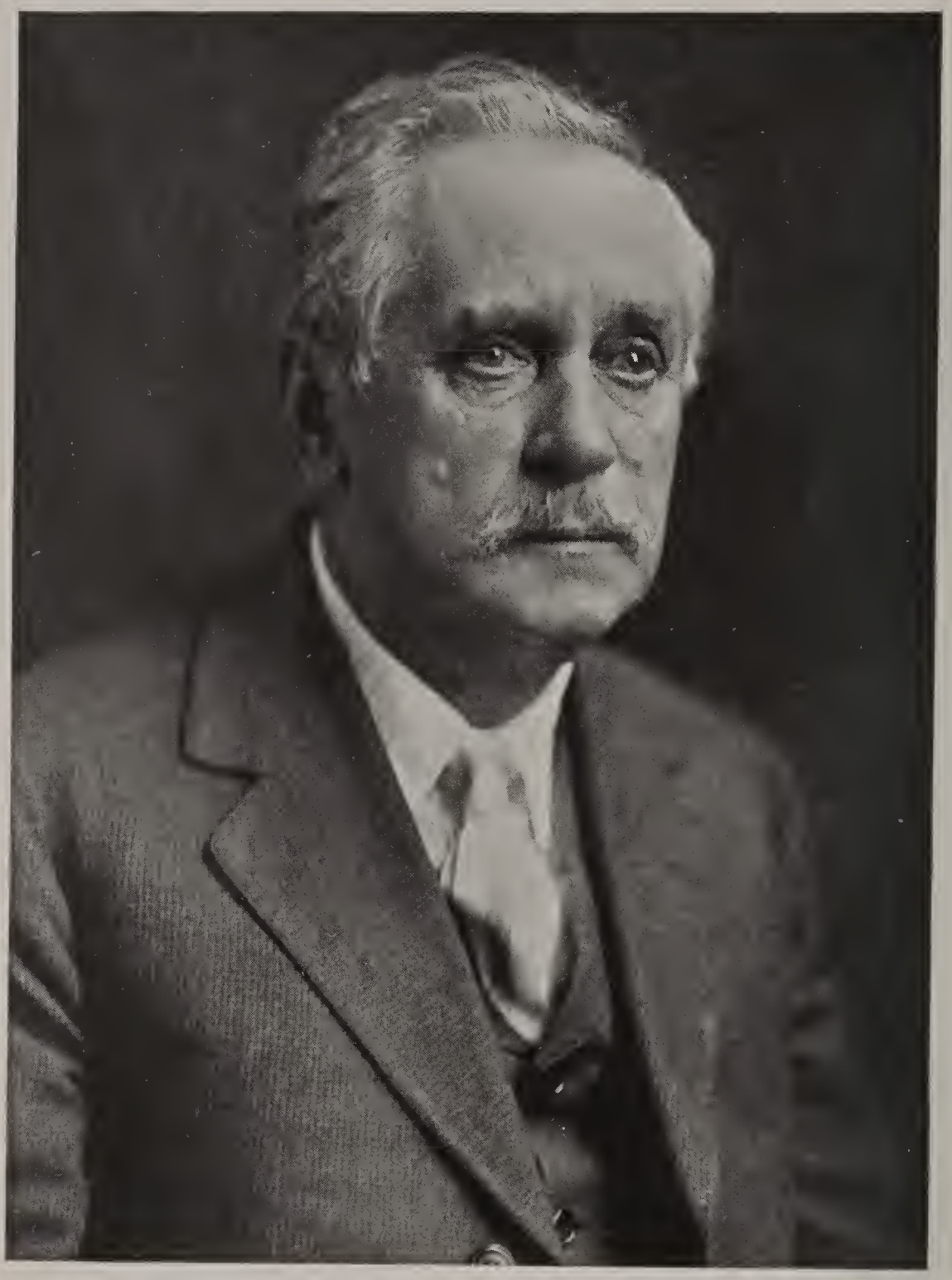

Gustav Stresemann

THE STORY OF

TERRA COTTA

BY

WALTER GEER

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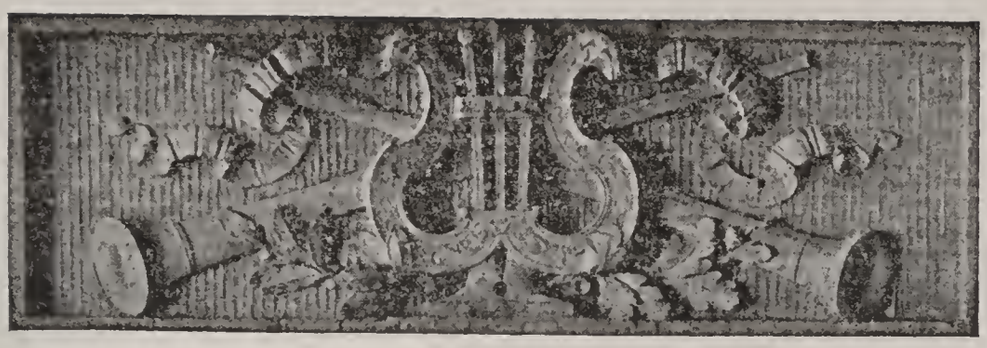
TO
THE MEMBERS
OF THE
NATIONAL TERRA COTTA SOCIETY
THIS BOOK IS DEDICATED
BY THEIR ASSOCIATE

THE DEAN

NEW YORK CITY
JANUARY, 1920

"And so I penned
It down, until at last it came to be,
For length and breadth, the bigness
which you see."

BUNYAN—*Apology for his Book.*



THE STORY OF TERRA COTTA

CHAPTER I

ANCIENT AND MEDIEVAL TIMES

TO tell the story of terra cotta through the ages is to narrate the history of civilization itself, for the authentic records of the use of burnt clay as a constructive and decorative material in architecture extend back to twenty centuries before the Christian era. The fact that in this practically imperishable material we have preserved to us more completely than in any other, the thoughts and works of artists in every age of the world, and in every country at any time civilized, from a period of almost fabulous

antiquity down to the present time, shows the immense field for inquiry into the uses and advantages of the artistic employment of burnt clay. It may seem a somewhat rash assertion, that the burnt clay of the ancients is identical in substance with the terra cotta of today, but such is the fact. Terra cotta is undoubtedly the oldest building material known to history, other than wood, and was probably employed in the making of domestic vessels before building was known as an art.

The term by which this material is technically known, literally "cooked earth," dates from the period of the Italian Renaissance, when terra cotta was first largely used for architectural purposes. But the material itself, both in the form of bricks, and in the more elaborate constructive and decorative forms, was largely used by the earliest builders. The fact that clay when subjected to great heat would become a hard brittle substance must have been discovered in primitive times by the kindling of fires on clayey soil, and the utility of this substance for domestic and architectural purposes have been suggested as the

result. The fragments from the ruins of the most ancient temples and palaces reveal its application for these purposes. In fact, terra cotta may be said to be prehistoric in its origin, for it is in some cases our only link with nations of the most remote antiquity. To terra cotta we owe nearly all the information we possess in regard to the most ancient states and empires; bank notes, deeds of property, private transactions, public records, still being found in a good state of preservation among the ruins of ancient Babylon and other great cities of the past. The public records of the Assyrians were kept minutely inscribed on cylinders and tablets of clay which were afterwards baked. These furnish complete materials for transcribing the history of those times. To these records, revealed by the researches of Layard, Rawlinson and others, we owe much of our knowledge of the ancient Assyrians, Chaldeans, and Egyptians. The historical researches with reference to the Jews have also been much assisted by the inscriptions found on earthen bowls taken from the ruins of Babylon.

It seems to us important to dwell somewhat on the historical aspect of this subject, before considering its modern development and uses, as so few seem to be aware that we are not dealing with a new substance, but rather with the oldest manufactured material to which we have historical references. Indeed, it may be well said that, so far from history perpetuating the records of terra cotta, terra cotta has perpetuated the records of history.

Sun-dried and baked clay was employed by nearly all the great nations of antiquity in their earlier works. The granaries and storehouses of Egypt, the vast mounds of Nineveh and Babylon, the aqueducts and other remains of Roman times, testify how wide-spread was its use. Nor was it used merely as a building material. The clay cylinders of Nineveh have been the means of treasuring up the documentary records of a monarchy, of which other direct records have almost wholly perished; while our museums are full of wonderful evidences, in their collections of Etruscan vases, of the beautiful art, the refined taste, and the poetic imagination of this mysterious people,

whose very history is lost and whose race and era are disputed questions.

