps (*B*) on each corner of the pedestal. The obelisk was once more suspended on them, the bolts of the trunnions were slackened, the turn-buckles of the tie-rods revolved, and the obelisk lowered by the pumps and turn-buckles until it rested on the pedestal. Adjusting it so as to have the axis correspond with that of the shaft, heating the surfaces that were to come in contact so as to fit them for a thin layer of cement, and spreading this cement uniformly in the severe cold that prevailed during that afternoon, delayed the work until eight o'clock in the evening, at which hour the obelisk was finally landed on the pedestal and released from the turning structure. Fifteen months had elapsed from the day the work of removal began in Alexandria. In this time it had travelled five thousand

three hundred and eighty miles by water, and eleven thousand five hundred and twenty feet by land; had been lowered thirty-nine feet, and lifted two hundred and thirty feet.

Removing the machinery, demolishing the foundation walls and workshops, and clearing away the debris from Graywacke Knoll, were all accomplished within ten days after the obelisk was re-erected. Placing and securing the crabs in position was a tedious process, owing to continued freezing weather, and occupied us ten days longer. To give the upper part of the metal a uniform bearing, molten lead was poured into the vacant spaces and caulked in around the edges. To render their removal impossible without destroying the pedestal, molten lead was poured into the mortices around the dowels projecting downward from the lower side of the flanges, through holes bored in them for the purpose. The crabs are not ornaments only; they serve to give the bottom of the obelisk a bearing surface on the pedestal nearly equal to the area of its base if the corners had not been broken off. To pull the obelisk over without first raising it clear of the pedestal would require a force applied to its centre of gravity equivalent to that required for lifting seventy-eight tons. The maximum pressure that could be exerted by wind blowing with the force of a hurricane on the obelisk would be equivalent to that required to lift fifteen tons. This pressure would be exerted uniformly over the whole of one face or its equivalent. The factor of stability is therefore very great. It would require an exceptionally severe earthquake, one that would leave very few buildings in New York standing, to render the obelisk unstable.

THE PRESENTATION CEREMONIES.

The ceremony of formally presenting the obelisk to New York City was fixed for February 22d, and the use of the grand hall of the Metropolitan Museum near by was tendered by the trustees for the purpose. A committee, of which the Honorable Henry G. Stebbins was Chairman, Messrs. Algernon S. Sullivan, John Taylor Johnston, Robert Hewitt, Jr., and Stephen A. Walker were members, had perfected all the arrangements and issued tickets of admission to the museum.

The following detailed account of the ceremony and incidents connected therewith is reproduced from the *New York World* of February 23d. It would be impossible for me to make a better record of the facts. It would be embarrassing for me to relate such as have a personal bearing, and it seems as if the record would be incomplete without them.

The tide in the direction of Central Park and the obelisk set in at noon, and at 2 o'clock had flooded the flat ground between the Metropolitan Museum of Art and Greywacke Knoll, upon which the obelisk stands, and all the walks and drives adjacent thereto, with people. Not a train on either of the elevated roads, not a car on the several street railways, but had gone up town after noon loaded down with passengers. At a rough estimate there were in the Central Park at 2 P.M. 20,000 people. It had been announced that the interesting ceremonies connected with the formal presentation to the city, through the United States government, of the Khedive's splendid gift would take place within the shelter of the Metropolitan Museum of Art, and that admittance to the museum could only be obtained by tickets. Nevertheless an unlimited number of people, a throng beyond the capacity of any ten halls in New York combined, went to the park, bent upon hearing the address of the Secretary of State, and on being close eye-witnesses of all the interesting details of the presentation. This fact is pleasant, inasmuch as it shows beyond peradventure that the people of New York are not insensible of the value and magnitude of Egypt's gift to America; but the immediate results were inevitable. To have opened the doors of the Metropolitan Museum, spacious as is that structure, to the throng which surged about it, would have been to produce a crush in which nobody could have lived. Early comers had, however, taken possession of the top steps leading to the two doors of the museum, and behind them, stretching away to the north and south, were solid lines of impatient citizens who blocked the broad stairways and the asphalt walks, and rendered it a matter of extreme difficulty for invited guests to extricate themselves from their carriages and gain a foothold anywhere in front of the museum building.

At 2.10 o'clock, a platoon of park policemen having meantime been pressed into service, the doors leading to the museum were opened and the holders of tickets were admitted. It was the crush of a favorite opera night ten times intensified. Presently, however, as the hopelessness of obtaining an entrance began to dawn upon the unticketed, the ways broadened and the invited company was ushered into the hall. At the east end of the main floor a platform capable of seating sixty or seventy persons had been erected. Facing this platform were



ARTIST'S

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REPRODUCED, N. Y.

TRANSPORTING THE OBELISK

a number of chairs reserved for the holders of special tickets. The intervening space between the reserved rows and the four walls of the building was quickly filled. It was a thoroughly amiable throng, however, which had taken possession of the building, and understanding that accommodations were of necessity limited, contented itself in good-humor. The scene through any one of the great windows in the front of the building would at this moment have done good to the gracious heart of his generous Highness the ex-Khedive Ismail. Clear cut against a cloudless sky rose the graceful lines of the monolith. Thousands of people, made very small by contrast with the towering shaft, crowded around its base and pressed one another on the sloping hill. Closer at hand, between the throng of devotees at the base of the monument and the Museum of Fine Arts, was a mass of carriages. Inside of the museum the only unoccupied space at 2.30 o'clock was the platform. The north gallery had been taken possession of by Theodore Thomas' New York chorus, and the south gallery, divided by a partition, gave seats to the one hundred common-school boys who were to receive copies of the medal struck in honor of the occasion by the Numismatic Society, and to a number of ladies whose avowed interest in the obelisk, as well as in the Museum of Art, entitled them to special privileges.

At a little after half past 2 P.M. Mr. Evarts, leaning upon the arm of Mr. John Taylor Johnston, ascended the platform. His appearance was the signal for an outburst of applause, which had not ceased when all the gentlemen who followed him had found seats. Immediately behind Secretary Evarts and Mr. Johnston were Chancellor Howard Crosby and Chief-Justice Daly, the former wearing the black silk faced with violet velvet robe of his office. The platform soon became fully occupied. His Honor, W. R. Grace, the Mayor, who was to receive the gift, was seated next to Secretary Evarts, who was to present it.

Mr. John Taylor Johnston, the President of the museum, presided. Mr. Evarts was given a seat at his right. President Barnard, with Lieutenant-Commander Gorringer at his side, sat on Mr. Johnston's left. Dr. Crosby, at the request of Mr. Johnston, began the ceremonies with prayer, as follows:

"Almighty God, our Heavenly Father, Who hast given to us a goodly heritage in this land of liberty and peace, and hast afforded us opportunity and means for growth in wisdom and knowledge, we desire to lift up our hearts to Thee with humble and grateful acknowledgment of Thy mercies and to ask for Thy continued favor. We thank Thee for the prosperity of our beloved city, for its health and thrift, for its wealth and enterprise, and for its institutions of charity and education. We thank Thee for the centres of refined culture Thou hast enabled our citizens to establish by which to elevate and enlighten the public mind, and now this day we do give Thee our hearty thanks that Thou hast permitted the enterprise which connects us with an extreme antiquity to be brought to a successful termination; and we pray Thee, most gracious Lord, that those who have been especially instrumental in forwarding this work may be rewarded by seeing its utility, both as an ornament and a teacher among us, adorning the city, while it contrasts our light and privileges with the darkness and tyranny of the older time. We beseech Thee, Almighty God, to accept our petition for Jesus' sake. Amen."

Next the hymn, written expressly for the occasion by Mr. Richard Watson Gilder, was finely sung by Mr. Thomas' trained choir in the north gallery, which was conducted by Mr. George F. Bristow and Mr. William G. Dietrich. The hymn, which had been adapted by Mr. Thomas to the music of Luther's hymn, "Ein' Feste Burg," is as follows:

Great God, to Whom since time began
The world has prayed and striven;
Maker of stars, and earth, and man—
To Thee our praise is given!
Here, by this ancient Sign,
Of Thine own Light Divine,
We lift to Thee our eyes,
Thou Dweller of the skies—
Hear us, O God in heaven!

Older than Nilus' mighty flood
Into the mid-sea pouring,
Or than the sea, Thou God hast stood—
Thou God Whom we're adoring.
Waters and stormy blasts
Haste when Thou bid'st them haste;
Silent, and hid, and still,
Thou sendest good and ill:
Thy ways are past exploring.

In myriad forms, by myriad names,
Men seek to bind and mould Thee;
But Thou dost melt, like wax in flames,
The cords that would enfold Thee.
Who madest life and light,
Bring'st morning after night,
Who all things did'st create—
No majesty, nor state,
Nor word, nor world can hold Thee.

Great God, to Whom since time began
The world has prayed and striven;
Maker of stars, and earth, and man—
To Thee our praise is given!
Of suns Thou art the Sun,
Eternal, Holy One:
Who can us help save Thou?
To Thee alone, alone we bow—
O hear us, God in heaven!

Removal of the New York Obelisk.

An introductory address by Mr. Henry G. Stebbins, the Chairman of the Committee of Arrangements, was to have followed the singing of the hymn, but Mr. Stebbins was not able, as will be seen by the following letter, to be present:

" 2 WEST SIXTEENTH STREET, February 21st.

" A. S. SULLIVAN, Esq.

" DEAR SIR: I had hoped and expected until to-day to perform the duties assigned to me by the committee in charge of the arrangements in the formal presentation of the obelisk in Central Park to-morrow. I find myself, however, prevented by a sudden and severe cold, which forbids the carrying out of my purposes. I regret this the more because I have taken a special interest in the bringing here and in the location of an artistic memorial of an ancient civilization, which now fitly looks on the beginning of what I trust will become a great museum of art. This museum is destined to supply a permanent home for the trophies from all countries and of all periods in which art has flourished and left its memorials. I hope I may be allowed to express my conviction that the selection of the site for the obelisk will be more approved as its harmony with the surroundings and the security of its setting become more and more generally recognized. Liberality, enterprise, official aid, and private assistance have added a graceful and suggestive monument to our great out-door gallery. I hope that the successful placing of this interesting monument in such a relation to the future national gallery of America will encourage our wealthy citizens to enlarge the Art Museum and to fill it with all those treasures which so greatly increase the attractions of the metropolis.

" Yours, very sincerely,

" H. G. STEBBINS."

Mr. John Taylor Johnston then introduced Mr. Evarts, who was received with hearty applause, and who in the following address formally presented the obelisk to the city:

MR. PRESIDENT, LADIES AND GENTLEMEN: I responded with pleasure to the call of the committee to take such part in the installation of the obelisk as they in their judgment thought suitable. My relation to the occasion and my service before you are naturally and necessarily mainly official and ceremonial, for I have had no personal share in the first construction of this obelisk, nor in any of its movements since; and in the great transaction so creditable to ourselves and our age by which it has been acquired, by which it has been transported, and by which it has been placed on this site, I have had only an official and ceremonial share. I think it is something like twelve years ago that one of our distinguished fellow-citizens, the head of one of the principal journals of the country, being in the Mediterranean on the occasion of the opening of the Suez Canal, and being in the company of the Khedive of Egypt, learned from him that there was no insurmountable obstacle in Egyptian mystery or Egyptian pride against the obelisk's being sent across the ocean, if only an obelisk could be supposed capable of making the voyage. This idea, cherished for some years, at last began to put itself in the course of execution. In the first year, I think, of my administration of the Department of State some preliminary considerations on the subject were taken between that gentleman and myself; but it was not until the visit of our excellent and faithful Consul-General in Egypt, Mr. Farman, to this country in the summer of 1878, that full information was gained here of the conditions necessary and the prospect of success, and that full instructions were given to him on the part of the government as to his action in reaching the desired end. From that step the stages were easy and rapid, and in May, 1879, Mr. Farman informed the State Department that the consent of the then Khedive had been given to the transaction, and your distinguished fellow-citizen, Mr. Stebbins, was acquainted with the success of the measure to which from the beginning he had lent his name and influence. Thus it seemed as if every difficulty was overcome so far as the good-will of the Khedive was concerned, and the first step of our government for the transfer of the prize; but by one of the vicissitudes of government which abound in that land the Khedive suddenly abdicated, leaving his gift incomplete and leaving the country and the obelisk behind him, and there was somewhat of solicitude whether the incomplete gift would be assured to us by the approval and ratification of his successor. But the delicate and careful and faithful efforts of Mr. Farman were at last crowned with success, notwithstanding some obstacles on the part of jealous governments which thought it a shame that their capital should not hold all the obelisks, even if Egypt should be despoiled of them. When we arrived at that conclusion we went in search of a man of courage, skill, and knowledge of the sea, competent in the judgment of others and confident in his own ability, and we were fortunate in finding such an one in an accomplished officer of our navy, Lieutenant-Commander Goringe, a man wholly fitted for the achievement of bringing the obelisk hither. And when I asked the Secretary of the Navy to grant him leave of absence, and desired to know whether his previous record had been such that this grand work, with all its risks and peril, could be entrusted to him, I got but one answer, and that was that whatever Goringe undertook to do he would accomplish. Whether that was as well-deserved a reputation then as I supposed it to have been I know not, but I think that the wider circle of observers and the generous testimony of his fellow-citizens will now give warrant, that whatever Lieutenant-



ARTIST'S

HARROUN & BIERSTADT, N. Y.

OBELISK CROSSING THE MAIN DRIVE IN CENTRAL PARK.

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Commander Goringe undertakes to do he will accomplish. Lieutenant-Commander Goringe reached Alexandria on the 21st of October, 1879. He procured a vessel and began the opening of her sides, or her bow or her stern or whatever was most useful, in order that the obelisk might be trundled into it on cannon-balls. He left with it about June, 1880, and met with a disaster at sea that was enough to wreck the vessel had he not been provided with a shaft to replace the broken one. He reached here some time about the 25th of July, and then the labor of the land passage began, which was incomparably greater than that of the transport across the Atlantic. By slow stages the obelisk traversed its way along our crowded thoroughfares, and finally reached a position to be elevated on its present pedestal on the 22d of January last. The foundation had been prepared previously, and the laying of its corner-stone had been accompanied by imposing ceremonies under the charge of the Masonic institutions of this country, that institution finding most interesting records to show that the Free and Accepted Order of Masons existed in Egypt at least 1,800 years ago. Now the communication of these facts leaves only one thing to be added, and that is that an obelisk cannot work its own passage across the Atlantic. Somebody must pay for it, and such an one had been found in your very public-spirited fellow-citizen, a man furnished with abundant means to carry out whatever he should undertake in a financial direction. When he was first approached on the subject, Mr. Wm. H. Vanderbilt made the immediate and generous response, that he would bear the expense of the undertaking, desiring his name not to be mentioned until a time should come when it could properly be announced. His presence was expected here to-day, but we are deprived of it by some casual infirmity which detains him from us. These facts, the voyage of this obelisk and the provision for the expense thereof, show, I think, a munificence unexampled, great advance in opportunities and means of such transportation, and great skill, energy, and economy. The expense of the transfer has been a little over \$100,000, and Lieutenant-Commander Goringe has contributed his services as his part of the great work.