All nations whose early history is known to us, Assyrians, Egyptians, Greeks, Romans, Gauls, have left us records of their thoughts on terra cotta. The invention of the art of working in terra cotta was claimed by the Corinthians, who are said to have exhibited in their city specimens of the first efforts in it from the hand of the celebrated potter Dibutades. In order to preserve the likeness of his daughter's lover, he moulded in terra cotta the shadow of his profile on the wall, and this production is said by Pliny to have been in existence when the city was stormed by Mummius. The invention was also claimed by the Samians, who maintained that Rhoecus and Theodorus, who were sculptors in bronze, and who flourished about 657 B. C., had first practiced the art of modelling. As the early sculptors cast their bronzes solid, like the Egyptians, who are supposed to have been the fathers of the art, it is evident that modelling in clay must have preceded working in bronze.

The Egyptians made small figures of terra

cotta covered with inscriptions. Referring to these portrait statues recently discovered in the secret recesses of the tombs around the bases of the Pyramids, Fergusson says: "Nothing more wonderfully truthful and realistic has been done since that time, till the invention of photography; and even that can hardly represent a man with such unflattering truthfulness as these old colored terra cotta portraits of the sleek rich men of the Pyramid period."

By the ancient Greeks and Romans, terra cotta was employed for an immense variety of purposes, from the commonest objects of everyday use to the most elaborate and ambitious works of art, such as colossal statues and groups.

Pausanias mentions having seen at Athens two remarkable terra cotta groups, representing Theseus killing the robber Sciron, and Heos (Aurora) carrying off Kephalos. The celebrated painter Zeuxis was accustomed to model in terra cotta the subjects which he afterwards painted, and many of the artists of the later schools combined the plastic art with that of painting. The immense number

of terra cotta objects at Athens is alluded to by Demosthenes in his first Phillipic.

The ancient Greeks and Romans seem to have appreciated the fact that stonework, as well as wood, needed protection from the weather, as is shown by the common practice of nailing slabs of terra cotta over the surface of both these materials. Many examples of this fashion can be found in Sicily and southern Italy. They occur at Olympia in the Treasury of Gela, and also in a temple at Selinus. The best example of this practice can be seen in the temple at Civita Lavinia, the remains of which belong to the sixth and the fourth centuries B. C.

As in other branches of art, the Romans closely copied the Greeks in their wide employment of terra cotta for statues, reliefs, and architectural ornaments. A large number of beautiful Graeco-Roman reliefs exist, many having designs evidently copied from earlier Greek sculpture. Berlin, the Louvre, the British Museum, and many places in Italy, possess fine collections. Friezes, with beautiful reliefs, twelve to eighteen inches deep, often

occur, little inferior in execution to the earlier Greek work. These terra cottas belong to the early period of the Empire. At the end of the first and in the earlier part of the second century, A. D., the use of terra cotta for architectural adornment was carried to a high point of perfection in Rome. Many buildings of the period have the most elaborate decoration, moulded in clay and fitted together with wonderful neatness. Not only enriched cornices and friezes were made of terra cotta, but even Corinthian columns, with their elaborate acanthus capitals. The best existing examples in Rome are the Amphitheatium Castrense, many tombs on the Via Latina, and the barracks of the VIIth Cohort of the Guards in the Trastevere.

The Romans also largely employed terra cotta in mural decoration, both for the interior and exterior of their buildings, in the form of slabs, ornamented with reliefs, hung on the walls or around the cornices. That these reliefs were pressed in moulds, similar to the modern practice, is shown by the frequent repetition of certain subjects with only slight

differences, evidently due to retouching before baking, hence the variations. Reliefs entirely modelled are much rarer, but some exist of considerable artistic feeling and freedom. Circular holes are left in the slabs for the plugs by which they were attached in their places. These terra cottas range in color from a light buff to a dark red.

It would require too much space to enumerate all the various forms and subjects represented in terra cotta by the ancients. Some of the extensive uses to which it was put are thus summarized by Mr. Birch: "It supplied the most important parts both of public and private buildings, as the brick, roof-tiles, imbrices, drain-tiles, columns, and other architectural members. It also served for pavements, and for the construction or lining of cisterns and aqueducts. Among its adaptations to religious purposes may be noticed the statues of the gods which stood in the temples, besides copies of them on a reduced scale, and an immense number of small votive figures. It also supplied the more trivial wants of every-day life, and served to make studs for the

dress, bases for spindles, tickets for the amphitheatres, and prizes for victors in the games. Of it were made the vats or casks in which wine was made, preserved or exported, the pitchers in which it was served, and the cup out of which it was drunk, as well as all the various culinary and domestic utensils for which earthenware is used in modern times. It furnished the material for many small ornaments, especially figures, which are often of a comic nature, and supplied the undertaker with bas-reliefs, vases, imitative jewelry, and the other furniture of the tomb."

The terra cotta industry extended from Rome to the provinces, and examples of local make have been found even in Britain, as at Colchester and London. In Gaul, in particular, and in the Rhine district, there were very extensive manufactures of terra cotta after the conquest by Julius Caesar in 58 B. C. The principal centre of manufacture was the district of Allier in Central France, but the industry was carried on in Alsace and Belgium and along the Rhine.

After the downfall of the Roman Empire

in the West, the artistic use of terra cotta was abandoned for many centuries, though here and there both in Italy and in parts of France and Germany the manufacture was continued.

The Middle Ages

The true renaissance of the use of terra cotta came during the 14th and 15th centuries, when it was adapted in various parts of Europe to the most magnificent and elaborate architectural purposes. In northern Italy this use of terra cotta was carried to a very high point of perfection. The western facade of the Cathedral of Monza is a work of the most wonderful richness and minute elaboration, wholly executed in clay in the latter part of the 14th century. The Cathedral of Crema, the communal buildings of Piacenza, and S. Maria delle Grazie in Milan, are striking examples of the extreme splendor of effect that can be obtained by terra cotta work. The Certosa, near Pavia, is a gorgeous specimen of the early work of the 16th century: the two

cloisters are especially magnificent. Pavia itself is very rich in terra cotta decoration, notably the ducal palace and the churches of S. Francesco and S. Maria del Carmine. Some delicate work also exists among the medieval buildings of Rome, dating from the 14th and 16th centuries, as for example the rich cornices on the south aisle of S. Maria in Ara Coeli (1300); the front of S. Cosimato in Trastevere built 1490; and a once very magnificent house, near the Via di Tordinone, which dates from the 14th century.

To this period belong the products of that most famous of all workers in clay, Luca della Robbia. No sculptured work of the great 15th century ever surpassed the Singing Gallery made by him for the Cathedral of Florence, somewhere between 1430 and 1440. The works of Luca della Robbia, while not strictly terra cottas, in the modern acceptation of the term, are among the most valuable examples of the use of burned clay in architectural decoration. From the time of Luca della Robbia, ceramic ornaments invariably entered into designs for buildings. It was then that the art

of terra cotta most flourished in Italy; and it is from the productions of this period that much of the inspiration of modern designs has been drawn, especially in those structures erected prior to the middle of the last century.

West of the Alps, clay was not so much used for building or decorative purposes. Nevertheless, in the south of France, in Toulouse, remarkable examples exist. On the Rhone, carved tiles are to be found in very elaborate cornices and balustrades. In the north of Germany, in Brandenburg, Luneburg, Hanover, and the provinces on the Baltic, brick and ornamental terra cotta were largely used in preference to stone, not only for exterior work, but also for the interior of churches, halls, and private dwellings, even the lofty piers of the cathedrals being moulded in clay.

The mark of Brandenburg is especially rich in terra cotta work. The Church of St. Catherine, in the city of Brandenburg, is decorated in the most lavish way with delicate tracery and elaborate string courses, and cornices enriched with foliage, all modelled in clay. The Town Hall is another instance of the same use

of terra cotta. At Tangermünde, the Church of St. Stephen and other buildings of the beginning of the 15th century are wonderful examples of this method of decoration: the north door of St. Stephen's especially is a masterpiece of rich and effective moulding.

From these two centres the development of architectural terra cotta gradually spread over western Europe. The German school influenced the work done in the Low Countries and finally in England, where it also met the direct influence of the Italian School due to the invasion of England by Italian artists who were invited there during the reigns of Henry VII and Henry VIII. Examples of the terra cotta work of this period are found only in the eastern and southern counties, and it is probable that much of this work was imported from Holland or Flanders, as it is distinctly Dutch in style. Essex possesses the finest examples, such as those to be found in the Manor House at Layer Marney and a richly decorated terra cotta tomb in the church at the same place, both dating from the reign of Henry VIII.

The introduction of the Tudor style gave

an impetus to the use of brick, moulded brick and terra cotta, and during the 16th century many large mansions were erected in England of brick, having moulded brick cornices and terra cotta trimmings. It is said that Holbein promoted the use of moulded brick and terra cotta, towards the end of the Tudor period. The friezes, cornices, and other highly ornamental work in terra cotta, of the Manor House at East Barsham, and the Parsonage House at Great Snoring, both in Norfolk, erected during the reign of Henry VIII, are worthy of particular notice, and the use of terra cotta for decorative panels and bas-reliefs appears to have been popular during this time. The gateway of York Palace, Whitehall, designed by Holbein, was decorated with four circular terra cotta panels, which are still preserved.

The unsettlement which followed the Reformation in England, and which continued during the Stuart period, seems to have put an end to this imported art, and it is not until modern times that we find a revival of architectural terra cotta in England.

Another offshoot from the fertile plains of northern Italy was implanted in France during the 16th century. Many Italian artists were attracted to France by Francis I and his successors, and among other arts they introduced the making of architectural terra cotta. The most famous name in the list of these Italian artists is that of Girolamo della Robbia, of the famous family of that name, who executed for Francis I, at Paris, in 1529, the enamelled terra cotta for the decoration of the "Petit Château de Madrid" in the Bois de Boulogne. This last and most extensive work in terra cotta executed by the Robbia family was destroyed in 1792 during the French Revolution, but exact drawings showing all the details are still in existence.

During the 17th and 18th centuries there was a revival of the art in England, and many choice works were executed in terra cotta. In many parts of London, mouldings and cornices of this date can still be found.

About the middle of the 18th century Josiah Wedgwood began his career in the making of terra cotta vases and other wares.

About 1790, works were established at Lambeth, near London, by a lady of the name of Coade, for making terra cotta and architectural details, statues and vases. These works were in existence until about seventy years ago, when they were closed. Many of the leading sculptors who ranked high in the profession in the earlier days of the last century were employed at Coade's, and the durability of its productions can be attested by numerous examples. The capitals and other work in the oldest part of Buckingham Palace were made there, and although the stone work of the palace on all sides shows great signs of decay, the terra cotta Corinthian capitals are as sharp as when they left the kiln.

Early in the last century other manufacturers began to establish themselves in competition with Coade's. One of the most important of these was the plant of John M. Blashfield, established in 1839 at Canford in Dorsetshire. In 1848, he moved his works to Milwall near London. Ten years later, in 1858, under the patronage of the Marquis of Exeter, he moved his plant to Stamford in Lincoln-

shire in order to develop clay deposits in that location belonging to the Marquis.

Among the best modern examples of the extensive use of terra cotta, may be mentioned the South Kensington Museum, from designs by Gilbert Scott, architect, the Dulwich College, by Charles Barry, and the great Albert Hall, by Gilbert Redgrave—all admirable examples of the attractive effect produced by the judicious blending of brick and terra cotta in architecture.

CHAPTER II

THE UNITED STATES

ONE of the oldest terra cotta buildings in this country, of which there is any authentic record, is a church located on the northeast corner of 6th and State Streets in Columbus, Ohio. The attention of Samuel B. Orth was called to this building in July, 1919, by Harry C. Holbrook, an architect of Columbus. The church is trimmed with brown-stone colored terra cotta which was shipped from England in a wooden sailing vessel about seventy years ago. The terra cotta is still in excellent condition. Mr. Holbrook said that most people thought it was cast iron, and that he himself thought so until

recently, when he examined it more carefully. He asked Orth to make a special effort to see this church, which he did, and found it to be a rough stone building with very well preserved terra cotta trimmings. Orth writes:

"The lengths of the pieces, compared with their widths, are in excess of those which we are making these days. Some of the label mouldings which are only six or seven inches in width are approximately 2 feet 6 inches long, with about the same bond, and the jambs are exceptionally long for the width and as straight as a die. The lower portion, which could be reached with an ordinary ladder, has been painted, but that above let go. The style is Anglo-Norman, with round and square billet mouldings, and some dog-tooth, with ornamental columns, including cap, shaft and base. Characteristic to the style, there are also grotesque corbels and very heavy plain set-offs to butresses."

Flat terra cotta roofing tiles were made to a considerable extent in certain parts of this country, particularly in the German settlements of Eastern Pennsylvania, as early as the 18th century, and were commonly used on smith-shops and out-buildings, but rarely on

dwellings. The art was brought from Germany, where the same methods of manufacture are, to some extent, still practiced.

At Bethlehem, Pennsylvania, the Moravians made similar tiles from 1740, or earlier, until well into the last century. At many small potteries in Lancaster County, Pennsylvania, terra cotta roofing tiles have been made for upwards of a hundred and fifty years, and on an old smithy near the village of Bird-in-hand one of the tiles which covered the roof bears the date "1769," which covers the entire surface, having been traced in the moist clay by the finger of the workman. Such tiles have been found in the débris of an old smith-shop, which was built in 1709, at Cope's Bridge, on the Brandywine, near West Chester, Pennsylvania, which, while probably made by an English Quaker, are of the usual German form. Throughout the greater portion of Eastern Pennsylvania the flat tile is found.

About the year 1840 an attempt was made to produce architectural terra cotta at Worcester, Massachusetts. The clay used was of

a buff color, and the work was well burned. The terra cotta, however, did not go on its own merits as a material but had its surface covered with paint, and passed for stone or iron, as might suit the fancy or caprice of the purchaser.

Many good specimens of the terra cotta made at this time can still be seen in the larger cities of Massachusetts and the adjacent New England States. For example, the columns of the State Capitol at Boston have capitals of terra cotta made at the Worcester Works, and the windows of Pine Street Church are also decorated with the same material. Several residences also have terra cotta lintels, and pediments over the entrances and windows, made of terra cotta of about that period, but all the work is painted and sanded to imitate brown-stone and would hardly be taken for terra cotta by the casual passer-by.

There is no record of the manufacture of architectural terra cotta in New York until the year 1853, when an attempt was made to introduce it by James Renwick, the well-known

architect of Grace Church and St. Patrick's Cathedral, New York City.

Mr. Renwick was the son of James Renwick, a distinguished professor of chemistry at Columbia College, whose mother, Jean Jeffrey, of Lochmaben, a famous Scottish beauty, was the "Blue-Eyed Lassie" of Robert Burns's poem:

"'Twas not her golden ringlets bright,
Her lips like roses wat wi' dew,
Her heaving bosom lily-white:
It was her een sae bonie blue."

The Renwick family, early in the last century, lived at the corner of Cortlandt Street and Broadway, but later moved to the suburb of Bloomingdale, now a part of the city, where James Renwick was born in 1818.

In sketching the history of this first attempt to use terra cotta in New York, Mr. Renwick wrote Mr. Orlando B. Potter in 1886, as follows:

"In 1853, I conceived the idea of introducing terra cotta as a building material and substitute for cut stone work in New York. I went to a Mr. Young, who had a factory for making

glazed and other earthen sewer pipe, in 40th Street, and told him what I proposed doing, and asked him if he would manufacture it from my designs and under my supervision. I supposed it would be a source of large profits to him, as it would be more durable and ornamental, and less expensive, than the freestones which were then in use. I made a contract with him for the belt courses and the cornice of the Tontine Building, and for the ornamental work of the St. Denis Hotel, at 11th Street and Broadway, and for three houses in 9th Street, between Fifth and Sixth Avenues. All these buildings are now standing, and the terra cotta is as good as when first put up. We tried to introduce it into general use, but were violently opposed by the stone cutters and builders who said that it would not stand and persuaded owners not to use it.

"The only other building it was used in, so far as I know, was in the court of the La Farge House. This building was destroyed 8 January, 1854, by a fire which originated in Tripler Hall, which was in the rear and part of the hotel. These two buildings were on the west side of Broadway nearly opposite Bond Street. Tripler Hall was built in 1850 for the American début of Jenny Lind, but as it was not

finished in time she made her first appearance in September of that year at Castle Garden. It was the scene, however, of the début of a still more famous artiste, Adelina Patti, 22 September, 1853, who was then a child of ten years. The Broadway Central Hotel, originally named the Grand Central, was erected on the site of the La Farge House, and in its day was considered one of the finest hotel structures in the country. It was the scene of the shooting of Jim Fisk by Ned Stokes in 1872.

"Mr. Young, finding it impossible to introduce terra cotta, and having lost money in the attempt, gave up the manufacture and returned to making pipe. The fact is, we were ahead of the times, and could find no one who understood or would venture to use it. The buildings above mentioned, in which it was used, belonged either to my family or friends who had confidence in my judgment. About eight or ten years after this, Mr. Greenough, the sculptor, came from Rome to New York for the express purpose of introducing the use of terra cotta. I happened to dine with him, and he broached the subject. The next morning I took him to see the work on the St. Denis Hotel, and related my experience, and he gave

up the idea, being afraid of meeting the same difficulty I had experienced."