"This is not the first obelisk that has left its home in Egypt to seek new scenes; but never before perhaps has the transfer been as voluntary on the part of the Egyptian government as now. These obelisks, great and triumphant structures, having for their inscription nothing but the official pomp of their founders, mark a culmination of the power and glory of Egypt, and every conqueror has seemed to think that the final trophy of Egypt's subjection and the proud pre-eminence of his own nation could be shown only by taking an obelisk—the chief mark of Egyptian pomp and pride—to grace the capital of the conquering nation. The first was taken by a conquering Assyrian monarch, of great mark in his time and remembered through all the ages since, known better to us and more easily by the Greek name of Sardanapalus. He took an obelisk to Nineveh when that empire was the mistress of the world, and that obelisk made the first great voyage like this which our obelisk has taken. Although there are no records of the precise route which the Assyrian took for his obelisk, yet it is very apparent that it was taken to the Red Sea, and then down the Red Sea into the Indian Ocean, and then through the Persian Gulf to the mouth of the Euphrates, and thence to Nineveh, beyond the navigation of the river. This route must have included some 1,500 miles of water transport. We are somewhat at a loss to understand how the methods and vehicle for such a transportation could have existed at that age. We have but little record of that; but as the obelisk undoubtedly got to Nineveh and could not get across the desert by land, it must have made this circuitous route of 1,500 miles. The next power which assumed to take obelisks from Egypt was the Roman State in the times of the emperors, and they took as many as fifteen, one after the other, and twelve of them now remain in Italy. This brings us to the period close upon the Christian era and to the time of the first famous Cæsar, Julius, and his successors, when Egypt, subject and abject, yielded up the treasures of its art and of its faith to the conquering spoiler. Next comes the Eastern Empire, having Byzantium as its capital, and it, too, demanded contribution of the wealth of Egypt,—the contribution of obelisks to mark the domination of the city of Constantine,—and Byzantium, now Constantinople, still contains two obelisks thus taken. This closes the list of transportations in ancient times. All subsequent removals of obelisks have been within this century. The French and British, as all know, made Egypt a battle field, and the famous naval battles of the Nile and the famous battles in which Napoleon and Abercrombie measured their strength are familiar to us all. Egypt recognized her obligations to England, and offered an obelisk to England—then the great power of the earth,—but its very transportation—the expense thereof—seemed so serious that the gift remained lying on the sand at Alexandria, and no attempt was made for its transfer until 1877. This was completed in 1878. British ingenuity in the architecture of naval vessels and in navigation and in engineering had only taught Britons that the obelisk could not be carried in the hold of a ship, and the experiment was made of building a vehicle around the obelisk that could float it and float itself, and could be towed by steamer so arranged as to give the crew an opportunity of saving themselves, so that when it came to a choice between the sinking of the obelisk and the sinking of the crew the steamer could be cut loose from the tow. The experiment was not such as to encourage imitation by us even if Commander Goringe had not had that faith in a ship which had been his cradle from his youth, and had not thought that if a ship could carry all the men and all the armor and all the cargoes that modern civilization burdens it with, it could carry the obelisk. The caisson, or whatever it was called, in which the English obelisk was inclosed was abandoned in mid-ocean, and the experiment, delayed for fifty years from the time the gift was made till the courage and skill were found to undertake it, stood disappointed in its accomplishment. Some

adventurers of the sea, picking up the abandoned obelisk, towed it in and afterward libelled it in the Admiralty Court and received £5,000 for executing what the original arrangement had failed to accomplish. The French obelisk was given by Mehemet Ali to Charles X, though Napoleon had long before planned the taking of one to Paris. In 1831, just fifty years ago, Louis Philippe undertook the transportation, and placed the obelisk where so many good Americans have seen it, in Paris, in Place de la Concorde. It is indisputable that the expenses of this transfer across the Mediterranean, or around by the Bay of Biscay, whichever way it went, were nearly \$500,000, or about five times as much as our enterprise, under the execution of Commander Gorringe, cost.

"Our obelisk is here. It is here—and now, Mr. Mayor, I have the honor to transfer to the keeping of the city of New York this great and ancient monument. May it stand upon its site a perpetual monument, an emblem of Egypt, a witness and teacher of that most ancient civilization, to be cherished by this great modern city in the present and the future, as a pledge and an evidence of the constant friendship of the ex-Khedive Ismail, of his son Tewfik Pacha and of the Egyptian government to the government and people of the United States. What is our obelisk? How came it here? What shall it teach us and what shall we say to it while it remains with us? This obelisk was one of two at the Temple of Heliopolis, a few miles from Cairo, and was one only of the numerous structures of this character that the great King Thothmes III raised in glory to himself and in honor to his god. Great temples, great monuments in other forms as well as in obelisks, marked his reign. He was the greatest king that Egypt had ever seen. He had united Upper and Lower Egypt into one kingdom. He had conquered other nations and extended the Egyptian frontiers to the ends of the earth. He was a patron of the arts, a lover of learning, had all the kingly virtues, was full of devotion to religion, faithful to Egypt, a magnificent king and conqueror. He was of the age that saw the exodus of the Hebrews from Egypt. He was of the age in which Moses was born. He appears in the long line of history with the greatest conquerors of the world—with Alexander, with Caesar, with Napoleon. He lived in a stage of society at a period in the world's advancement when the gulf between the king and the people was vast, and in the proportion in which he was vast and magnificent they were abject and poor. This obelisk, then, standing there in front of that temple for fifteen hundred years, saw all the famous men of other countries seeking the learning of the Egyptians in this temple, the great school resorted to by great statesmen and philosophers of the ancient world. No doubt, passing under the shadow of this obelisk, Moses came to know all the wisdom of the Egyptians. In this same temple Solon and Thales and Plato learned the wisdom that made them the benefactors of the world. Transferred to Alexandria to grace the triumph and illustrate the supremacy of the Caesars, our obelisk witnessed there on the shores of the Mediterranean—in the great city founded by the Greek who carried the arms of Europe to the Indus—the rise, fluctuation and fall of great schools of philosophy, the fortunes of a mighty mart of commerce, and the final disappearance of Græco-Roman civilization under the flood of Mahometan conquest. Cleopatra got more credit for this needle, or rather this needle has got more credit from Cleopatra than the fact justifies. It was not erected in front of the temple or palace of the Caesars until six years after her death, and whatever the glories were that Cleopatra and Caesar shared together in the Egyptian splendor of those days at Alexandria, this obelisk and its contemplation were not among them. Yet it formed a part of Roman splendor and domination in Egypt, and while they took as many as they pleased, fortunately this was left, as being associated with Roman glory in Alexandria, in front of the palace or temple of the Caesars. The other was thrown down, but this one stood wherever it was placed from the time it was so placed until, standing, it was taken down to be removed. This, then, is the genius of this obelisk—the faculty of staying where it was put. It never has been prostrated by time or casualty. It never has been broken by clumsiness or blundering. It never has been out of good hands. First, those of Thothmes and his engineers; second, of the Caesars and the Roman masters of mankind; and, third, of Mr. Hurlbert and Mr. Stebbins and Commander Gorringe and Mr. Vanderbilt. What, then, is the lesson, what the teaching that this obelisk is to give us? Hitherto, in ancient times, each one was transferred from its home in Egypt, at a time of the strength and pride of the nation that took it, as spoil. These obelisks have looked down and waited, not in vain, for the same strife, for the same ruin which they had witnessed in Egypt. Rome, mistress of the world, in the sight of the obelisks planted in the great city, was taken and sacked by Northern barbarians, its empire dispersed, its learning, its civilization obscured, its power as an empire never again restored. The obelisks of Byzantium saw the last Constantine perish under the tide of Asiatic barbarism. Assyria within our obelisk's lifetime has fallen as an empire—by successive conquerors has been trampled in the dust. Asia still holds its obelisks, if you can only find them, but they have been buried in the ruins of Nineveh, which has hidden them from all modern explorers. Sooner or later, then, in the experience of ancient times, the obelisks have had their revenge, if they cherished any affection for Egypt and felt any humiliation in her degradation and their transportation. If these obelisks could only tell of the glories in which they have assisted, if they could only remember all they saw and only narrate all they remember, what teachers they would be! How they would smile at modern strength and glory and at the pride of one hundred or one thousand years as indicating strength and permanency and endurance! How they would say, whatever else may be the forms through which civilization and population, governments and power of nations are to pass, there is one common grave of ruin in which they are all to be buried.

"Turning to modern obelisks we see what has happened within the brief time in which one of them for



AMERICAN

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TURNING THE OBELISK.

half a century has stood in the Place de la Concorde. In this fifty years it has seen the monarchy followed by the empire, and that empire yield to the republic. But observe how little those forms of government—how little those great men of the earth—are in the action of modern civilization. How has France been humbled? The pride of domination and dynasty has fallen, but France—greater, richer, freer, more noble and prosperous than ever—stands the same, and this obelisk in the great place of Paris has seen only those little perturbations upon the surface without one stone falling from another in the great structure of the French nation. The English obelisk has not been there long enough to gather much experience about the prosperity of our great mother country. It has so far witnessed only the agitations of the Irish Land League, though who can tell what those may yet portend? While we all feel solicitude and sympathy for her fate, we feel that as a matter of pride, next to ourselves, the mother country of our republic should bear a high place among the nations of the world. But you will say at once that in England any transposition of force—of stated power—would pass for little. It has been a long time since the institutions of England depended upon its monarchy, and it has been a long time since the monarchy has formed one of the vital institutions of the country. Now, here—what shall we say of the prospects and assurances by which we may hope in our system of society, in our system of religion, in our system of government, to outlast the obelisk, if the obelisk is to wait for our ruin? At the very time that Thothmes was rearing these great monuments of his power, a feeble Hebrew infant, doomed to death from his birth in expectation of the race becoming too formidable and too much oppressed, uttered a feeble cry from the bulrushes when the daughter of Pharaoh disturbed his sleep, and Moses has come here long before this obelisk; Moses, the greatest law-giver that the world ever saw—Moses with his ten commandments—is in possession of the churches, and of the schools, and of the literature, and of the morals of society. Egypt is represented not only here but throughout our system of civilization by the cry of the infant Moses, heard throughout the whole modern world. Twenty-two years after this obelisk was raised at Alexandria by the Romans to mark their perpetual dominion, there was born in the neighboring and subject province of Palestine another infant, destined also to death from His infancy—Christ the Saviour, a name before which all kings and rulers and conquerors, all dynasties, all principalities and powers have fallen in obedience; and before this obelisk from Alexandria had reached our shores we had heard the name of Christ, and the religion of Christ has been made the basis of our civilization, of our national strength, of our national permanence. I do not deny that we may see slow corruption. I do not deny the possibility of popular failure. I do not know but you may become weary of well-doing, and scoff at Moses and the prophets, and fall away from the name of Jesus. Who indeed can tell what our nation will do if any such perversity is possible of realization; and yet this obelisk may ask us, 'Can you expect to flourish forever? Can you expect wealth to accumulate and man not decay? Can you think that the soft folds of luxury are to wrap themselves closer and closer around this nation and the pith and vigor of its manhood know no decay? Can it creep over you and yet the nation know no decrepitude?' These are questions that may be answered in the time of the obelisk, but not in ours."

At the conclusion of Mr. Evarts' address, Mayor Grace, who was seated just behind President Barnard, arose to respond on behalf of the city, and, bowing to Mr. Evarts and the ladies upon the platform, said:

"SIR: On behalf of the city of New York it affords me great pleasure to receive from the Khedive of Egypt, through the kindness of very public-spirited gentlemen, the great historical monument which now adorns our Central Park. The generosity of the donor is extreme. He sends us to be placed in our midst a most valued and valuable monument of an older era, as if to remind us of the instability of nations, of our own youth, and of the greatness of the past. The civilization in the midst of which this monument was constructed presents a most perfect contrast to that of our day and country. The social constitution of Egypt, based as it was upon caste, has nothing in common with that newer notion which lies at the bottom of the modern state—absolute equality of opportunity, absolute equality before the law. As time has proved the enemy of the old social form and the friend of the new, it may be hoped that the stability which was wanting to the one may not be so to the other. Strangely enough, that civilization whose bond was community of blood, and of which the city was the parent and the centre,—the pre-Christian civilization,—was that which afforded the least stability to the city, while that which regards universal liberty as the groundwork of society, and holds the city as only a constituent part of a larger political whole, is the most favorable to municipal development. As our city grows in its liberties it continues in the true spirit of conservatism to save all of value in the past, and so a historical monument which will serve to bind us to antiquity as does this great obelisk—which has been safely brought here only by the exercise of the greatest ingenuity and engineering skill—is something of which the city of New York should be, and, I assure you, will be proud."

Mr. A. S. Sullivan then rose to present the medals struck in commemoration of the occasion. "On behalf of the American Numismatic and Archaeological Society of New York," he said, "I have now to fulfil a commission without which our proceedings would almost fail to express in rounded proportions the significance, the utility, and the beauty of these stately ceremonies. Yonder cuts the Western sky a memorial stone which has hitherto been a beacon under an Eastern sky. While, as I speak, its shadow, from the sinking sun, moves toward us, it seems to people this museum, from the dim past of the Orient, with weird myths and mysteries and splendid legends. That monolith was an emblem of Deity. The kings and priests who set it up have been mummies for thirty centuries, and their sun-worship is giving place to the adoration of the '*Lux Benigna et Divina*' of the

true revelation. Their monument has been moved to the new continent to be an ever-speaking witness to the continuity and unity of human thought. It is the fittest of all possible sentinels at the portal of our future great archaeological temple. An appreciative token of the liberal financial donor, Mr. William H. Vanderbilt, and of the skilful and indefatigable engineer, Lieutenant-Commander H. H. Gorringe, U. S. N., to whose mediary agency we owe this souvenir of Egyptian methods, has been stamped upon medals to commemorate this occasion medically, artistically, and historically. The first impressions from the die in silver, in the name of the distinguished society already named, and in view of this assembly, I now deliver to Mr. Vanderbilt and to Lieutenant-Commander Gorringe, whose great services to the cause of art and historic enlightenment are hereby recognized by all the educational circles of New York and America."