Another New York architect who did much toward introducing terra cotta work in the buildings which he designed, was the senior Richard Upjohn, father of the Richard Upjohn whose beautiful designs can be seen in the State Capitol at Hartford, Connecticut. When in the year 1852 he prepared the plans for the Trinity Building, situated on Broadway, just north of Trinity Church yard, he determined to use terra cotta and brick. The bricks were of a buff color and the terra cotta was painted to represent brown-stone. This building, at that date, was an important one, and for many years it held its own among the many imposing edifices erected in the city. The tiger-head keystones were modelled by W. K. Brown, sculptor. The work was made and burned at a drain pipe factory on 17th Street near the North River. The work was still perfect in every particular, when the building was razed some years ago, although it had been found necessary to reface the brown-stone work of which the first story was

constructed, the stone having frittered away in many places.

Mr. Upjohn also used terra cotta for the cornice of the Corn Exchange Bank Building, corner of William and Beaver Streets. This work, however, was not a success, as it was destroyed by frost the first winter after it was set in place. This terra cotta was made by Winter and Company of Newark, New Jersey. Mr. Upjohn afterwards said that the order was given to them because they offered to do it for less money than the manufacturers of the work for the Trinity Building.

After these first attempts to introduce architectural terra cotta in New York, there followed a period of nearly a quarter of a century, during which the manufacture and use of this material, so far as New York was concerned, was practically discontinued.

In the year 1872, when Sturgis and Brigham of Boston were commissioned to prepare plans for the Boston Museum of Arts, they were so convinced of the advantages of terra cotta that they determined to use the material

for the exterior decorations. They were not allowed, however, to use terra cotta without very strong opposition on the part of persons who had formed unfavorable opinions of the material. But if the architects met with opposition in some quarters, they had very satisfactory support in others. In his work on "Art Education," Walter Smith writes with reference to the Boston Museum of Arts:

"If a building were erected here in America containing brick as a basis, moulded brick for mouldings, terra cotta for its sculptured enrichments, and encaustic tiles to give bands of color, we should see a structure entirely composed of burnt earth, indestructible and unchangeable either by climatic or other influences.

"In September, 1871, I examined the terra cotta enrichments on the Kensington Museum in London, after they had been exposed for several years, and they were as fresh as on the day of their erection; whilst stone work that had only been up the same period of time was as black as soot. The clear atmosphere of this country does not call so loudly for cleanly decorations of buildings as Manchester and

London in the old country; yet here as there they would be pleasing.

"You may reduce all the pictures of the Museum to tinder; melt all the bronze statues until they run in the gutters; calcine the marble statues into plaster of Paris; burn all the building into lime, and all the animal and vegetable creations into ashes; and all this while terra cotta will glow red hot and remain uninjured, and cool down again into the shape we fashioned it. It is the noblest of all vehicles for the expression of art."

Mr. Smith, who was very highly considered by the art patrons of Boston, had much influence in directing the art education of that period, and his glowing eulogy of terra-cotta had much to do with deciding the Trustees to employ burnt clay as the material for erecting their splendid edifice "for exhibiting and preserving specimens of ancient and modern art by native and foreign artists."

The final decision of the Trustees in regard to the matter was not made, however, until after they had sent Mr. Sturgis to England in order that he might more fully investigate the subject. There he consulted Mr. Brimmer, the

wealthy patron of art and artists, and also Mr. Greenough, the sculptor, who were both in Europe at that time. The numerous buildings of the two principal manufacturers of terra cotta in England at that date, Blashfield, of Stamford, and Gibbs and Canning, of Tamworth, were carefully examined and reported upon. The contract for making the terra cotta was finally given to the former, because, although Gibbs and Canning had furnished the decorations for the great Albert Hall, and had also built other notable structures, Blashfield's work, on the whole, was found more satisfactory.

Sincerely Yours

F. H. Kriegshaber

CHAPTER III

THE FIRST MANUFACTURERS

IT is rather a remarkable fact that the two pioneer manufacturers of architectural terra cotta in the United States were both located south of the Mason and Dixon Line, and that they both began operations within seven years of the end of the Civil War. The first plant was located at Louisville, Kentucky, and was the forerunner of the great Northwestern Company of today. This will be described more in detail when we come to the Central Companies. The second plant was established a few years later at Atlanta, Georgia, and was the predecessor of the present Atlanta Company.

Atlanta has therefore the double distinction of being the only city in the South with a terra cotta plant, and of being the home of one of the two pioneer manufacturers in America.

The Atlanta Company

The story of architectural terra cotta in the South is admirably told in the following sketch by Victor H. Kriegshaber, the former President of the Atlanta Company:

"From reliable sources, I learn that about 1872, P. Pelligrini, and another Italian named Georgi, began operating a small plant for the manufacture of flower pots, chimney tops and architectural terra cotta, as it was then known.

"In 1875, Jack Castelberry bought an interest in the plant, and he states that until about 1885 the terra cotta that was made was of the kind that hung on the outside walls of the building. It consisted principally of door and window caps. The method of construction was simple in the extreme. Heavy iron hooks were driven into the mortar joints of the brick work, where these door and window caps were to be hung. The caps themselves were never burned very hard, and the hollow spaces were

filled with mortar, and then pressed up against the face of the wall—the iron hooks penetrating the soft mortar that filled the spaces in the terra cotta. The pieces were supported until the mortar had time to harden. Props were then removed, and the operation was finished, with the exception, generally, of painting the terra cotta, as it was not sufficiently hard burned to stand the weather.

"Somewhere around 1885, they found out that terra cotta was being made with sufficient bond to build into the wall, thus obviating the method of fastening, referred to above. From that date on, the development of the industry was rapid.

"It was not long after that time that the City Building Department secured the passage of an ordinance requiring owners to remove the outside hung terra cotta caps that were in existence in the city. This was made necessary by the fact that at frequent intervals, pieces of the terra cotta would drop out of place, to the risk of people who might be passing along the sidewalks.

"The first terra cotta plant at Atlanta was known as the Southern Terra Cotta Company, and to Mr. Pelligrini, an Italian, should be accorded whatever credit and honor there may

be in building and maintaining such a plant there, under very adverse circumstances.

"This company got along only fairly well. Their terra cotta was not hard burned, and the kilns were so built that a large percentage of the ware did not come out even in color. The paint pot was only too frequently resorted to, to correct what the kiln burning failed to produce.

"When hard times came along, the plant shut down, and about 1893, seven of the best mechanics of this plant started a little terra cotta works of their own, which later on became the Atlanta Terra Cotta Company. Among these men were a modeller, a draftsman, pressers, and plaster mould makers. They could build a kiln or a shop, and operate both. They had no business ability, and as soon as their limited funds were exhausted, they were at the end of their rope. Five of them disposed of their interests to the writer of this article, who in 1895 secured a charter and organized the Atlanta Terra Cotta Company with the magnificent capital of $1,500, represented by one little six-foot kiln, a rented residence which was converted into a shop, and a few odds and ends of tools and materials.

"The organization, in addition to the writer, consisted of Charles Baertschy, who was the draftsman, modeller, estimator and general handy-man around the plant, and A. Salms, who had charge of the pressing, mould-making and burning, and who was a most thorough hard-working man.

"When I look back in retrospect and recollect the difficulties that we had to overcome in manufacturing, and in financing the proposition, it is a wonder to me that we ever survived the ordeal. Only the hardest kind of work, and the loyal service of all those connected with the company made it possible to pull through.

"After a few years at the original location, the company increased its capital stock to $25,000, and we then purchased about twenty acres of land on the West Point Road, eight miles from Atlanta, and built a shop, kilns, siding, etc., and branched out on a larger scale.

"We were covering the southeastern territory very well, but we were not developing and improving the character of the material that we were turning out, in a measure that satisfied me. It seemed almost impossible at that time to secure technical assistance sufficiently

skilled in the industry. When the opportunity came to us to enter the Atlantic Terra Cotta Company, I recommended that this should be done, and the merger was arranged. Since then the plant has been enlarged, and developed to a very high degree. The quality of the terra cotta turned out has steadily improved, so that today I believe that this plant can turn out as good terra cotta as any in the country. It is being run successfully under the able management of W. C. Hall, Vice-President, and D. H. Hurlburt, Secretary and Treasurer. The field of operation is limited to the Southern states, extending from the Atlantic seaboard to Texas."

The Perth Amboy Company

In 1875, there was located at Perth Amboy, New Jersey, an old plant known as the A. Hall and Sons Fire Brick Works. That year William C. Hall, a grandson of Alfred Hall, graduated from the Sheffield Scientific School at Yale and began work there. In connection with the works there was a Yellow and Rockingham Ware Pottery owned by the same proprietors. This pottery had two kilns and was

superintended by a Mr. Woods, but the trade had so far fallen off that work was with difficulty provided for the employés, many of whom were on short time, with considerable arrears of wages due them. William C. Hall suggested to his grandfather, Alfred Hall, the senior partner, that it might prove profitable to change this Yellow Ware Pottery into an architectural terra cotta works, which could be done at a small outlay, and thus furnish a more lucrative business for his works and employés. Alfred Hall thought well of the idea and called upon James Taylor, who was at that time connected with the Eagleswood Art Pottery, to advise with him as to the probable cost and the most available methods for making the change. The advice given him led to the Yellow Ware business being closed. The kilns were made into muffled kilns and the works advertised as the A. Hall and Sons Terra Cotta Works.

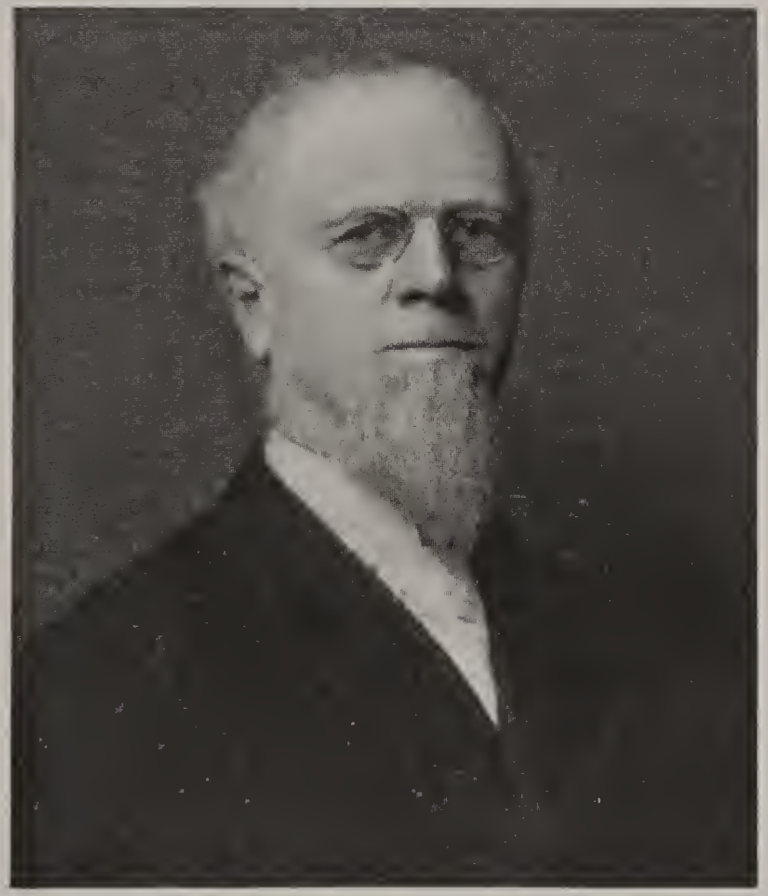
The new firm wished to engage James Taylor as superintendent of their works but he declined the position, and recommended that they employ his brother Robert W. Taylor who

had been with him for several years and who at that time was working for the Eagleswood works.

This advice they also followed, and about the month of June, 1877, Robert W. Taylor became the foreman of the works and at once began to reconstruct the plant in order to fit it for the production of architectural terra cotta.

The business for the first few months was very small, consisting mainly of decorative tiles, panels and cresting. Soon the business developed to such an extent that 1 June 1879, the Perth Amboy Terra Cotta Company was organized with the following officers: Alfred Hall, President; Eber H. Hall, Vice-President; Edward M. Cook, Treasurer, and William C. Hall, General Sales Agent.

During the course of the following year there arose a serious difference of opinion as to the ways and means of financing the company, and this finally led to the withdrawal of Alfred Hall and his son Eber H. Hall. In January, 1881, their stock was purchased by Edward J. Hall, a brother of William C. Hall,



Geo M. Fiske

Geo. P. Putnam

and Mr. Cook was made President, as well as Treasurer.

Mr. Cook proved a very energetic man of business, and gave a great impetus to the reorganized works. It was under his management, at the suggestion of James Taylor, that Joseph Joiner, of Leicester, England, a nephew of John M. Blashfield, was engaged to become the Superintendent of the works, the place previously filled by Robert Taylor. Mr. Joiner, who was later one of the firm of Stilz and Joiner, of Brightwood, Indiana, came to America, and at once entirely remodelled the Perth Amboy works. He did this according to his own ideas of efficiency, and he certainly made the plant the most extensive in the country, at that time, enabling the Perth Amboy Company to turn out within the contract time the largest order of terra cotta made in America for one building, prior to the present century.

The following October, when the large contract for the Produce Exchange was in prospect, an increase in the capital stock was found necessary, and certain complications arose in

this connection which resulted in Mr. Cook's resignation. The following officers were then elected, who remained in charge of the organization until it entered the Atlantic combination in 1907, namely: Edward J. Hall, President; William C. Hall, Vice-President and General Manager, and George P. Putnam, Treasurer. It was largely a family concern, Putnam being a brother-in-law of the Halls.

Shortly after the organization of the Perth Amboy Company, it secured its first important contract, the building for the Brooklyn Historical Society, George B. Post, architect. This building, being the first of note near New York in which terra cotta was used, attracted considerable attention, and induced the architect of the Pennsylvania Railroad to use the material in the first Broad Street Station, Philadelphia. This contract was given out in December, 1880.

The following interesting history of the Perth Amboy Company is from the pen of George P. Putnam:

"In the Summer of 1881, George B. Post

having been selected as architect of the Produce Exchange Building, advocated to the building committee the use of red terra cotta. A special car was engaged, and Mr. Post and the committee taken to the plant, not only to inspect terra cotta in the making, but to decide if the plant could be adapted to the manufacture of so large a contract in the required time.

"Those were the days of small things. I have sometimes wondered how the committee consented to award the Perth Amboy Company so large a contract, considering the small size and chaotic condition of the plant; but the successful completion of the contracts for the Historical Society and the Broad Street Station decided in the Company's favor, to say nothing of William C. Hall's representation of the Company's ability to carry out any contracts it might enter into. The contract, a little over two thousand tons, was awarded in January, 1882. It was necessary to rapidly erect additional buildings and kilns, engage draftsmen, modellers, model makers and pressers. There were not sufficient terra cotta men in the country at the time, so as the contract labor law was not then in force, men in all these departments were induced to come from England; otherwise it would have been

impossible to have completed the contract in accordance with its terms, even if it could have been made at all.

"For the first two years of the Perth Amboy Company's existence it was thought that only red clay from Baltimore, used to make the Baltimore pressed brick, was suitable for terra cotta, but before the Produce Exchange was made, it was found that the red clay in the vicinity of Perth Amboy was equally, if not better, adapted.

"Until sometime in 1882 the only terra cotta produced in the East was red, the use of Philadelphia and Baltimore red pressed brick being almost universal. During that year Mr. Post awarded the Perth Amboy Company the contract for the terra cotta in the Post Building, Exchange Place and Hanover Street. As buff brick were to be used, he desired a buff terra cotta to go with it. There was some speculation as to whether it could be made successfully, but after several experiments, it was decided to make the attempt. In manufacturing the material in bulk, however, an unexpected difficulty was experienced, a large part of the material coming from the kiln pink in color. Much of it had to be replaced on this account, but in order to complete the building

without delay, it was necessary to use some of the pink material. This can now be seen in the Post Building, still standing near the old Custom House, now the City Bank.

"Shortly after the completion of the Post Building, the cause of the pinking in buff terra cotta was found to be insufficient steaming before putting on full fire, the higher temperature thus caused bringing out the iron in the clay. It must be remembered that this was before the introduction of the Séger cone, and the firing was necessarily left to the judgment of the head-burner. It was shortly after this that copper wires, from which iron washers were suspended, were used as trials, copper melting at about 2300 degrees. The copper wire served an excellent purpose, the only difficulty being that occasionally a piece of terra cotta would be spoiled by the iron washer. The use of the copper wire was not discontinued until the introduction of the Seger cone.

"There being no further trouble from the pink color, in 1883, the Metropolitan Opera House, in buff terra cotta, followed the Produce Exchange.

"Gray terra cotta was introduced about this time, and red, buff, and gray were, for several

years, the only colors used. About 1886 'Pompeian' and 'Old Gold' open-fire, or flashed terra cotta, were brought out, but owing to the great variation in color and other difficulties in manufacture, were not long on the market.