As he spoke Mr. Sullivan removed from its paper folds a long flat box of handsome workmanship, which he handed unopened to Commander Gorringe amid the applause of the audience. Commander Gorringe, hearing cries of his name from all parts of the hall, signified by a gesture to Mr. Johnston his disinclination to speak. Mr. Sullivan, saying that the absence of Mr. W. H. Vanderbilt was deeply regretted by him and, he had no doubt, by all present, also handed a box, similar to the one presented to Commander Gorringe, to a gentleman who took charge of it for Mr. Vanderbilt. The medals contained in these boxes were similar in character to those which were immediately afterward presented to the boys from the public schools, wrought only in more precious metal. Mr. Sullivan then addressing the hundred boys, who had risen to their feet and whose bright faces were turned attentively toward him, continued:

"But there remains the closing and not the least important feature in the design of this celebration. I turn to the gallery above us and I see one hundred faces of as many bright boys of New York and who represent the one hundred thousand children who crowd her public schools. My lads, you are welcome participants in our ceremonies. It is, perhaps, the first time in the history of New York that the children have been formally given a station in great public movements, but I hope it will not be so hereafter. We wish you to grow up with the feeling that the monuments, the museums, the libraries, the statues, the public institutions, the churches, the parks, and all the agencies that look to the improvement and the refinement and the health of the people, to the honor and virtue and morals of the city, to its public spirit and its civic pride, to its good repute and its magnificence, are a trust which you are soon to assume. They are now to influence and educate you, and we beg you to cherish them continuously. Let your book-studies be associated with all these sentiments. Meditate upon them with love. Determine to take a part in the community for its good, and that New York shall be better for your having lived in it. Revere such benefactors of mankind as dear old Peter Cooper, and ever remember that 'a good name is better than riches.' In the hope that this day shall be a great teaching day to all the children of New York, and lift them forward on an ascending plane, I address you as the representatives of all of them. I also present to you a medal which, as a talisman, shall ever remind you of the beauty and the duty of good citizenship. The motto upon the medal is taken from a Latin poet, and is '*Discipulus est priori posterior dies*,' and may be translated, 'To-day must learn from yesterday.' I entreat you to observe in your lives the lessons, the wisdom, and the examples of experience.

As the crowded condition of the building rendered it impracticable for the boys to come down to the platform to receive their medals Mr. Sullivan handed them over to the care of a teacher appointed by President Walker, of the Board of Education, to receive and distribute them. Each medal was encased in heavy paper made into the shape of a little book, which books contained upon their outside covers a copy of the inscription on the pyramidion of the obelisk and the seal of the American Numismatic and Archaeological Society in the name of which the medals were presented, together with the following inscription: "Presented to ——— on behalf of the American Numismatic and Archaeological Society of the City of New York, by Robert Hewitt, Jr." The inner covers of the books contained the following memoranda:

"The object of this medal is to commemorate the erection of the Egyptian obelisk in the Central Park as having an educational meaning for the people, and to recall to the present and future generations that the history of the ancients may be studied to profitable account.

"An aphorism borrowed from the poet Publius Syrus has been placed upon it as conveying this idea. The legend is, '*Discipulus est priori posterior dies*,' which may be freely translated, 'Let the future profit by the lessons of the past.' In the field the obelisk is seen a little toward the right; in the background the sun is represented rising over the sea, being an allegory recalling the ancient association of the obelisk with the worship of the sun, and at the same time also representing a part of the arms of the State of New York. In the lower field of the medal are represented the shields of the United States and New York City, grouped; that of the United States being surmounted by the American eagle, and that of New York resting on the scroll bearing the word 'Excelsior.' These two shields, grouped with laurel, are meant to represent the recipients of the gift from Egypt, forming, in all, a trio emblematic of the East and the West."

An inner border, ornamented with stars, representing the States of the Union, separates somewhat the legend from the subject, and the ground of the outer circle, on which the motto is placed, is filled in with the conventional lotos, cut in low relief under the lettering, appropriately suggesting a souvenir of Egypt.



ARTOTYPE

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L. BERTAUD, N. Y.

TURNING THE OBELISK.

The reverse side of the medal bears the following inscription:

PRESENTED TO THE
UNITED STATES
BY
ISMAIL, KHEDEVE OF EGYPT,
1881.
QUARRIED AT SYENE
AND ERECTED AT HELIOPOLIS BY
THOTHMES III.
RE-ERECTED AT ALEXANDRIA
UNDER AUGUSTUS.
REMOVED TO NEW YORK
THROUGH THE LIBERALITY OF
W. H. VANDERBILT,
BY THE SKILL OF
LIEUT.-COM. H. H. GORRINGE, U. S. N.

The bronze crabs placed at each corner of the obelisk are the substitutes of the original ones placed there by the Romans; they bear the following legends, which it seems appropriate to reproduce here as matters of historical record:

First crab, first claw:

(Outside.)
L. H KAIΣAPOΣ
BAPPAPOΣ ANEΘHKH
APXITEKTON ONTOΣ
IONTIOT

(Inside.)
ANNO VIII
AVGVSTI CAESARIS
BARBARVS PRAEF
AEGYPTI POSVIT
ARCHITECTANTE PONTIO

(Reproduced from the original.)

Second claw (cartouch of Thothmes III):

Quarried at Syene, Egypt; erected at Heliopolis, Egypt, by Thothmes III in the sixteenth century B. C.

Second crab, first claw:

Removed to Alexandria, Egypt, and erected there B. C. 22 by the Romans.

Second claw:

Removed to the United States of America A. D. 1880, and erected in New York City January 22, 1881.

Third crab, first claw:

Presented to the United States Government by Ismail, Khedive of Egypt.

Second claw:

Rutherford Burchard Hayes, President; William Maxwell Evarts, Secretary of State of the United States.

Fourth crab, first claw:

The cost of removing from Egypt and placing on this spot this obelisk, pedestal, and base, was borne by William H. Vanderbilt.

Second claw:

Lieutenant-Commander Henry H. Gorringe, United States Navy, designed the plans for and superintended the removal and re-erection.

The singing of "Old Hundred" followed the presentation of medals and terminated the ceremonies.

The following are the names of the medal recipients:

William H. Vanderbilt.

Lieutenant-Commander Henry H. Gorringe, U. S. Navy.

Matthew Francis Farrell, Thomas G. Killen, Clifford Bishop, Clarence G. Christie, George E. Clark, Eli Schreyer, George Cornell, Edward A. Bruen, Richard Schumacher, William Mitchell, John E. Timmons, Jesse Rosenthal, Josiah Ramsey Wray, William Klottman, Max Joseph Zahed, Adam Kellerman, Samuel J. Koplik, Herman O. Bohlen, Charles Keller, Saly Frankenberg, Frank Pokarny, Diederich F. B. Winter, Floyd S. Neely, Charles Geigerman, Julius Charles Bernheim, John McKie, William A. Painter, Hugo Reichart, Charles Strodl, Frederick Biermann, Julius W. Müller, Gabriel Ettinger, Herman Kaufman, Alexander Donald, Henry L. C. Wenk, Julius Reinecke, Edward P. Shields, Andrew Wieland, Herbert Joseph Carr, Robert J. Dyatt, Peter C. Brady, George H. Huncke, Samuel S. M. Pettit, Charles Knapp, William Arthur Gage, George Philip Kohlman, Michael Stern, Charles H. Overbeck, Henry A. Sherman, Theodore H. Banks, Frank B. Poor, Julius Grunow, Charles Schalkenstein, William L. Saulpaugh, Horatio N. Flanagan, Samuel Linderman, Charles E. See, John W.

Wood, Henry H. Jackson, Frank Jones, Julius Rogaliner, George G. Isaacs, Joseph P. Hannigan, Eugene O'Brien, Reuben Muller, James Cavanagh Brady, Henry Powell, William O. Holly, Daniel Quinn, William A. Dabbie, Frederick H. Cumming, Robert E. Dowling, James Houghton Strong, Eugene Henry Hoerber, Robert Fitch Shedden, Joseph Jacob Myers, Charles Warren Holton, Herbert C. McKenzie, Charles W. Irving, Cornelius Carbonell, Adam F. Pentz, Martin Strauss, Benjamin Veit, David A. Pollor, Thomas William Timpson, George Urstadt, Charles Ellworth Atwater, Henry M. Walter, William C. Littlewood, Frank Loomis Eckerson, Arthur J. Lawrence, David Willard Lamberson, Samuel Whitney Dunscomb, Charles Alexander Clinton, William Russell Bennett, Garret Schenck Roome, William C. Guth, Alfred W. Pinneo, David D. Jacobus, Abbert Finkelstein, Emlin Frecklin.

It remains only to state the cost, to complete the record of the removal of the obelisk.

The actual net expenditure for material and labor for the whole operation aggregated eighty-six thousand six hundred and three dollars (\$86,603). Of this sum fifty-seven thousand eight hundred and seventy-one dollars (\$57,871) were expended on the obelisk, and twenty-eight thousand seven hundred and thirty-two dollars (\$28,732) on the pedestal, steps, and foundation. The incidental and contingent expenditures, in which are included interest, commissions for use of money, and *backsheesh*, amounted to fifteen thousand nine hundred and seventy-three dollars (\$15,973) additional. By *backsheesh* is meant the various amounts paid to different persons whose good-will was necessary to success, and whose ill-will would have involved delays and lawsuits that would have been ultimately more costly. The total cost was therefore one hundred and two thousand five hundred and seventy-six dollars (\$102,576). Mr. Vanderbilt had agreed to pay seventy-five thousand dollars (\$75,000) when the obelisk had been re-erected in Central Park,¹ and subsequently agreed to pay the cost of removing the pedestal, foundation, and steps. After the obelisk had reached New York he advanced forty-five thousand dollars (\$45,000) to defray current expenses of completing the work. In February, 1881, after the obelisk had been erected, he paid the balance, making a total of one hundred and three thousand seven hundred and thirty-two dollars (\$103,732) paid by him. The difference, eleven hundred and fifty-six dollars (\$1,156), was the net profits derived from the fulfilment of my agreement.

As to the steamer "Dessoug": The money to purchase, refit, and operate her was advanced by two friends, under an agreement with me that I was to have absolute control of her until the obelisk had been disembarked. In consideration for this I agreed to pay them thirteen hundred pounds sterling (£1,300, \$6,327) "for freight and other charges for transporting, from Alexandria to New York, the obelisk, its pedestal, and foundation, and the materials used in removing them." I was also "to pay all expenses incurred in loading, stowing, and discharging the obelisk and pedestal." I further agreed to sell the steamer to the best possible advantage for their sole benefit and to guarantee them against loss. These terms were exceedingly liberal compared with the proposals for charter of other steamers that had been made me.

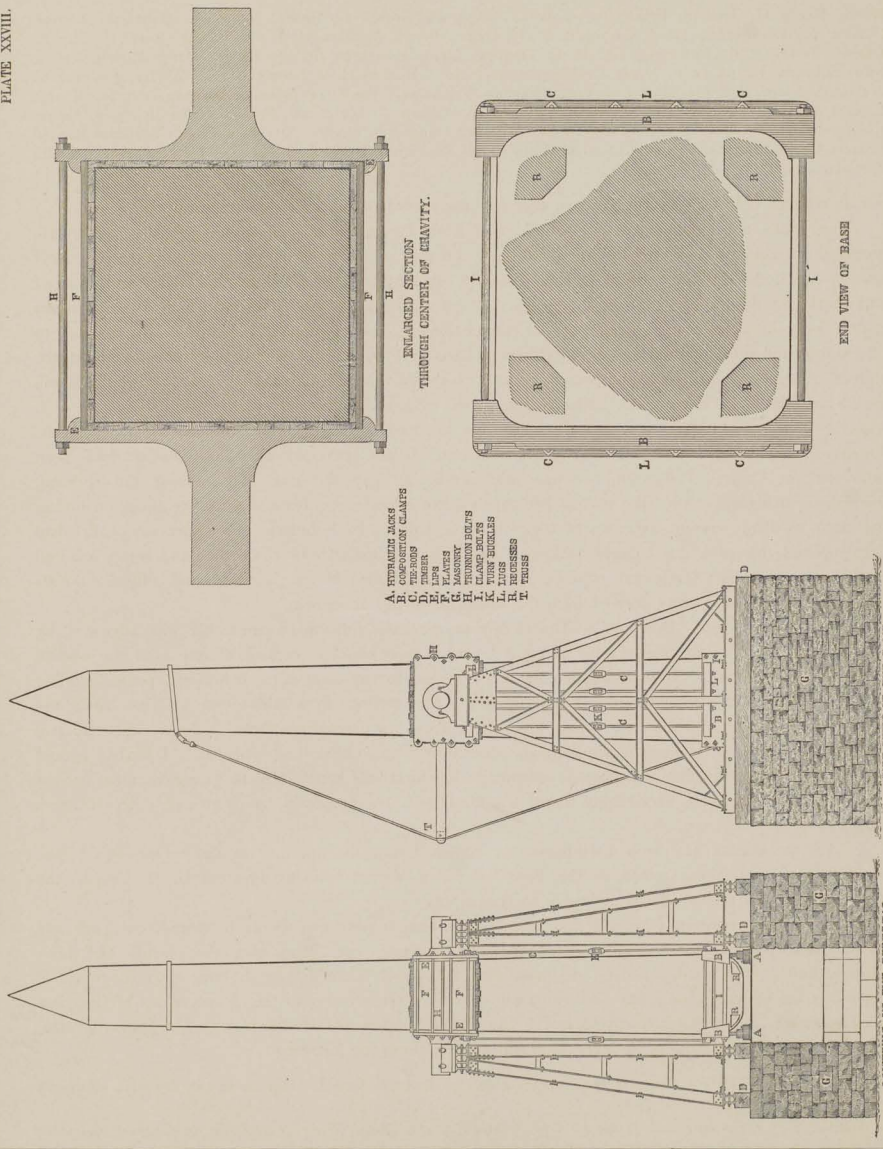
After the obelisk had been disembarked at Staten Island, the aperture in the "Dessoug's" bow was closed and she was towed to the Brooklyn Navy Yard, where Commodore G. H. Cooper, the Commandant, had kindly offered me space to lay her up.

A favorable opportunity to sell the steamer to a foreign company, to ply between New York and West India ports under foreign register and flag, occurred very soon after the obelisk had been disembarked. It seemed, however, desirable that the vessel, identified as she was with the work of removing the obelisk, should have an American register. To accomplish this a special act of Congress was necessary. Soon after Congress met I visited Washington and conferred with Mr. Darius Lyman, Chief of Navigation Division, Treasury Department, who drew the following:

JOINT RESOLUTION authorizing the inspection and issue of an American register to the Egyptian steamship "Dessoug."

Resolved by the Senate and House of Representatives of the United States of America in Congress assembled, That the Secretary of the Treasury be, and is hereby, authorized to issue an American register to the steamship

¹ See Correspondence, p. 5.



"Dessoug," of Egyptian nationality but of American ownership; and that the inspection of her machinery and hull shall be restricted by the inspectors of steam-vessels simply to the inquiry as to their safety for the conveyance of passengers, without reference to the mode or place of their construction; and that a special certificate of inspection may be issued for said steamship.

I took a copy of this to the Honorable William M. Evarts, Secretary of State, who gave me the following letter to Senator Matt W. Ransom, of North Carolina, and Representative John H. Reagan, of Texas, chairmen respectively of the Senate and House Committees of Congress.

DEPARTMENT OF STATE, WASHINGTON, *Jan. 5, 1881.*

SIR: I have the honor to bring to your attention, and, through your committee, that of the Senate, the eminent propriety of procuring the passage of an act granting an American register to the steamer "Dessoug," purchased by Lieutenant-Commander H. H. Gorringe, of the United States Navy, and employed by him in the successful transportation of the obelisk known as "Cleopatra's Needle" from Alexandria, Egypt, to New York.

The circumstances under which the obelisk was presented by the government of Egypt to the city of New York are so familiar that I need merely advert to the brilliant service rendered by Lieutenant-Commander Gorringe, involving the assumption of considerable personal risk on his part, and notably so in the purchase and alteration of a sea-going steamer for the transportation of the monolith.

The sentiment of national pride naturally felt in this successful achievement, coupled with the international character of Mr. Gorringe's service, makes it fitting that some appropriate action should be taken by Congress in the premises, and in no way could this be more appropriately done than by permanently identifying the vessel in question with the country and flag to which she has rendered so signal a service.

I am informed that the prominent merchants and ship-owners of New York are in favor of some such recognition of what Lieutenant-Commander Gorringe has done in behalf of their city, and that the course suggested would not be opposed by any conflicting shipbuilding interest.

The accompanying draft of a bill has been prepared as suitable to the desired end, subject to the consideration and approval of your committee, to which I earnestly commend it.

I have the honor to be, sir, your obedient servant,

W. M. EVARTS, *Secretary of State.*

The resolution was passed by the Senate on January 28, 1881; by the House on February 1, 1881, and approved by the President on February 8, 1881. Senator Francis Kiernan and Representatives Anson G. McCook, of New York, John G. Carlisle, of Kentucky, and W. C. Whitthorne, of Tennessee, together with the chairmen of the committees, were chiefly instrumental in pushing it through the crowded calendar of an expiring Congress and against a decided opposition to its passage that was unexpectedly developed. To strengthen their efforts four petitions for the passage of the resolution, signed by several hundred members of the Produce Exchange and other commercial bodies of New York, were presented at different times to Congress while the measure was pending. These petitions were prepared and circulated chiefly through the efforts of Mr. T. H. Parker, President of the Produce Exchange, Mr. W. H. Paton, and Mr. Marvelle W. Cooper, merchants of New York.

The "Dessoug" was sold to the Ocean Steamship Co. of Savannah, for a less sum than that offered for her by the foreign company. This fact is recorded in order to prove that the value of the vessel was not enhanced by granting her an American register, as was stated in some of the newspapers at the time and has never been denied.

The following was introduced in the House of Representatives by the Honorable Abram S. Hewitt, of New York, passed unanimously by that body, called up in the Senate by the Honorable T. F. Bayard, of Delaware, and passed unanimously there:

JOINT RESOLUTION tendering the thanks of the people of the United States, to His Highness, the Khedive of Egypt, for the gift of an ancient obelisk.

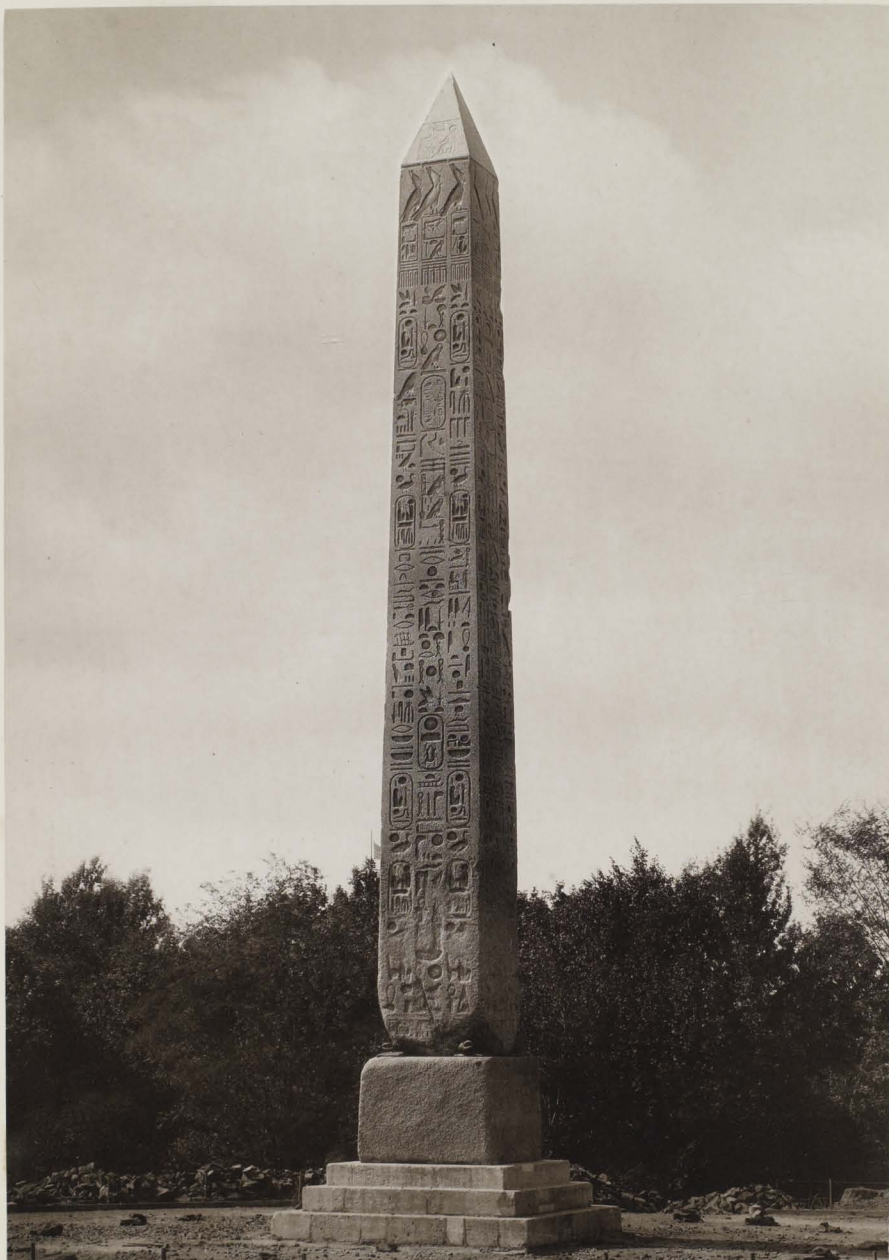
Whereas, the Khedive of Egypt presented to the United States the ancient Egyptian obelisk known as Cleopatra's Needle, which has been removed and re-erected in the city of New York, thus placing in the

Removal of the New York Obelisk.

possession of the people of the United States one of the most famous monuments of the Old World and one of the earliest records of civilization; Be it therefore,

Resolved by the Senate and House of Representatives of the United States of America in Congress assembled, that the thanks of the people of the United States are hereby tendered to His Highness, the Khedive of Egypt, for a gift which only the oldest of nations could make and the youngest can most highly prize.

APPROVED, *January 12*, 1881.



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BIERSTADT, N. Y.

THE NEW YORK OBELISK.

CHAPTER II.

THE ARCHÆOLOGY OF THE NEW YORK OBELISK

SYMBOLISM.

IN the ancient Egyptian mythology the Supreme Creator was worshipped through His attributes as they appeared to men's minds. The sun was regarded as more nearly representing Him than any other apprehensible object. The religion of the Egyptians was, therefore, essentially sun-worship. Almost endless was the variety of their deities—endless as the variety of the Creator's attributes. They worshipped these deities much as a great many people of the present time bow to and adore inanimate representations of their spiritual conceptions. The main difference is that the objects adored by the Egyptians as representing the attributes of the Divine Creator were invariably the creations of nature,—man, and other animals, birds, reptiles, and fishes, while the objects adored by many devotees of the present day are invariably the creations of man. On the subject of ancient Egyptian belief the reader is referred to the many works in which it is discussed more fully and instructively than the author is capable of discussing it. James Bonwick's "Egyptian Belief and Modern Thought" is an admirable résumé of the subject.

An obelisk appears to have been symbolic of the highest attributes of nature,—generation and reproduction, that is to say, re-creation. There is no evidence that it was an object of adoration in itself. Obelisks invariably bore the sculptured representations of the gods to whom they were dedicated and of the kings who erected them. Both were worshipped. The assumption that an obelisk was itself an object of adoration seems to be founded on the sculptures on scarabæe, representing human figures in the attitude of adoration before an obelisk. On one scarab there is engraved a sphinx and two men kneeling, one on either side of an obelisk, which bears the prenomen of Thothmes III. Parker states that the kneeling figure "on each side of the obelisk is the king,—Thothmes III, in a royal garment, worshipping the obelisk." If this were correct we would have the anomaly of the king worshipping himself. The relation of the kings to the gods is aptly compared by Bonwick to the attitude of the heads of certain Christian sects toward the founders of Christianity.

Infallibility and supreme power over the world and its inhabitants were claimed by the Pharaohs as they are by the Popes and Patriarchs. The claims of the latter in this regard were acknowledged for a few centuries, those of the former for many. The Egyptian kings assumed divine power and prerogatives, personated the Deity, were adored while living, and worshipped after death. Obelisks seem to have borne the same relation to the living kings as did the pyramids to those who had passed from life to a state of transition or inaction termed death. Some of the early sculptures in Egypt represent an obelisk surmounting a pyramid. Belief in the resurrection explains this association. Re-creation, as represented by the obelisk, springs from and rises out of the transitory condition called death, symbolized by the pyramid. As obelisks were originally erected only on the east bank of the

Nile and pyramids only on the west bank, the one has been regarded as allegorical of the rising, as the other is of the setting sun, aptly representing the living and the departed monarchs.

The sacred character of the obelisk is proven by its invariable association with the Egyptian temples. In this respect the obelisk and sphinx are alike. The temples were not complete without them, yet they formed no part of the temple; they were exterior accessories—a part of the system of Egyptian architecture as it embodies the profound thought of the Egyptian religion. This association of the obelisk and sphinx leads naturally to another conclusion as to their significance. The sphinx is believed to have been designed to represent the highest development of physical and intellectual force, the body of a lion, combining activity, grace, and strength, with the head of a man, the most intellectual of created beings. The obelisk is believed to represent the most essential and mysterious power of nature,—that of re-production.

In the museum of the Louvre, in Paris, there is a series of engraved scarabee that tend to confirm this view. The gradual development from the original to the existing form of an obelisk, through the earlier periods of Egyptian progress from barbarism to civilization, is clearly shown.

The obelisk seems to have been the special representative of the king and sovereign pontiff in Egyptian sacred architecture. On the shaft are engraved his titles, a record of his victories, and an assertion of his supreme power over the lives and property of his subjects. On the surmounting pyramidion are representatives of the gods conferring these titles and powers on the king, who is frequently represented as a sphinx. Every thing tends to associate the obelisk with king-worship as its material purpose, and with the power of generation and re-creation as its symbolic meaning.

The obelisk is not exclusively Egyptian. Essentially the same form is found in Assyria, Persia, and India, and even in America, although not well enough defined in the latter to be beyond question.

Bononi and others have identified the idol which Shadrach, Meshach, and Abednego declined to worship as an obelisk. "It was not only a representative of the divinity of the sovereign himself, but bore idolatrous emblems. To bow to it was an acknowledgment of the false gods and a recognition of Nebuchadnezzar as a god. * * * Captain Selby found near Babylon, on the 'Waste, of Dura,' the remains of a pyramidal column, which some identify as the image once covered with gold." The proportions are those of an obelisk.

Obelisks represent in Egyptian sacred architecture exactly the same idea as church towers with surmounting steeples represent in that of to-day. The tower corresponds to the shaft of the obelisk, the steeple to the pyramidion. The form and proportions are different because modified by the fancy of man through centuries; but it is a striking fact that if these relics of the distant past are traced through their modifications we return to the obelisk. The position with reference to the temple or church is identical; and while it is customary at the present time to place but one steeple on churches, the two towers are preserved, and stand, as did obelisks in Egyptian architecture, one on each side of the entrance to the sanctuary of the temple or church, of which they form an essential part.

The material of which obelisks were made, red syenite, may have had a symbolic reference to the color of the sun's rays as seen by the Egyptians through the hazy atmosphere that pervades the valley of the Nile. Red syenite was also the hardest substance available for making them; and this was chosen from the quarries of Syene, where there is a stratum unequalled for its uniformity and freedom from cracks and veins of foreign matter, thereby enabling the architect to set no limit to the dimensions save that necessary for safety of removal and transport.

FORM.

An obelisk is a monolithic quadrilateral shaft terminating in a pyramidion. The proportions are not fixed; they vary even in those erected in one reign. The size and proportions were probably

¹ Bonwick, p. 300.

determined solely by the mass that had been removed from the quarry. The sides of many are not even of uniform dimensions. The obelisks of Luxor have a slight curvature of two of the faces, in which they differ from all others.¹ The earlier obelisks are generally more slender than the later. The proportions vary from eleven times to eight times the width at base for total height. The New York obelisk which belongs to the first period of Egyptian renaissance is nine times its width at base in total height. It is impossible to find any two original authorities who give the same dimensions for any one Egyptian obelisk. The table in Chapter V is the result of a careful compilation of the data available for determining the dimensions of the obelisks recorded in this volume.

It is worthy of note that the shaft of the New York obelisk would come to a point if it was twice as long as it is; that the height of the pyramidion is equal to the width of the shaft at the bottom; and that the width of the top of the shaft is two thirds that of the bottom. How far these features may extend to obelisks generally cannot be determined until accurate dimensions are known.