"The advent of the so-called 'Pompeian' terra cotta and bricks was brought about by accident. The late Stanford White, upon one of his visits to the Perth Amboy Plant, to talk over with Mr. Hall a special size Roman brick he wanted made, noticed the bricks used in the Company stable, and in the old Hall residence on the northwest corner of High Street and Buckingham Avenue. He said that was just about what he wanted for color, only with more spots. Mr. Hall told him he could easily give him what he wanted both in color and in size. Experiments were made, using Anness and Lyle's mottled clay, which at that time was a drug on the market, as it was not thought fit for high-class brick. Sample bricks were made, 12 by 4 by 1½ inches, out of this clay, burning them in open-fire brick kilns. They proved entirely satisfactory to Mr. White, who ordered them used in the Tiffany residence, at 72nd Street and Madison Avenue, New York City, of which he was the

architect. They proved a great success, and many large orders followed their use in the Tiffany residence. These bricks were known in the market at that time as 'Tiffany Brick.'

"Some years later, Mr. White gave Mr. Hall a fragment of a Roman brick which he had brought with him from Italy, and asked him to try and match it, as he wanted to use some bricks, and also terra cotta, of about the shade of the fragment, in a portion of his design for the new Library at Boston. The color of the fragment submitted resembled the color and mottled appearance of old weathered Roman gold. Mr. Booth was called in, and consulted, and he said he could match the color, using a standard buff body and burning in the upper bearings of the open-fire brick kilns. Sample bricks 12 by 4 by 2 inches were made and burned as directed by Mr. Booth. They turned out perfectly satisfactory to Mr. White, who ordered them used in the Boston Library. This was the origin of the so-called 'Old Gold' brick and terra cotta.

"In 1886, Cyrus L. W. Eidlitz, architect of the first telephone building, 18 Cortlandt Street, expressed a desire for a shade that should be distinctive and different from anything then on the market. A color was pro-

duced by a mixture of red and buff clays. This, meeting his approval, was chosen for both the terra cotta and the brick. It was given the name of 'Telephone' color, and for a time was quite a popular shade.

"In 1889, McKim, Mead and White asked for white terra cotta. This was made by spraying a buff body with a white burning clay. For several years there was quite a run on white terra cotta. The first building in which it was used was the Madison Square Garden, followed by the Imperial Hotel, Broadway and 31st Street, the Judge Building, Fifth Avenue and 16th Street, the Goelet Building, Broadway and 20th Street, and the Century Club, New York City, and the Reading Terminal, Philadelphia. The absorptive character of the white clay, however, caused the terra cotta to become soiled, and a demand arose for a material that should be permanent in color.

"In 1894, T. C. Booth, who had had some experience in making glazes in England, though he was far from being a ceramic chemist, brought some samples of full white glaze which looked promising. He was given an opportunity to make white glazed terra cotta. The samples came out successfully, excepting that they were full glazed: he was never able

to produce a mat glaze. At the suggestion of William C. Hall, these samples were sand-blasted, then presenting a very satisfactory surface, not absolutely non-absorbent, but more so than anything else then on the market.

"Many experiments were made to produce satisfactory polychrome terra cotta, but with little success, and in very primitive ways, until about 1900, when an excellent polychrome was produced. The Madison Square Church, Madison Avenue and 24th Street, now unfortunately being razed, is an excellent example of this material, and is notable as the last work of the late Stanford White. It was the first important example of polychrome terra cotta in this country.

"From 1879 to 1919, just forty years since terra cotta was placed upon the market as a commercial product in New York, and what real difficulties have been overcome in the course of more than a generation! The first trouble was caused by the use of sand in place of grit by Robert Taylor, when he first made terra cotta for A. Hall and Sons at Perth Amboy, evidently being unaware that burnt material was far superior. The use of the latter was first suggested by the late Edward J. Hall.

Other difficulties, such as cracking, warping, discoloration, have all been overcome, and today, after so many years, manufacturers are placing on the market a material that is not excelled by any other."

In the fall of 1903, William C. Hall, who had been the General Manager of the Company, suffered an attack of apoplexy, from which he never fully recovered. In 1907, the Company was merged in the new Atlantic combination.

In addition to the buildings mentioned in Mr. Putnam's story, the Perth Amboy Company furnished the terra-cotta for the Pulitzer Building, New York; Harrison Building, Philadelphia; Ellicott Square, Buffalo; Rialto, Chicago; Fairmont Hotel, San Francisco; and the Ponce de Leon Hotel, St. Augustine, Florida.

CHAPTER IV

THE BOSTON COMPANIES

THERE may be a reasonable doubt in the minds of many persons as to whether New York or Boston should follow next in order after Atlanta and Perth Amboy as the centre of the manufacture of architectural terra cotta in the East, but there can be no question as to the fact that the architects of Boston were ready to and did accept terra cotta as a building material long before the architects of New York were willing to recognize the practical utility of the industry in this country.

As early as 1871, John H. Sturgis, of the firm of Sturgis and Brigham, of Boston, had

given the material much study, and had formed such favorable opinions regarding it as to encourage him to read a paper entitled, "Terra Cotta and Its Uses," before the convention of American Architects, at their meeting held at the Massachusetts Institute of Technology, in Boston, 15 November, 1871. The following year, as already related, this firm employed English terra cotta very extensively in the Boston Museum of Arts.

With many examples before them, both of imported and native work, the architects of Boston did not long continue to neglect a material that was so readily obtainable and of such usefulness, and we find that the next step was taken by Whitney W. Lewis, who in 1877 made the designs for two houses at the corner of Commonwealth Avenue and Gloucester Street, in which red brick and buff terra cotta were used. This work, made in Chicago, was the first buff architectural terra cotta used in Boston, and these houses were really the first buildings of American terra cotta erected in the city of Boston.

The excellent quality of the terra cotta

made in Chicago, when judged by the standard of the fine imported English work on the Museum of Arts, created a growing demand for the manufacture of the material in Boston, and in 1878, when the city authorities decided to build a new English High and Latin School, George Clough, the city architect, was instructed to use terra cotta for the decorations. The contractors for the building were Norcross Brothers, of Worcester, Massachusetts, who had set in place the terra-cotta on Trinity Church. The contract was given to the Chicago Works, but Sanford E. Loring, the Manager, realizing the expense of freighting the manufactured terra cotta from Chicago to Boston, induced James Edmonds, the manager of the Boston Fire Brick Company, whose works at 394 Federal Street were partially idle, to undertake the contract, and the prepared clay only was sent from Chicago, all the work being modelled, moulded, pressed and burned at the Boston Works.

As Loring had to superintend the Chicago Works, it was of course impossible for him to take care of the Boston branch. He therefore

went to Eagleswood (Perth Amboy), New Jersey, where his old superintendent, James Taylor, was engaged, and prevailed upon him to go to Boston and take charge of making the Latin School work. Thus under experienced management the new Boston branch of the Chicago Works succeeded in producing what is even at this date one of the best specimens of terra cotta work in Boston. The color of the terra cotta work is gray, while the brick work is red. It is worthy of mention that the time between beginning to reconstruct the works at Federal Street and the first deliveries of terra cotta at the school house site was so short that pug mills could not be got ready in time, and the clay for the work burned in the first kilns was tempered by foot in the old primitive way.

The progress of the Boston branch was so rapid that several large contracts for terra cotta were soon obtained, among others a dormitory for Brown University, and the Hotel Dorrence, at Providence, and the Morse Building, corner of Nassau and Beekman Streets, New York.

Although the Boston enterprise started out so well it did not long continue. Some dispute over finances arose between the Boston Fire Brick Company and Loring which led to a final break, and all business relations were closed between them. Taylor was engaged to appraise the value of stock and plant, and to finish all outstanding contracts, which he did in the Spring of 1879. One contract, that for the Brooklyn Historical Society, had just been started, and was by his advice given to the firm of Alfred Hall and Sons, of Perth Amboy, which was then just beginning to make architectural terra cotta work, in their old Yellow Ware Pottery.

Among the employés of the Boston Terra Cotta Works was a young man named Harry A. Lewis, a brother of Whitney W. Lewis the architect. When the Boston Works were closed he formed a partnership with an old friend, Charles G. Wood, to reopen the works. This was done in May, 1879, and James Taylor was engaged by them to superintend the works and advise them in the business, neither of them, at that time, having had any experience

in terra cotta, except the few months that Lewis had acted as clerk for Loring. In 1880, they moved their business to First Street, South Boston, and built a new factory. In July, of the same year, the firm of Lewis and Wood was dissolved, Mr. Wood retiring from the business. Lewis then obtained a new partner, and the works were continued under the name of Lewis and Lane. Taylor's connection with the firm ceased with the retirement of Wood. The new firm did not endure much longer than the old, and after the retirement of Lane, in July, 1883, the business was continued by H. A. Lewis alone, under the style of the H. A. Lewis Architectural Terra Cotta Works. During the eight years these works were in operation under H. A. Lewis and his partners, they produced many good examples of terra cotta, which are spread over all the Eastern and Middle States, some of them being of large and fine proportions. Lewis had very good family and business connections, and made an artistic, if not a great financial success of his business. In 1887, he sold his business to the Perth Amboy Company

and became manager of their Philadelphia office.

In 1880, after the vacating of the Federal Street works by Lewis and Wood, the directors of the Boston Fire Brick Company thought it was still desirable to use the plant for making architectural terra cotta. They therefore invited James Taylor, who had returned to New Jersey, to come to Boston and see them regarding the matter. The result of this consultation was the organization, 19 October 1880, of the Boston Terra Cotta Company, with James Taylor as Superintendent.

The Boston Company at once stepped into the front rank, and for many years did a very successful business. Soon after the works were reopened, the Secretary and Treasurer, James Edmonds, died, and George M. Fiske, of the firm of Fiske and Coleman, was elected to fill the vacancy. Mr. Fiske carried the enterprise to a great success, and to him terra cotta workers owe a debt of good will for his energetic and persistent efforts to advance the craft. The President of the Boston Company was R. G. F. Candage, a retired sea captain

and a member of the Harbor Commission of Boston. The Treasurer, George M. Fiske, was an Alderman of the City of Newton. One of the Foremen was John Evatt, who was later connected with the New York Company, and afterwards the New York representative of the Boston Company. His son, Frank G. Evatt, is now Vice-President of the Atlantic Company.

In December, 1893, the Boston Company was bought by the Perth Amboy and New York Companies and the works closed. Mr. Fiske then became for ten years General New England Agent of the New York Company. He has since been interested in the manufacture of face-bricks, and his "tapestry bricks" are well known throughout the country.

The first important building, decorated with terra cotta, made by the Boston Company, was the Grand Exposition Building of the Massachusetts Charitable Mechanics Association, on Huntington Avenue, Boston. It also furnished the work for the Barnum Institute of Science and History, at Bridgeport, Connecticut; the Casino Theatre, and the Potter Building, New York City; the Military Frieze for

the Pension Office, Washington, and the terra cotta for the Soldiers Monuments at Hartford and Baltimore. It also made the faience work for the corridors of the Adams House and the Charlesgate, Boston, and the interior of the Reading Terminal at Philadelphia, very good specimens of glazed work.

The following interesting story of the Boston Terra Cotta Company has been prepared by George M. Fiske, former Manager of the Company:

"As will be seen by the items of my biography, I was a farmer's boy, enlisting in the Union Army at the age of twenty. Returning from the army, I engaged in farming and in trading. In 1870, I entered the employ of James Edmond and Company, manufacturers and importers of fire brick and other clay goods, at 394 Federal Street, Boston. The plant belonged to the Boston Fire Brick Company, and was leased by James Edmond and Company. I remained in their employ until the year 1877, and thus obtained a practical knowledge of the clay-working industry. I then formed a partnership with Eugene B.

Coleman, under the firm name of Fiske and Coleman.

"Sometime in the seventies, Sanford E. Loring had started manufacturing architectural terra cotta in Chicago. He obtained a contract for a large amount of terra cotta for the Boston English High School. Finding it impracticable to supply the material from Chicago, he came to Boston to look up a factory for that purpose. Meantime James Edmond and Company had been obliged by business reverses to default on their lease of the plant, and the Fire Brick Company had taken possession. Loring made a deal with them for the use of a part of their plant, and so completed his contract with the City of Boston. This, I think, was almost the first architectural terra cotta manufactured in New England. It aroused considerable interest among the architects and builders of Boston, and two young men, Harry A. Lewis, brother of a prominent Boston architect, and Charles G. Wood, leased one of the Fire Brick Company's kilns and continued the manufacture. After some ten or twelve months they left Federal Street and built a new plant at South Boston. Meantime Fiske and Coleman were doing a growing and profitable business, and

in 1879 the Fire Brick Company came to them with a proposition the result of which was that the two concerns were merged under the title Boston Fire Brick Works, Fiske and Coleman, Managers. In the employ of Lewis and Wood, as Superintendent, was an Englishman by the name of James Taylor. He had had considerexperience in the manufacture of terra cotta in England, was a good talker, a great believer in the future of terra cotta, and very selfconfident as to what he could do for it and with it. In the fall of 1880, Taylor left Lewis and Wood and came to us with a proposition to again start the manufacture of terra cotta at Federal Street, with himself as Superintendent. His proposition was favorably received, and in October, 1880, the Boston Terra Cotta Company was incorporated, with a capital of $10,000, afterwards increased to $50,000. All the incorporators were stockholders in the merger corporation. Captain R. G. F. Candage was elected President; James Edmond, Treasurer, and James Taylor, Superintendent. Taylor was an enthusiastic terra cotta man, and an indefatigable worker. He had a small farm in New Jersey where his family lived and he spent nearly every week-end there. As our principal market was in New York, Phila-

delphia, and contiguous territory, he would often go over on Wednesday or Thursday night, and spend a day or two with the architects and contractors of New York and Philadelphia. He made all the estimates and practically closed all the contracts.

"At the end of the first year, it was found that the company had sustained quite a loss, and a reorganization was recommended. Captain Candage was continued as President, but only as presiding officer at the meetings. The treasurership and general management of the business was assigned to me, and these offices I retained until the liquidation of the company in 1894. Taylor remained with us until 1886, when he induced some New York parties to organize the New York Architectural Terra-Cotta Company with himself as Superintendent. His leaving appeared to be a serious blow to us, as we had just obtained some important contracts. Fortunately, however, I had anticipated this move on his part, and had spent considerable time in familiarizing myself with the manufacture, and with estimating. I secured the services of William H. Junge, as Superintendent. Junge had been with the Chicago Terra Cotta Company for some time, and had proved himself a faithful

and able Superintendent. We opened an office in New York with John G. Evatt in charge. Evatt was an Englishman with considerable experience in this line of business, and had been in our employ for some time. His two sons, Frank and Walter, who subsequently became quite prominent and successful in the terra cotta business, were also in my employ at that time. We also opened an office in Philadelphia with O. W. Ketcham in charge. I visited these offices, as a rule, once a week, going over to Philadelphia on the night train, spending the forenoon there, the afternoon and evening in New York, and back to Boston the next morning. And so the Boston Terra Cotta Company held its own in competition with New York, New Jersey and Philadelphia companies. And right here I take pleasure in saying that this competition was of a most courteous and honorable nature. We formed an Association, which I believe continued for some years, and among my pleasantest recollections with terra cotta, both business and social, are my relations with the terra cotta fraternity.

"As before stated, our principal market was in New York, Philadelphia, and vicinity, but business came from all over the country, and

the product of the Boston Terra Cotta Company can be found today in nearly all the large cities east of the Rocky Mountains. Freights were against us in the greater part of our business, but these were pioneer days in this manufacture: demand was good and prices often ran as high as $100 per ton.

"In those early days, there was no conception whatever of the artistic colors and forms which were later developed by the joint study and effort of architect and manufacturer. The early demand was almost entirely for red terra cotta, but before the liquidation of our company in 1894, the development had achieved notable progress. My own principal contribution was in the line of Fire Flashed Terra Cotta, 'Pompeian' and 'Old Gold,' made of fire clay and burned under intense heat. The manufacture of this quality and color of terra cotta was continued at South Boston by Fiske and Company, successors to Fiske and Coleman, some years after the liquidation of the Boston Terra Cotta Company. A notable example of this product is the Youths Companion Building, at the corner of Columbus Avenue and Berkeley Street, Boston.

"It will thus be seen that the Boston Terra Cotta Company was one of the pioneers in the

manufacture of terra cotta in the United States.

"In 1894, having secured the agency of the New York Architectural Terra-Cotta Company for New England, we discontinued manufacturing, and I liquidated the Company. The financial history of the Boston Terra Cotta Company is one which I can recall with some satisfaction. I paid my stockholders large dividends, and returned to them every dollar of their capital."

CHAPTER V

TERRA COTTA IN NEW YORK

DURING the first half of the last century the City Hall Park in New York extended as far south as Barclay Street. At a later date the southern end was ceded to the United States Government, and that architectural monstrosity, the United States Post Office, was erected on the site from plans of A. B. Mullet, the worst Supervising Architect the Treasury Department ever possessed. In the collections of the New York Historical Society there are fine old prints showing the City Hall Park as it then looked, and as we hope it may again look in the near future. As one walked up Broadway

in those days the view of the lovely City Hall was entrancing in its beauty. The southern end of the Park was graced by willow trees and a greensward. The homes of fashion were near by, and here were the gay shops and hotels. On the left was the Astor House, the last word in luxurious living. From its windows one could see the marvelous fountain with its jet of pure Croton which rose seventy feet in the air. On the next corner, in a fine old mansion on the site now covered by the towering Woolworth Building, lived Philip Hone, the most courtly Mayor that New York ever had. Across the southern end of the Park, where the Park Row Building now stands, was the Park Theatre, where the famous Mr. Hone went of first-nights carrying his gold-headed cane. In this theatre the first performance of Italian Opera in America was given, 29 November 1825.