The sides of the shaft are inscribed with vertical rows of hieroglyphical characters. The faces of the pyramidion contain figures and inscriptions. All are in *intaglio relievo*. Every part of the surface was originally polished. Some of the obelisks in Egypt, notably those of Usortesen and Hatasou, retain a high polish still. If the translations are correct the inscriptions have little historical value. Those on the pyramidions are unquestionably dedicatory; the translations of those on the shaft are little more than "a monotonous list of official epithets and magniloquent titles." One noticeable feature of Egyptian obelisks is their durability, amounting almost to indestructibility. They have experienced vicissitudes at the hands of man, and have passed through convulsions of nature that would have destroyed almost any thing else. Doubtless many have been destroyed; the wonder is that one remains. Every conquest of Egypt of which we have any record, from that of Asshurbanipal B. C. 662 to that of Napoleon in this century, has been followed by the removal of one or more obelisks from their original positions to others designated by the conqueror in and out of Egypt. There can be no better proof of the interest they excite and the curiosity they arouse. Their symmetrical form attracts the eye as their associations fascinate the mind. Their presence leads inevitably to historical research. What is the obelisk? Whence came it? What manner of people created it? How was it cut? What machinery moved it? What is the meaning of the characters engraved on it? These are among the questions that arise in the minds of Americans as they stand before the New York obelisk. The result of its removal to this country will be chiefly educational. The erection in this city of a monument, so simple in form, and yet so grandly impressive in its outline and proportions, may be to arrest the tendency of our architecture to extravagance of detail. That grace and elegance may be achieved by simplicity is one of the artistic lessons unlearned in America, but forcibly taught by the obelisk.

Of the three characteristic forms of Egyptian monuments—the obelisk, the sphinx, and the pyramid—the first is the only one that has been universally adopted. It is a curious evidence of the force of habit, and the imperishable influence exerted over the world by early Egyptian civilization, doctrines, and beliefs, that the obelisk is to-day the most common form of sepulchral monument. While the scarab symbolized resurrection itself the obelisk symbolized the power behind resurrection,—that of re-creation, and thus becomes the most appropriate of all forms to mark the graves of those who believe in a future state.

THE INSCRIPTIONS.

Plate xxx, the four faces of the pyramidion, is a reproduction of *squeezes* made directly from the obelisk. The figures and inscriptions were blackened on the squeezes, which were then photographed. We have therefore an absolutely accurate copy of the figures and hieroglyphical characters that remain after twenty-five centuries of exposure to atmospheric influences. The vacant

¹ See Chapter III.

spaces in the upper rows of hieroglyphs in the oblongs under the sphinxes, and between the oblongs and the seated figures in the two upper squares, indicate where the hieroglyphs have been obliterated.

The Rosetta stone¹ furnished a key to the meaning of certain characters and groups in hieroglyphical writings. This has been made the basis of all translations. While it must be admitted that there has been an approach to correct rendering in modern languages of many of the hieroglyphical writings and inscriptions, it is certain that the grouping of characters and their values in different relative positions are not as yet sufficiently understood to warrant accepting the translations as accurate. It is also certain that the Egyptian mind had reached a stage of development in all branches of human knowledge far beyond that indicated by the translations of the inscriptions on the monuments. To accept as accurate the translation of the inscriptions on the New York obelisk given further on, would be equivalent to assuming that Thothmes III and Ramses II were a pair of vain-glorious fools. Is such an assumption consistent with the marks on the world's history that were left by these men? The achievements of Thothmes III in war and the results of his consolidation of the Nile States into one empire are unequalled in modern history. Ramses II was for many centuries before Christ what Caesar is to the Christian era. Men combining the superior qualities of these monarchs could not have left such incomprehensible nonsense for posterity to judge them by, as that assumed by Chabas and Brugsch to be the meaning of the hieroglyphs on the New York obelisk.

The meaning of the sculptures on the pyramidion of the New York obelisk affords a good example of the imperfect knowledge of the subject even of the most eminent Egyptologists. According to Birch² the vignettes or squares represent Thothmes III as a sphinx adoring Ra and Tum, two deities of Egyptian mythology. According to Chabas³ "the pyramidion represents a square vignette in which is figured the king seated on a throne before the sphinx of Hor-em-akhou Harmachis, upon a pedestal," to whom the obelisk was dedicated.⁴ According to Brugsch the sculptures on the pyramidion represent the god Ra, and the king, Thothmes III, seated on a throne, before them the sphinx, emblem of the physical and intellectual force.

The squeezes of the pyramidion were made by Mr. H. de Morgan, who has kindly furnished me for publication the following explanation and translation that he has reached after prolonged study and careful comparison of the sculptures with the figures of identified deities in Egyptian mythology.

In the left hand upper square of Plate xxx the god Atum,⁵ seated, presents to the king, Thothmes III, the sceptre and *crux ansata*. The former is the emblem of authority, the latter is the emblem of life. Thothmes III is represented as a sphinx. He extends one hand to receive the emblems and with the other presents an offering.

What remains of the hieroglyphs in this square has been literally translated by Mr. de Morgan as follows: * * * giver, Ra-men-Kheper, gracious God, lord of the world, giver of life, beloved by Tum, master of the world. The word Ra-men-Kheper is enclosed in an oval with a line tangent to the lower end, that is known as a cartouch. It is the prenomen of the king, Thothmes III.

On the upper right square the god is Ra.⁶ Enclosed by the oblong under the sphinx are the

¹ Discovered in 1799 by Captain Bouchard, an engineer officer of the French army.

² Parker, p. 43.

³ Records of the Past, vol. x, p. 22.

⁴ The great sphinx at Gizeh was dedicated to Harmachis.

⁵ Atum was especially the god of Heliopolis. The great temple there was called "the house of Atum," as a church is called "the house of God." He is described as "the source of life," and in the Egyptian ritual there is the following: "I am Atum making the heavens, creating beings, self-created, lord of life." Wilkinson (p. 178, vol. iii) states that he was "one of the principal deities of the second order of gods." Bonwick (p. 94) assumes that he was the "*rising sun*," while Rawlinson (vol. i, p. 347) asserts that Atum represented "the sun as he approaches or rests upon the western horizon just before and when he sets."

⁶ Ra, like Atum, was one of the sun-gods of Egyptian mythology. Ra appears to have chiefly represented the mid-day sun. To describe Ra in all his phases would be equivalent to writing a treatise on Egyptian gods. It is recorded of Ra that he was "born of Neith, but not engendered"; also, that he came from the side of his mother. There is a striking similarity between the Ra of Egyptian mythology and the Son of Christianity. Ra seems to have formed the connecting link between the spiritual and material world. He was almost universally worshipped throughout Egypt. He is commonly represented as having a hawk's head, and above this is a sphere, or disk, to designate the sun. It is inexplicable that the



titles and prenomen of the king, that have been translated thus: Son of the sun, Ra-men-Kheper, Strong Bull, Horus. One character is wanting.* The horizontal and vertical lines under these titles represent the royal standard. The hieroglyphs between the sceptre and oblong of this square are partly obliterated; those that remain mean nothing in themselves. The horizontal row on top is also incomplete; what remains indicates that they have essentially the same meaning as the hieroglyphs similarly situated in the left upper square.

In the lower left-hand square the inscription on top is nearly complete. It has been translated thus: Giver of life, Ra-men-Kheper, gracious god, master of the world, giver of life, Horus-Ra, lord of the world, god, lord of heaven. The group of hieroglyphs between the sceptre and oblong signifies that the king makes presents to Ra.

In the lower right-hand square there is apparently nothing wanting. The inscription on top reads: Ra-men-Kheper, king of lower and upper Egypt, master of the world, gracious god of Heliopolis, king, giver of life, stability, and power, beloved of Atum, lord of Heliopolis, gracious god, lord of the temple. The inscription between the oblong and seated figure reads: He made presents of libations to Noun, who has made him giver of life.

It is probable that the sculptures and hieroglyphs on the four faces of the pyramidion are simply dedicatory to the two gods, Ra and Atum; to Ra as god of heaven, and Atum as god of Heliopolis. It would not be straining a point to render the inscription on top of the lower left square thus: Ra-men-Kheper, king by divine right, master of the world, with power over life (dedicates this) to Horus-Ra, god of the universe (or of earth and heaven). The characters under the sphinx are probably simply the king's name and titles. Those between the god and king explain their attitudes. In the lower right square the inscription would be in perfect keeping with those of modern times if it were translated thus: Ra-men-Kheper, king of united Egypt, master of the world, high-priest of Heliopolis, with power over life and property, dedicates this to beloved Tum, god of Heliopolis and gracious lord of the world.

Plate xxxi, the four sides of the obelisk, will enable the student of hieroglyphs to seek a more satisfactory translation than the author can furnish. The translation of Chabas is as follows:

LEFT.	NORTH SIDE.	RIGHT.
<p>The kingly HORUS, Strong Bull, Beloved of the goddess, Ma, the King of Upper and Lower Egypt, RA-OUSOR-MA-SOTEP-EN-RA,¹ Lord of panegyrics like his father,² PTAH TOTANEN, Son of the Sun, RAMESSOU MERIAMEN. Ra has generated him to adorn festively Heliopolis to furnish abundantly the temples of him who generated him. The lord of the two lands RA-OUSOR-MA-SOTEP-EN-RA,¹ Son of the Sun, RAMESSOU MERIAMEN, (invested with life) stability and happiness.</p>	<p>The kingly Horus lifting up the <i>Hat</i>; (White Crown,) the King of Upper and Lower Egypt, Golden Hawk, who has struck the kings of all lands approaching him; after the commandment of his father, RA. Victory over the entire world, and valiance of sword are at the mouth of his hands for the extension of the limits of Egypt, the Son of the Sun, THOTHMES, Vivifier.</p>	<p>The kingly HORUS, Strong Bull, Son of TUM, the King of Upper and Lower Egypt, the Lord of Diadems, who protects Egypt and chastises the nations. Son of the Sun, RAMESSOU MERIAMEN, king, warlike, who has acted with his own hands, in the face of the whole earth, the Lord of the two lands, RA-OUSOR-MA-SOTEP-EN-RA,¹ Son of the Sun, RAMESSOU MERIAMEN, the stable.³</p>

head of Ra on two of the four faces of the pyramidion should have been so nearly obliterated, while the head of Atum has been so well preserved. It is barely possible that the head of Ra may have been gilded, while that of Atum was only polished like the rest of the surfaces, and that this gilding may have been the cause of the obliteration.

¹ Prenomen of Ramses II.

² Lord of Festivals.

³ Inscription incomplete.

EAST SIDE.

LEFT.

The kingly HORUS,
The Strong Bull, Son of Kheper-
Ra,¹
the King of Upper and Lower
Egypt,
RA-OUSOR-MA-SOTEP-EN-RA,
Golden Hawk,
of abundant years,
(very) victorious,
Son of the Sun,
RAMESSOU MERIAMEN,
who issued from the womb,
to take the crowns of the sun;
whom the sun generated to be
(the)
sole Lord, Lord of the two lands,
RA-OUSOR-MA-SOTEP-EN-RA,
Son of the Sun,
RAMESSOU MERIAMEN,
the splendor of OSIRIS,
like the sun.

CENTRE.

The kingly HORUS,
Strong Bull, crowned in Thebes,
the Lord of Diadems,
whose royalty is expanded,
like (that of) the Sun.
(Beloved of TUM, Lord of
Heliopolis,
Son of his loins,
THOTH created him, THOTHMES.)²
They created him in the great
abode,
from the perfection of their limbs,
so that he will make an extended
royalty for centuries.
The King of Upper and Lower
Egypt,
RA-MEN-KHEPER,
Beloved of TUM, the great god,
and the gods of his circle,
giving all life, stability, and
happiness
like the sun for ever.

RIGHT.

The kingly HORUS,
Strong Bull, Beloved of MA,
the King of Upper and Lower
Egypt,
RA-OUSOR-MA-SOTEP-EN-RA,
(who is) a sun, generator of gods,
Possessor of the two lands,
Son of the Sun,
RAMESSOU MERIAMEN,
a noble youth of kindness
like ATEN³
blazing from the horizon.
Lord of the two lands,
RA-OUSOR-MA-SOTEP-EN-RA,
Son of the Sun,
RAMESSOU MERIAMEN,
the splendor of OSIRIS,
Vivifier.

SOUTH SIDE.

LEFT.

The kingly HORUS,
Strong Bull, Son of the Sun,
the King of Upper and Lower
Egypt,
RA-OUSOR-MA-SOTEP-EN-RA,
Golden Hawk,
.
Son of the Sun,
RAMESSOU MERIAMEN⁴
.

CENTRE.

The kingly HORUS,
Strong Bull, crowned in Thebes,
the King of Upper and Lower
Egypt,
RA-MEN-KHEPER.⁴ . . .

RIGHT.

The kingly HORUS,
Strong Bull, Beloved of MA,
the King of Upper and Lower
Egypt,
RA-OUSOR-MA-SOTEP-EN-RA,
(who is) a sun, generator of gods,
.
Lord of the two lands
RAMESSOU MERIAMEN.⁴ .
.

WEST SIDE.

LEFT.

The kingly HORUS,
Strong Bull, Beloved . . .
the King of Upper and Lower
Egypt,
RA-OUSOR-MA-SOTEP-EN-RA.
Lord of panegyrics
like his father Ptah, Lord of . . .
RAMESSOU MERIAMEN.⁵

CENTRE.

The kingly HORUS,
Strong Bull, crowned in Thebes,
the King of Upper and Lower
Egypt,
RA-MEN-KHEPER.⁵

RIGHT.⁶¹ The Creator.² "This cartouch is very curious and interesting, as the phrase is calculated to form the name of Thothmes with the last word of each column."³ The solar disk.⁴ Remainder illegible or not translated.⁵ Remainder illegible or not translated.⁶ Illegible.



ARTOTYPE

GERBAUD, N. Y.

THE FOUR SIDES OF THE OBELISK

The following is the translation of Brugsch Bey, first published in the *New York Herald* of February 22, 1880. Dr. Brugsch thus describes the sculptures on the pyramidion: On the north face, corresponding to the lower left square of Plate xxx, "King Thuthmes' III is represented as a sphinx, with the head and arms of a man. He is offering two vases of wine to the Sun-God On. His body rests on a sort of pylon, decorated with the titles:—

"The Strong Bull,
Who manifests himself
King
In the Thebaid,
The Son of the Sun:
Thutmes.

"Over the body may be read:—

"The Gracious God,
Lord of the Two Worlds,
King of Upper and Lower Egypt,
Ra-men-kheper."

On the west face, which corresponds with the lower right square of Plate xxx, Dr. Brugsch says:—"The representation and the text inscribed upon the pylon are the same as those on Face A," which is the preceding. He states further that "The inscriptions engraved over the sphinx and the figure of the god are not sufficiently distinct to here read them." In which he is manifestly in error.*

The sculptures and inscriptions on the south face, corresponding to the upper left square of Plate xxx, he regards as illegible.

On the east face, corresponding with the upper right square, he states that "The representation and the text inscribed upon the pylon are the same as those on Face A. The Sun-God is this time called '*Hormakhu*'—that is, the Harmaïs or Harmachis of the Greeks.

"The King's titles are:—

"The Gracious God,
The Lord of the Two Worlds:
Ra-men-kheper.

"The offering to the god is indicated by the inscription:—

"Gift of Wine."

NORTH SIDE OF SHAFT.

TEXT OF THE LEFT-HAND LINE.

Horus: the Strong Bull.
Friend of Justice.
King of Upper and Lower Egypt.
Lord of the Periods of Thirty years.
Like his Father Ptah-Tanen [*the God of Memphis*].
The Son of the Sun: Ramessu Meri-amun' [*that is to say, the Friend of the God Amon of Thebes*].
The Sun created him.
To Cause Great Rejoicing in the City of On, and to fill with Riches the Sanctuaries of his Creator.

TEXT OF THE CENTRE LINE.

[*Name of the Royal Standard.*]
Horus: Magnified and Enlightened by the Crown of Upper Egypt.
[*The Official Standard.*]
The King of Upper and Lower Egypt:
Ra-men-kheper.
[*The Title of the Victorious.*]
The Golden Horus.
The Strong of Arm,
Who beat the Kings of Foreign Nations

TEXT OF THE RIGHT-HAND LINE.

Horus: the Strong Bull.
The Son of Tum.
The King of Upper and Lower Egypt.
Ra-user-ma.
The Chosen one of the Sun.
Lord of the Diadems of the Vulture and of the Serpent.
Protector of Egypt.
Chastiser of Foreign Nations.
The Son of the Sun, Ramessu Meri-amun.
The Conqueror,
Who with his Own Arms Performed Great Deeds

* Thothmes.

* See Plate xxx.

* In the Greek lists of Manethos containing the names of the Pharaohs this name *Meri-amun* is written *Miamun*.

NORTH SIDE OF SHAFT.—(Continued.)

TEXT OF THE LEFT-HAND LINE.

The Lord of the Two Worlds:
Ra-user-ma.
The Chosen One of the Sun.
The Son of the Sun: Ramessu
Meri-amun,
Who gives Life of all Stability and
Purity
To-day as ever after.

TEXT OF THE CENTRE LINE.

Who were numbered by hundreds
of thousands,
For his Father, the Sun-God Ra,
ordained for him
Victories over all Lands.
Mighty Power
Was concentrated at the points of
his hands
To widen the Boundaries of Egypt.

[The Family Name.]

The Son of the Sun
Thutmes
Who gives Life of all Stability and
Purity
To-day as ever after.

TEXT OF THE RIGHT-HAND LINE.

In the face of
The Entire World Assembled.
The Lord of the Two Worlds:
Ra-user-ma,
The Chosen one of the Sun.
The Son of the Sun: Ramessu
Meri-amun,
Who gives Life of all Stability
and Purity
To-day as ever after.

EAST SIDE.

TEXT OF THE LEFT-HAND LINE.

Horus: the Strong Bull,
Son of the Sun-God Kheper [*that
is, of him who exists*].
The King of Upper and Lower
Egypt,
Ra-user-ma,
The Chosen One of the Sun.
The Golden Horus:
Rich in Years; Grand in Victories.
The Son of the Sun: Ramessu Meri-
amun.
He came out from the Belly,
To receive the Crowns from the
Sun-God Ra,
Who created him to be the Sole
Monarch.
The Lord of the Two Worlds: Ra-
user-ma,
The Chosen One of the Sun.
The Son of the Sun: Ramessu Meri-
amun.
The Reflected Splendor of
The God Tum
Like the Sun.

TEXT OF THE CENTRE LINE.

[Name of the Royal Standard.]

Horus: the Strong Bull,
Who manifested himself as King in
Thebaid.

[The Crown Title.]

The Lord of the Diadems of the
Vulture and of the Serpent.
His Kingdom is as lasting as is
the
Sun in the Heavens.

[*The Family Name, enclosed in an
elliptical circle and containing a
curious allusion to the meaning of
the name Thutmes.*]

The Creature of the God Tum,
Lord of the City of On,
The Son who came out from his
Belly, and whom
The God THUT formed. [MES.]
They created him in the Grand
Hall [*of the Temple of On*]
After the model of their own body,
Being conscious of the Great Deeds
he was to accomplish:
He, whose Kingdom should be of
long duration.

[The Official Title.]

The King of Upper and Lower
Egypt,
Ra-men-Kheper,
Friend of the Great God Tum, and of
The Circle of his Divinities.
He who gives
Life of all Stability and Purity
To-day as ever after.

TEXT OF THE RIGHT-HAND LINE.

Horus: the Strong Bull,
Friend of the Sun-God Ra,
The King of Upper and Lower
Egypt.
Ra-user-ma,
The Chosen One of the Sun.
He has taken possession of the Two
Worlds.
The Son of the Sun: Ramessu Meri-
amun,
A handsome and Kind-Hearted
Youth;
He is as resplendent as is
The Solar Orb in the Horizon.
The Lord of the Two Worlds;
Ra-user-ma,
The Chosen One of the Sun.
The Son of the Sun: Ramessu
Meri-amun.
The Reflected Splendor of
The God Tum
Who gives Life.

SOUTH SIDE.

TEXT OF THE LEFT-HAND LINE.

[So effaced as to be illegible.]

TEXT OF THE CENTRE LINE.

[Name of the Royal Standard.]

Horus: the Strong Bull,
Friend of the Sun-God Ra.

[The Official Title.]

The King of Upper and Lower
Egypt,

Ra-men-kheper
.
.

TEXT OF THE RIGHT-HAND LINE.

Horus: the Strong Bull,
The Companion and Friend of Justice.

The King of Upper and Lower
Egypt:

Ra-user-ma:
Lord of the Periods of Thirty years,
Like his Father, the God Ptah:
Lord of the White Wall [name of
the Citadel of Memphis].

The Son of the Sun: Ramessu
Meri-amun.

The God: the Divine Being.
The Terrestrial Star of the City of
the Sun-God Ra,

Which is sustained by the deeds of
The Lord of the Two Worlds: Ra-
user-ma.

The Son of the Sun: Ramessu
Meri-amun,
Who gives Life.

WEST SIDE.

TEXT OF THE LEFT-HAND LINE.

Horus: the Strong Bull,
Friend of Justice.
The King of Upper and Lower
Egypt;
The Son of the Sun;
The Creature of the Gods,
Who [has taken possession of] the
Two Worlds.
The Son of the Sun: Ra-user-ma
Meri-amun;
The Friend of the City of the Sun;
Never before was done what he did
for the City of On.
His Memory is forever fixed in the
City of Tum [Pitum].
The Lord of the Two Worlds: Ra-
user-ma.
The Chosen One of the Sun.
The Son of the Sun [Ramessu Meri-
amun]
Who gives Life.

TEXT OF THE CENTRE LINE.

[Name of the Royal Standard.]

Horus: the Strong Bull,
Who manifested himself as King in
the Thebaid.

[Official Title.]

The King of Upper and Lower
Egypt:

Ra-men-kheper,
Who caused
Great Rejoicing
In the House of the Sun-God Ra—
[That is Helopolis.]

Who created
The Beauty of the Sun Disk;
The Day when for the first time
was made
.
.

TEXT OF THE RIGHT-HAND LINE.

Horus: the Strong Bull,
The Son of the Sun-God Ra.

The King of Upper and Lower
Egypt
Ra-user-ma

The Chosen one of the Sun.

The Golden Horus:
Rich in Years; Grand in Victories.
The Son of the Sun: Ramessu
Meri-amun.

.
.
.
The Lord of the Two Worlds
Ra-user-ma

The Chosen One of the Sun,
The Son of the Sun [Ramessu Meri-
amun]

. Like the Sun.

"At the foot of the four faces of the obelisk there is a horizontal line of text which reads: 'May he live! The gracious god: Ra-user-ma—The chosen one of the sun—The gracious god—Ramessu Meri-amun.'"

In explanation of the above it is well to "remark that all Egyptian kings had five distinct appellations, which were always preceded by five titles." These titles are:

1. The *Name of the Royal Standard*, preceded and indicated by the words, "Horus," or "Horus, the Sun."
2. The *Official Title*, preceded by the words, "The King of Upper and Lower Egypt," or "Lord of the Two Worlds."
3. The *Crown Title*, preceded by the words, "The Lord of the Diadems of the Vulture and of the Serpent Ouraios."

4. The *Family Name*, indicated by the expression, "The Son of the Sun."
5. The *Title* of "*The Victorious*," preceded by the words, "The Golden Horus."

On the north, west, and east faces, near the bottom, is the cartouch of Usorken I, in much smaller characters than the other inscriptions.

Dr. Brugsch expresses the opinion that Ramses II was the father, by adoption, of Moses. He states that of the names of Thothmes III, Ramses II, and Usorken I, inscribed on the New York obelisk, "each marks a distinct historical period." Thothmes III, the period of expansion and conquest about sixteen centuries before Christ; Ramses II, the Sesostris of the Greek writers, who lived about three centuries later, the period of Egypt's greatest power and splendor; and Usorken I, who reigned about 933 B. C., the period of decline. Usorken was probably of Assyrian origin.

HISTORICAL.¹

The obelisk now standing in Central Park is of the fine syenite of the Assouan quarries. It was formerly the companion of the obelisk now standing on the Thames Embankment. The pair were originally erected by Thothmes III [xviii dynasty, sole reign, B. C. 1591-1565, Lepsius], before the famous Temple of the Sun at Heliopolis, the New York obelisk being then the eastern of the two. According to Birch,² they were the second pair erected by Thothmes III at this temple; the obelisk now at Constantinople, together with its former mate, being the first pair.

Pliny, who seems to give names to the Egyptian kings according to his own fancy, says that these obelisks were the work of Mesphres. "There are two other obelisks which were in Cæsar's Temple in Alexandria, near the harbor there, 42 cubits in height, and originally erected by order of King Mesphres." "Mesphres, who reigned in the City of the Sun, was the first who erected one of these obelisks, being warned to do so in a dream; indeed, there is an inscription to this effect; for the sculptures and figures which we still see thereon are no other than Egyptian figures." [Pliny, Nat. Hist., bk. xxxvi, ch. 14.] It is needless to say that no such dream-record as this appears on the New York obelisk. By Mesphres, Pliny means, according to Birch, King Mephres or Mesphra-Thuthmosis of Manetho's xviii dynasty; that is, Thothmes I. Parker, p. 21, would identify this name of Mesphres with that of Pepi Merira. Cooper, however, with more charity for Pliny's minute acquaintance with Egyptian chronology, concludes that he intended Thothmes III.

Near the modern village of Matariyeh, five miles from Cairo, is the site of the ancient city of Heliopolis; the only Egyptian city, according to Osburn (Mon. Hist. of Egypt), which is mentioned in the book of Genesis (Gen. xli, 45).³ Nothing now remains of the city except the standing obelisk, and rude mounds, the ruins of crude brick walls, enclosing, says Mariette, a space 4,560 ft. by 3,560 ft., and marking the vast open space or square in front of the ancient temple. But, in the days of Egypt's glory, it was a place of the highest renown. It was preëminently the "City of the Sun," the "abode of Ra" (Helios); it was also called "the home of the Phoenix" (Bennu), and An, whence its Hebrew name On.⁴ Here was the far-famed Temple of the Sun, where originated the profound learning of the Egyptians. Hither came, as to the most sacred place, pilgrims from all parts of the kingdom. The greatest Pharaohs added to their titles that of "Prince of Heliopolis."

Wilkinson calls Heliopolis the university of Egypt, where were taught the speculative and mystic forms of Egyptian theology, philosophy, astronomy,⁵ and all branches of practical science as then known. Here flourished a college of learned priests; a school of higher renown, according to Ebers, than even those of Saïs, Memphis, or Thebes. In this school Moses is said to have studied. Herodotus

¹ Kircher, *Œdipus*, vol. iii, p. 339. Norden, pl. viii, ix. Descr. de l'Égypte, Antiq., vol. v, pl. 32, 33. Lenormant, *Musée*, pl. xxix, xxx. Denon, pl. ix. Champollion, *Monuments*, t. iv, pl. cccxlv. Burton, *Exc. Hier.*, pl. li.

² Parker, p. 43.

³ See Gen. xvi, 7. Shur, which Gesenius thinks to be Suez.

⁴ On (Gen. xli, 45). In Jeremiah xliii, 13, it is called "Beth-shemesh," i. e., "the abode of the sun,"—a name which the Septuagint here employs as the name of the temple. (W. Smith, *Dict. of the Bible*.) The Egyptians called the city Annu, i. e., "pointed columns," or "obelisks." (Brugsch.)

⁵ Astronomy and all branches of science were studied here.—*Wilkinson*.

has written its praises. Hither came Pythagoras, Plato, and Eudoxus for Egyptian training. It is thought that from the records preserved in the temple, Manetho collected his history of the ancient Egyptian kings.¹ At the period of the Ptolemies, Alexandria became the centre of learning; in Strabo's time, although the houses once occupied by the priestly scholars were still standing, the once famous college of Heliopolis was in ruins.

The renowned Temple of the Sun at Heliopolis was consecrated to the special worship of Ra, the mid-day sun, the god of creating light and life; and thence, secondarily, to the honor of those deities whom the Egyptian mythology brought into the closest connections with him, viz.: Tum, the setting sun, the god of the promised resurrection; Harmachis, the rising sun, the child-sun, the awakening of life out of darkness; Thoth, the deity of the moon, the god of measures and of the sciences; Osiris and Isis, the children of space (Nut) and time (Seb).—Osiris, the principle of quickening life,—Isis (Isis Hathor), the earth, as receptive of this quickening; and, with these, their son, the avenging Horus, the representative of the final triumph of life and truth over death and falsehood, Typhon.

Thus, at the great temple of Ra, the religious belief of the Egyptians clustered its deities like planets around the central sun, and in its combination of their several rites of worship with reference to Ra as the supreme, gave peculiar fame and splendor to the shrine of Heliopolis. "Proud Pharaohs," says Ebers, "who at Memphis confined themselves to offering a sacrifice to the deity Ptah, here, at Heliopolis, submitted in the Temple of the Sun to many ceremonies, and were initiated into the mysteries of the god."

The sacred animals venerated at this temple were the white or light-colored bull Mnevis (sacred to Ra, as Apis was sacred to Ptah), and lions of light-colored, lustrous skin,—sacred to Ra. Here, too, was the fabled home of the Phoenix, which dies in fire to rise again, and brings its ashes to Heliopolis once in every five hundred years. The Egyptians called the Phoenix, Bennou; in many inscriptions the temple is called the "house of Bennou."

There is no record of the first building of this temple, so great is its antiquity.² With the single exception of the shrine of Ptah at Memphis, it was the most ancient temple of all Egypt. "The building was as old," says Ebers, "as the Egyptian adoration of the sun."³ It was so old that the most venerable myths had had time to gather around its ancient walls and take up their abode in its inmost sanctuary. In the wars of the gods, the Temple of the Sun had given asylum to the deities; Typhon and Horus, each wounded by the other, had been healed in the "great hall" of Heliopolis.

An ancient Egyptian manuscript now preserved in the Berlin Museum informs us that the temple was partly rebuilt by Amenhat I, of the xii dynasty, and finished by his son, Usortesen I.⁴ An interesting manuscript on parchment, procured by Brugsch at Thebes in 1858, and now at Berlin, records that Usortesen, in the third year of his reign, assembled the chief officers of his court to give their counsel as to erecting worthy buildings to the sun-god. The monarch's address dwells on the importance of monuments dedicated to the deities,—monuments which alone can make the memory of a ruler eternal; the counsellors unanimously applaud the intentions of their sovereign; then follows the account of the solemn laying the foundations of the proposed structures by the king himself.

The existence of the present obelisk of Heliopolis, says Brugsch, proves that the building, under Usortesen, had reached the great pylons, before which it was customary to erect these giant shafts.⁵

It was the daughter of a priest of this temple,—the "Priest of On," Potiphera, *i. e.*, dedicated

¹ Long, *Egypt. Antiq.*, i, 26. This history of Manetho is lost, except his lists of kings.

² Cooper (p. 22) says it was "founded" [built] by kings of the first six dynasties.

³ According to Manetho, the bull Mnevis was first worshipped here in the reign of Kaiechos, the second king of the ii dynasty. W. Smith, *Dict. of the Bible*, and Manetho in Wilkinson i, 18.

⁴ Brugsch, *Hist. of Egypt*, i, 130.

to Ra, that the Pharaoh, who according to Rawlinson, was of the xvii dynasty and the last of the Hyksos, gave Joseph to wife.¹

The great conqueror and builder, Thothmes III (xviii dynasty), restored or enlarged the ancient temple. An inscription referred to by Brugsch² shows that he surrounded it with a stone enclosure in the forty-seventh year of his reign. But, especially, he adorned it with new and splendid obelisks; of these three now exist, though far removed from their original site, viz.: the large obelisk at Constantinople, the obelisk of London, and the obelisk of New York.³

Around the shrine of the sun-god were erected many other obelisks.⁴ According to Ebers, the greater part of the obelisks removed by the Cæsars to Rome, Alexandria, and Constantinople, were from Heliopolis. Besides the monoliths of Constantinople, London, and New York, there are four others still existing which originally stood at Heliopolis, viz.: three in Rome, the obelisk of the Piazza del Popolo, that of the Vatican, and that of Monte Citorio; and one in Florence, that of the Boboli Gardens. The inscription on the London monolith mentions "the house of the Phoenix." The inscription on the shaft of the Piazza del Popolo speaks of the king (Seti I) as "filling Heliopolis with obelisks." In the inscription of King Piankhi (F. C. Cook's translation, *Records of the Past*, ii, 98) the temple is called "the temple of obelisks." Even so late as the time of Abd-el-Lateef there were so many remains of these monuments that he speaks of them as "innumerable."

Seti I (xix dynasty) was also a builder or restorer of the temple of Heliopolis, and erected, at least, a pair of obelisks, of which one, that of the Piazza del Popolo, still exists.

A very remarkable model of the Temple of the Sun, bearing the cartouch of Seti I (see Plate xxxii), discovered at a village near Cairo in 1875, is now in the possession of the author of this volume. It is believed to be the most ancient architectural model, or plan, known to exist, and has been pronounced by Professor Brugsch to be the most important historical discovery made in Egypt for many years.

The model is of granite; it is 44.25 inches long, 34.65 inches wide, and 9.25 inches deep. It shows the double flight of steps ascending to the level of the sanctuary: on either side these steps are, first, sockets in which were formerly set models of the great sphinxes guarding the entrance; higher up, on either side, are marked the positions of the statues of the king and of two great obelisks. At the top of the steps are again, on either side, sockets for two smaller sphinxes. Beyond these are marked the positions of the two great pylons; in front of these pylons were set tall masts or flag-staffs; on the inner sides of the pylons are seen holes marking the place of the double gate of the sanctuary, beyond which monarchs and priests alone could pass. Farther on are shown the positions of the great walls enclosing the sanctuary, within which were preserved the morning and the evening barges of the god.

On three sides or edges of the model are sculptures representing the monarch presenting offerings to the deity, and inscriptions in finely cut hieroglyphics. The signification of the separate hieroglyphs has been given by Brugsch, but the arrangement or collocation of words in the following translation is as given by Hon. W. J. Shaw, of San Francisco (see his article in the *Overland Monthly*, May, 1875): "This good model in stone, he (the king) has made of the temple illuminated by the two spheres. Horus, the Sun, his father, to this moment has made the gods gracious. The two tall slender towers are made of best stone. Of metal are the great doors. Of white stone are the two pylons, but grayish in their external appearance. Joyous were the spirits of heaven at Heliopolis!

¹ But Wilkinson (i. 30) says that Joseph arrived in Egypt during the reign of Usortesen I.

² Brugsch, *Hist. of Egypt*, i. 403.

³ Brugsch (i. 404) says that Thothmes III erected obelisks before the great wings of the temple. According to an inscription in the Temple of Assassuf, the height of a pair was 108 Egyptian ells, or 186 feet.

⁴ Pliny (*Nat. Hist.*, bk. xxxvi, ch. 14) states that the first obelisk was erected by Mesphres, at Heliopolis, and that Sesosthes erected four in the same city.



ARTOTYPE

HARBON & BIERSTADT, N. Y.

ANTIQUÉ MODEL OF THE TEMPLE OF ON (HELIOPOLIS).

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At Heliopolis the sphere of heaven is illuminated! The two obelisks are of polished porphyry (?). Gifts were presented: first, to Ra-Hor-Chuti'; secondly, to Tum, master of the two worlds of Heliopolis; thirdly to Khaparah in his barge, and to Horus, the Sun of the two illuminated spheres, the good god, the grand master of the heavens in the midst of his celestial palace. The King, part of the Sun, the Sun stable in justice, arrived and worshipped thee, O Tum! and presented incense to thee, and green cosmetic for the eyes, and oil coming from the eye of Horus. The King (cartouch of Seti I), part of the Sun, the Sun stable in justice, came and adored thee, O Tum, and thee, O Khaparah, and thee, O Horus, sun of the two illuminated regions, and filled you all with adorations." According to Shaw the following inscription also appears: "The gracious god (Seti, I) has made this monument to his father the Sun, to Tum, and to Khaparah. He has made to his father a splendid sanctuary, comparable to the sphere of heaven, to the place of repose, to the place of the two regions, and of the masters of Hun; and it is united in the interior like Tum to the heavens."²

In the time of Ramses III (xix dynasty) the possessions of the temple were immense. The celebrated Harris papyrus records the costly presents of this monarch to the shrine, and his restorations at Heliopolis: "I built its temples which were gone to decay; I sculptured their gods in their secret shapes, of gold, silver, and all precious stone, an eternal work. I made thee great statues of granite, figures of Tum."³ The number of priests, together with their subordinates and servants, attached to this temple is estimated, in a census made under this reign, at no less than 12,913.

A remarkable account of a royal visit to this shrine, and showing how far up the Nile its fame had ascended, is given in the "Inscription of Piankhi Mer-Amon," discovered in 1863 at Gebel Barkal, the site of the ancient Napata, in Ethiopia.⁴ Piankhi, who about 750 B. C.,⁵ obtained sovereign power at Napata, and established thence his suzerainty over all Egypt, descended the Nile, subduing in battle and in siege the native Egyptian princes who ventured to resist his supremacy, until, flushed with victory on victory, he approached the sacred spot of Heliopolis. Although the account of this monarch's visit to the Temple of the Sun has only preserved to us a description of the edifice in the most general terms, yet the account is enough to give us an idea of the great importance attached by the Egyptians to this famous shrine. Piankhi's visit is described as follows:⁶ "When he approached in order to enter the temple of the Sun-God Ra, the chief of the temple greeted him with respectful greeting, and the singing priests read the holy words to keep evil from the King. And the King completed the consecration, putting on the fillets, and purifying himself by incense and holy water. Then he received the wreaths of the Benben chamber⁷ and brought them forward, mounting the steps to the great window⁸ to behold Ra in his Benben chamber.⁹ The King stood there all alone; he drew back the bolts, opened the doors, and beheld his father Ra in the splendid Benben chamber, and the morning bark of Ra and the evening bark of Tum. After this he shut the doors, laid sealing-earth upon them, and pressed upon it his own royal seal, thus commanding the priests: 'I have set my

¹ Harmachis (?).

² It is to be hoped that some eminent Egyptologist may be able to furnish a more satisfactory translation from the plate.

³ Records of the Past, vol. vi, p. 53.

⁴ Translation in Brugsch's Hist. of Egypt, vol. i, p. 128; also in Records of the Past, vol. ii, p. 79; and Mariette, Notice des Principaux Monuments, etc., p. 295.

⁵ Rawlinson's Egypt, ii, 437. Brugsch [on Card] says 8th or 9th century B. C. (Cook, in Records of the Past, ii, 79, says xxii [22d] dynasty; not so, apparently, according to Bædeker's Egypt, p. 91.)

⁶ Brugsch, i, 128.

⁷ Cook, Records of the Past, ii, 98, translates this: Wreaths "from the Temple of Obelisks." Note by Brugsch: "The word Benben, in the old Egyptian, has the same meaning as the Greek word *pyramidon*. The Benben, accordingly, had the form of a small pyramid, and was venerated in the temple of On, with devotion like that paid to the Omphalos in the temple of Delphi."

⁸ "The great shrine." Cook.

⁹ "Temple of Obelisks." Cook.

seal; no other of any kings shall any more enter in.' While he stood there they prostrated themselves before his majesty, saying: 'O thou, always increasing in empire, may affliction never come to the divine Horus, the friend of the town of On.'"

More than seven centuries after this visit of King Piankhi, the Greek geographer Strabo¹ wrote a description of this temple as a type of all Egyptian temple buildings (Brugsch). "Heliopolis," he says, "has an ancient temple constructed after the Egyptian manner, bearing many proofs of the madness and sacrilegious acts of Cambyses, who did very great injury to the temples, partly by fire, partly by violence. In this manner he injured the obelisks, two of which that were not entirely spoiled were transported to Rome. The plan of the temples is as follows:—At the entrance into the temenos (sacred enclosure) is a paved floor, in breadth about a plethrum² or even less; its length is three or four times as great, and in some instances even more. This part is called the dromos, and is mentioned by Callimachus; 'This is the dromos, sacred to Anubis.' Throughout the whole length are placed on each side stone sphinxes, at the distance of twenty cubits or a little more from each other, so that there is one row of sphinxes on the right hand, and another on the left. Next after the sphinxes is a large propylon, then on proceeding farther another propylon, and then another. Neither the number of the propyla nor of the sphinxes is determined by any rule. They are different in different temples, as well as the length and breadth of the dromos. Next to the propyla is the naos, which has a large and considerable pronaos; the sanctuary in proportion; there is no statue, at least not in human shape, but a representation of some of the brute animals. On each side of the pronaos project what are called the wings. These are two walls of equal height with the naos. At first the distance between them is a little more than the breadth of the foundation of the naos. As you proceed onward, the [base] lines incline toward one another till they approach within fifty or sixty cubits. These walls have large sculptured figures, very much like the Tyrrhenian (Etruscan) and very ancient works among the Greeks."³

The precise history of the decline of Heliopolis is not known. Mariette raises, without answering, the question: When did this decline begin? The fury of Cambyses [B.C. 525-521] did not entirely destroy it; for although Strabo, who visited Egypt B.C. 24, found it a deserted city, yet the temple could be seen and described in all its parts. So late as the time of Abd-el-Lateef, who wrote in A.D. 1201 (De Sacy), the Arabian physician could still speak of it as a small city, with ruined but still standing walls, which it was easy to see were the walls of a temple; for there were those "large and terrible idols of hewn stone, each of which is thirty cubits high, with limbs in proportion." The gate of the city—perhaps the pylon of the temple described by Strabo—was still preserved. The figures and fragments seen by Abd-el-Lateef were covered with reliefs and hieroglyphics. "There is hardly a stone," he says, "without writing, or sculpture, or figures." What has become, asks Ebers, of these enormous quantities of stone which were seen so lately by Abd-el-Lateef? and his answer is that they have been carried away to be used in the building up of Cairo, so near at hand.

Resuming the history of the New York obelisk, there is no record that it had been thrown down by Cambyses when he destroyed the temple of Heliopolis, but it is very probable that it shared the fate of many others and lay prostrate among the ruins for five centuries, from the conquest of the Persians in the sixth century before Christ to that of the Romans in the first century B.C.

The inscription on one of the bronze crabs that supported the New York obelisk while it was in Alexandria (see Plate v) is the only record that exists of its removal. This simply states that it was erected at Alexandria in the eighth year of Augustus Cæsar, corresponding to 22 B.C., by Pontius the architect, while Barbarus was Prefect. From other records we learn that the pair, hereafter to be known as the London and New York obelisks, were placed in front of the Cæsareum or Temple of the Cæsars.

¹ Visited Egypt B.C. 24.

² About 100 feet.

³ Strabo, bk. xvii, ch. 1.

ΚΛΕΟΠΑΤΡΑΣ



L. MOUNIER.
fecit 1831.

ΒΑΣΙΛΙΣΣΗΣ



ANYOTYPE

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E. BERSTADT, N. Y.

This temple was one of the most imposing structures of ancient Alexandria, and the monument of imperial Roman pride and power in the newly subdued province of Egypt. A sacred grove surrounded it, a library was attached to it, it was adorned with colonnades and enriched with paintings and statues. Here divine honors were paid to the emperors, even in their own lifetime. The building may have been begun by Cleopatra, after the birth of Cæsar; it is certain, however, that it was completed by the Alexandrians in honor of Tiberius. In A. D. 336, during an insurrection of the pagans, it was burned down; at a later period it was rebuilt. The date of its final destruction is unknown.

In modern times the New York and London obelisks have been known as Cleopatra's needles. Tradition has associated them with that famous queen of Egypt, whose charms are said to have conquered the austere Pompey, the immortal Cæsar, and the brilliant and dissolute Anthony, but failed to captivate the crafty Octavius. Since the discovery by Mr. Dixon of the inscription on one of the bronze crabs that supported the New York obelisk in Alexandria, archæologists have assumed that she had nothing to do with removing them, as she had been dead about eight years when they were re-erected. Traditions cannot be disposed of by assumptions; there is every reason to believe that Cleopatra ordered the removal of the obelisks. Revolutions and invasions during the latter part of her reign probably delayed their re-erection. After her death there was no one but the conquerors of her kingdom to perpetuate her name. Considering the times and circumstances, it was natural that the Roman Prefect should have been silent as to their removal. But it is probable that the other crabs bore inscriptions which recorded all the facts. Until some proof is offered that the tradition is without foundation, it would seem reasonable to accept it and pay our tribute to a beautiful and captivating woman by associating her name with two of the world's most interesting monuments.

The accompanying plate is a portrait photographed directly from her coins, and finished as any other portrait would be by an artist, who has endeavored to be faithful to the original. The four coins reproduced below the portrait were found under the obelisk in Alexandria very much defaced and corroded. These coins, struck from different dies, manifestly give us a true representation of Cleopatra's profile.

It has been said that these two obelisks were used at Alexandria as gnomons, and reference is made to a concave dial found at the base of one of these shafts, and now preserved in the British Museum. Sharpe¹ mentions a marble dial, now in the British Museum, which was found, as he says, in front of the temple of Alexandria; it was, however, constructed for a horizontal gnomon.

Although the present London obelisk had fallen from its pedestal,² yet our obelisk remained standing where the Roman engineers had placed it, before the Temple of Cæsar, until the time of its removal to New York,—almost exactly nineteen centuries. Of later years it had inclined a little from the vertical. For hundreds of years it was a landmark, known as "the standing obelisk," or, *par excellence*, as "Cleopatra's Needle" (it is so called by Paul Lucas, Norden, Baron de Tott, the Description de l'Égypte, Lepsius, Schnaase, Sharpe, Long, etc.), although our English neighbors have recently appropriated this title to the monolith now on the Thames Embankment.

For the earliest notices by different chroniclers of the two obelisks at Alexandria, the reader is referred to the account elsewhere given of the London obelisk. The Arabian geographer Edrisi, whose book was completed A.D. 1154, not merely mentions these monoliths, but professes to give also a translation of their hieroglyphs. Among the many fanciful and wholly conjectural interpretations which were given to hieroglyphic inscriptions before the days of Champollion, none is so extraordinary as this. The following is taken from the French translation of Edrisi by Jaubert: "Near this city (Alexandria) are seen two obelisks. You see on them inscriptions in Syrian characters. The author

¹ Sharpe's Hist. of Egypt, vol. ii, p. 96, together with his explanation of Fig. 44, in vol. ii, p. 5.

² For probable date of its fall see article on the London obelisk.

of the Book of Marvels states that they were cut in the mountain of Tarim, or Iarim, at the west of Egypt. You read on one of them as follows: 'I, Ia'mor ben-Cheddad, I have built this city, at a period of life still remote from old age,—my death not appearing to be near at hand, nor my hair blanched with years. At an epoch when stones were as clay, when men knew no other master than Ia'mor, I have built the colonnades of the city, I have brought in its water, I have planted its trees; I have desired to surpass the ancient kings who governed it in my construction of admirable monuments. I (therefore) sent Thabout ben-Mara, of the tribe of A'd, and Makdam ben-el-O'mar ben-Abi Reghal, the Thamoudite, to the red-colored mountain of Tarim. They took thence two blocks of stone, which they brought here on their backs; and since Thabout's side was broken, I gave up to his service the people of my kingdom. Fedan ben-Djaroud el-Montefeki; erected for me these shafts in a time of prosperity.'

The Arabian physician Abd-el-Lateef, writing in 1201 (De Sacy), merely mentions that he saw the two obelisks near the sea. From this time a long period elapses without any especial record of these shafts, until the visit of Petrus Bellonius to Alexandria in the middle of the sixteenth century A.D.¹

The plate of Kircher, published in 1652, shows our obelisk as square and unbroken to the base. Paul Lucas, visiting Alexandria in 1714, found the lower portion of the shaft buried to the depth, as he estimates, of twelve feet. In 1718, the French Consul Le Maire is reported to have excavated the obelisk to its pedestal. Sicard, in his *Nouveaux Mémoires* (vol. vii, published in 1729) found the base concealed from view, but notes that the shaft rests upon a granite pedestal, according to the account given by Le Maire. Thomas Shaw, who visited Alexandria about 1730, found the base hidden from sight, but repeats the account of Le Maire's excavation: According to Le Maire, he says, "the bottom of the shaft was not square, but was hemispherical in shape, and was exactly fitted into a socket of corresponding form cut in the upper surface of the pedestal."

Norden, travelling in Egypt in 1737-38, found that the base of the shaft was buried in the earth. Pococke, in Egypt, 1737-39, repeats the account of Le Maire: "It has been found," he says, "by digging under ground that the bottoms of the obelisks were rounded and let into a plinth, as the Egyptians used to place their pillars." Dominique Jauna, in his history published in 1747, reports that the pedestal cannot be seen, since it is covered with sand. Van Egmont and Heyman² state that the pedestal of the standing (New York) obelisk is "a flat, square plinth, eight feet on each side and six feet in depth, formed out of a single block of greyish marble or granite, which projects fourteen inches on every side beyond the base of the obelisk." The visit of Niebuhr, in 1761, adds nothing to our information. Baron de Tott (*Mémoires sur les Turcs*, 1785) found that the base of the standing (New York) obelisk was buried out of sight, but judged from his examination of the base of the fallen (London) obelisk that each shaft originally stood upon four bronze cubes or dies.³ Zoega, in his "*De Origine et Usu Obeliscorum*," published in 1797, has in mind the accounts of Le Maire and of Baron de Tott, when he says that it is probable that the foot of the shaft is inserted into the upper surface of the pedestal, and is perhaps made firm by means of bronze bars.

The authors of the *Description de l'Egypte* report that the shaft had been excavated to its pedestal by M. Conté,⁴ but at the time of their own examination it was again buried from sight. Their plate shows the shaft, with its pedestal, resting upon three steps; no bronze crabs are to be seen, but the obelisk is represented as supported or propped upon its pedestal by fragments of stone.

¹ See description of London obelisk.

² Travels translated from the Dutch and published at London in 1759.

³ Mr. Feuardent's comment on this is that the Baron saw the remnants of the metal supports attached to the (London) obelisk, and that they were probably already broken, since he calls them "cubes" or "dies."

⁴ I cannot learn at what date M. Conté excavated the pedestal. I have gone through the 5 vols. (9 vols. in 5) of the text of the *Description*, etc., without finding a word on Alexandria. The above statements are taken from the brief explanation of the plates. "When the French army was at Cairo, the base was laid bare to its lowest foundation."—Long, *Egyptian Antiquities*, vol. i, 300.

Denon,¹ in his Atlas, published 1829, presents us with a very neat and draughtsman-like delineation, in which the pedestal with its three steps appears to have been drawn with the fidelity of an eye-witness; unfortunately, however, for our reliance on his accuracy, the base of the shaft is represented as square, unbroken and flush with the surface of the pedestal. Lenormant, in his *Musée*, published in 1841, copies the plate of the *Description de l'Égypte*, and adds the following: "The obelisk rests upon a block of granite, which is 6 [Fr.] ft. 1 in. high, and 8 ft. 10 in. in diameter; this pedestal is itself supported by three granite steps, which project on every side. The base of the monolith, its corners being broken, and being of an irregularly rounded form, is sustained upon its pedestal by a sort of mason-work (*maçonnerie*), which compensates for its inequalities and maintains the stability of the shaft. This masonry, of more recent date, was intended to replace the *pidouches* (bracket-pedestals) of bronze which anciently supported the monolith while isolating it from its pedestal."

At the time of the removal of this obelisk to New York, it was found that, at some period since its erection at Alexandria, the corners at the bottom of the shaft had been broken and irregularly rounded. Pontius had mounted it on bronze supports, one under each angle, firmly soldered with lead into mortices drilled upward into the shaft and downward into the pedestal, each bar projecting from the body of a bronze crab about 16 inches in diameter. One of these crabs had been seen in position by Mr. John Dixon, when, on the removal of the London obelisk from Alexandria in 1877, the base of our obelisk was exposed. Two of the crabs only, both broken, were found by the author of this volume; the other two had at some previous time been carried off by plunderers. (See Plate v.) Upon the only remaining claw of the two crabs that were found by the author there are two inscriptions, on one side in Greek, on the other in Latin, which fix the date of the re-erection in Alexandria.

The only satisfactory explanation that has been given of the adoption of the form of a crab for the metal supports on which the Romans mounted the obelisks in Alexandria, is that of Mr. Gaston L. Feuardent, in a paper read before the American Numismatic and Archæological Society on January 15, 1881, which is as follows:

In examining these interesting fragments of bronze, the discovery of which has resulted in establishing the true history of the obelisk now in New York, as well as that of the one in London, and does away with the legend which brought the name of Cleopatra in relation with their erection at Alexandria, we cannot help inquiring into the reasons that led the Romans to select the "crab" to support the venerable monolith. We know that the ancients were most careful in their dealings with subjects relating to religion, and every detail in their figurative works had meaning. In the case of the erection of the Alexandrian obelisk in the Roman time, prudence must have been observed by the conquerors in order not to offend the superstitions of the vanquished Egyptians, especially when they related to a class of monuments which, from immemorial time, were regarded in Egypt as being divine symbols.

Therefore, we may feel certain that the "crabs," placed by the Romans under the obelisk, were well chosen to give satisfaction both to the Roman and Egyptian peoples.

I am astonished that—since they were first mentioned by Dickson—no European archæologist has attempted to explain why they were placed as found.

We know, however, that the "crab" is constantly brought in connection with the worship of Apollo in ancient times, and we remember it was principally at the beginning of the Roman Empire that Apollo-Phœbus was distinctly identified with the "Sun." So, in Egypt, where the native Pantheon was already assimilated to the Greek mythology, it must have been regarded as quite natural that an attribute of Apollo, the Sun-God, was employed to support the symbol of Ammon-Generator, which takes a material shape and is visible in the form of the "Sun."

Here is a coin of Croton, struck in the sixth century B.C., on which you will see a "crab" in connection with the "tripod" of Apollo. You will remember also the fable of Hercules killing the hydra, where the "crab" is represented as an instrument of the hatred of Apollo against Hercules. The demi-god is in the act of fighting the hydra, when an enormous "crab" bites him at the heel; Hercules kills the "crab," which is placed in heaven by Juno, and where it becomes in the Zodiac, the sign called "Cancer." Many antique monuments represent the relation of the "crab" to the worship of Apollo, and to come back to our favorite pursuit,

¹ Denon died in 1825.

"Numismatics," there is that beautiful and highly artistic coin of Amphipolis, on which is represented the bust of Apollo, full face, with a large "crab" resting on his neck.

You will find in the *Revue Numismatique*, of 1863, an article by M. Dupré, in which that coin is engraved; and in the text, the scientific development of this question. In recalling to my mind that article, the idea came to me to suggest to you that these images of the "crabs" are one more proof of the steady and constant aim of the ancient conquerors of the world to try to assimilate to their own beliefs the religion of the peoples they had vanquished, and by so doing, to make them more easily friendly to themselves; while, since the Mediæval times, the idea of conquerors has always been to impose their own faith on the less fortunate peoples; and perhaps in this remark we may find an explanation of the comparatively facile assimilation of annexed countries with that of the Greeks and Romans.

For convenience of the reader the inscriptions and translation are reproduced here with the notes of Mr. Feuardent, which are of the greatest interest:—

Λ' Η ΚΑΙΣΑΡΟΣ
ΒΑΡΒΑΡΟΣ ΑΝΕΘΗΚΕ
ΑΡΧΙΤΕΚΤΟΝ ΟΥΝΤΟΣ
ΠΟΝΤΙΟΥ

(Inscription.)

ANNO VIII
AVGVSTI CAESARIS
BARBARVS PRAEF
AEGYPTI POSVIT
ARCHITECTANTE PONTIO

(Translation.)

In the eighth year
of Augustus Cæsar
Barbarus² prefect
of Egypt placed.
Pontius architect.

The shaft supported on the bronze crabs had been placed by the Roman architect Pontius on a plinth of syenite, which stood on a base with three steps of hard limestone. The foundation was a mass of concrete capped with masonry up to the level of the pavement. A drawing (Plate xi) and description of these will be found in Chapter I. The plinth and base were removed to New York and restored exactly as they were constructed by Pontius; the only instance, with the exception of the small obelisk of Corfe Castle, in which an Egyptian obelisk, transported from its home in Egypt, has ever been accompanied by its original pedestal and steps. There is no positive proof that these were removed with the obelisk from Heliopolis by the Romans, but there are good reasons for such an assumption.

¹ This sign is like the Roman letter "L," and is of frequent occurrence in the Græco-Egyptian inscriptions. It is to be found in the coins of the Lagide dynasty as early as the time of Ptolemy Soter, when the Latin language could not yet have been introduced into Egypt. It represents the first letter of the Greek word "Λυκάβαντος" meaning "of the year," for it is the genitive of the word "Λυκάβας." It is supposed to be a demotic ideographic sign, and certainly represents the word "year."—G. L. F.

² The presence of the name of Prefect Barbarus in connection with the eighth year of Augustus seems to contradict the suggestion made by Mr. F. Feuardent, in his *Numismatique de l'Égypte Ancienne*, that P. Rubrius Barbarus was prefect in B. C. 13; Barbarus was in power in Egypt at least ten years before that date; and Mr. F. Feuardent's authority, viz.: the inscription of Philae (Wescher: *Bullet. Instit. Archéol.*, 1879) appears to have misled him.

I have not been able to compare this question of the time of power of Barbarus, as written on the obelisk "crab," with the list of prefects published by Franz, in his *Corpus Inscriptionum Græcorum*.

In regard to the corresponding date of the eighth year of Augustus with that of the Christian era, I suggest that it was during the year B. C. 22 that the obelisk was erected at Alexandria. This date of the eighth year cannot correspond with the "Actian Era," and then it must be that of the reign of Augustus himself. Therefore, the *Anni Augusti* having begun in the year of Rome 725 (A. U. C.), or B. C. 29, the eighth year of Augustus falls at B. C. 22. I do not follow Censorinus, who makes the Cæsarian era begin at A. D. 27.—G. L. F.