At the fête to celebrate the opening of the Croton Water Supply in 1842, thousands of persons joined in a procession which swept to the flashing fountain and was seven hours in passing. The unsightly wooden fence

which had enclosed the Park was removed in 1822, and at great expense a wrought iron railing was imported from England to replace it. At the southern end there was erected an imposing gateway flanked with marble pillars. On the top of these columns, in May 1827, were placed four cannon balls of granite brought from Europe by Commodore Decatur. According to another account, these balls were taken from the ruins of ancient Troy, and were presented to the city by Captain John B. Nicholson. But be that as it may, when the columns were later removed, they were transferred to Union Square, from which they disappeared, cannon balls and all.

On the east side of the Park, in the triangular block bounded by Park Row, Beekman and Nassau Streets stood the old Brick Presbyterian Church, erected in 1768. Early in the fifties the Church decided to move uptown to 37th Street and Fifth Avenue, where in 1858 an exact reproduction of the older edifice was built in brick and brown-stone, but on a larger scale. The former site was offered for sale, but it was not easy to find a pur-

chaser owing to a condition in the original deed of gift which provided that the ground should always be used for church purposes. Finally, in 1854, the site was bought by George Jones, the publisher of the "Times," who had sufficient influence with the city government to have the title cleared. The Church did not give possession until the first of June, 1856, the last service being held 25 May, in that year.

The south end of the plot was sold by Mr. Jones to Orlando B. Potter, who had then recently moved from Boston to New York, and he tore down the old church and erected a five-story business building of buff sandstone, his first real estate venture in the city. This building was generally known as the "World Building" from the fact that that newspaper, founded in 1860 as a semi-religious journal, was published there for many years. The balance of the block was improved by George Jones, who in 1857 put up a similar building for the occupancy of the "Times."

There is an old tradition in England that a

secular building erected on consecrated ground will come to an untimely end, and such proved to be the case in this instance. The last day of January, 1882, the "World Building" was entirely destroyed by fire, with the loss of several lives. Mr. Potter was very savagely attacked by the "World" and "Times" for owning such a non-fireproof structure. He was so sensitive on the subject that he made up his mind, when he rebuilt, to have the most durable and fireproof structure in the city. During the next two years he personally conducted numerous experiments to determine what were the most weather-resisting and fireproof materials, and finally decided to use brick and architectural terra cotta for the new Potter Building.

A great increase in the construction of brick buildings had followed the great fires of Chicago and Boston, which had conclusively demonstrated that fireproof buildings could not be built of unprotected stone or iron, and that only brick and terra cotta walls were practically fireproof. This increased use of

terra cotta as a constructive and decorative material in connection with brick work revived the demand for its manufacture in or near New York. The real renaissance of architectural terra cotta, however, did not reach the city until the year 1877, nor did the clay manufacturers in that neighborhood give any indications prior to that date of taking any great interest in this branch of the business. In the meantime the demand for terra cotta had been steadily circling towards the metropolis, each year getting nearer. Architect Sims, of Philadelphia, had used it in the construction of a new chapel for Grace Church in that city. Stone and Carpenter, architects of Providence, had proved its value on several residences, and especially upon the Providence City Hall. But the architects of New York seemed to have resolved, after the unfortunate essay of Mr. Renwick in 1853, not to again venture upon any trial of its availability for their purposes.

Finally, in 1877, a residence was built for a Mr. Braehm on the north side of 36th Street, just west of Park Avenue, from designs of

George B. Post, architect, in which terra cotta was quite extensively used, both for decorative and constructive purposes. The mason contractors were Smith and Prodgers, and their foreman, Isaac Whitenach, set the material in place. The terra cotta, which was red in color, was made in Chicago. It is noteworthy that the first terra cotta used in New York, in the neighborhood of which red-burning clays abound, should have been made at a plant where buff work was the standard, and which had to get its red-burning clays from Galesburgh, Illinois, or from Akron, Ohio, both of which clays were used on this work.

The work was set in place under the supervision of James Taylor, who was engaged by the Chicago managers for the purpose, as they were anxious that this their maiden effort in the City of New York should prove a success. The work was still in perfect condition when the house was demolished a few years ago to make place for the Library of the late J. Pierpont Morgan.

The first important New York building in

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which terra cotta was used was the Morse Building, northeast corner of Beekman and Nassau Streets, erected in 1879. This was a solid handsome structure of nine stories. The owners, the two Morse brothers, and their architects, Silliman and Farnsworth, were influenced in their choice of material by the fact that in the great Chicago and Boston fires, brick and terra cotta had proved to be the only fire-resistant materials. Part of the terra cotta was made at the Chicago plant, and part at the branch of their works in Boston.

The first terra cotta plant to be established within the limits of the present New York City was the Long Island Terra Cotta Works, organized in 1879, the same year that the Perth Amboy Company was incorporated. It was located at Ravenswood, Long Island City, about four city blocks south of the present works of the New York Company. The site was a most central one, on the East River, with a good water frontage, opposite 53rd Street, New York, and easily reached by the three ferries from the city or by the horse cars from Brooklyn. It came closer

than Perth Amboy and promised to be a dangerous competitor for the city business.

The chief promoter, who planned and erected the factory and manufacturing plant, was Rudolph Franke, who had had some experience in the terra cotta works of Ernst March, at Charlottenburg (Berlin), in Germany, and who had also been employed for some time as Assistant Superintendent at the Perth Amboy works.

The undertaking, however, did not succeed, and the works were closed at the end of eighteen months. Whatever measure of success did fall to the Long Island Works was mostly due to the earnest labors of John A. Fincke, who afterwards went to the Indianapolis Terra Cotta Works. John A. Fincke was well known to architectural terra cotta manufacturers as a painstaking, careful worker, giving his whole study to the laying out of details and construction so as to best meet the difficulties of the material. It may be said that no man could have more faithfully served his employers according to his ability than he did, and after the works were

closed he always retained the esteem of the Franke Brothers.

In 1883, two years after the withdrawal of Alfred Hall from the Perth Amboy Company, he founded the A. Hall Terra Cotta Company, with the following officers: Alfred Hall, President; Eber H. Hall, Vice-President, and Fred C. Greenley, Treasurer. Robert W. Taylor was the Superintendent. A new factory was built at Perth Amboy very near the site of the old works. This company was always handicapped by the lack of sufficient working capital and had rather an unsuccessful career. In April, 1887, shortly after the death of Alfred Hall, the Company went into liquidation. The plant was leased in 1889 by the Perth Amboy and New York Companies and the works finally shut down.

From among the many buildings furnished by these works, we select the following as worthy of mention: Williamsburgh Fire Insurance Building, Broadway and Liberty Street; German Lutheran Church, West 35th Street, and the Ovington Store Building, Brooklyn.

Early in the eighties the Burns-Russell Company of Baltimore undertook the manufacture of terra cotta on a small scale. This concern had long been celebrated for the excellence of its face bricks. There are several buildings in New York City decorated with their terra cotta, all of very fair quality.

From the above narrative it will be seen that when bids were asked for the terra cotta in the new Potter Building, there were five companies in the East ready to estimate on the work:

Perth Amboy Company, Perth Amboy
H. A. Lewis Works, Boston
Boston Company, Boston
A. Hall Company, Perth Amboy
Burns-Russell Company, Baltimore

The contract, amounting to over five hundred tons, was secured by the Boston Company.

In King's "Handbook of New York City," published 1892, the Potter Building is thus described:

"It is one of the tallest of the office buildings around City Hall Park, and is of extraor-

dinary height. It has eleven stories, and was the first building in the midst of the great newspaper section to be erected of such a height. The Potter Building possesses two unusual features: first, it was the first office building erected in this city which was ornamented elaborately with terra cotta; second, it was the first to have the iron and stone work covered with hollow brick as a protection against fire. It is one of the most substantially constructed and fireproof office buildings in the city. The owner so ordered its construction that it would endure practically forever."

It might be added that the Potter Building was the last skyscraper to be erected in New York which did not employ the modern skeleton steel construction which the George A. Fuller Company had introduced in Chicago a short time before, and which was coming into use in New York, but which Mr. Potter was too conservative to adopt.

In this connection it is interesting to note that the first building of modern steel construction erected in New York City was the Tower Building at 50 Broadway, built by

Bradford L. Gilbert, architect, in 1886. This was razed several years ago by the Standard Oil Company, and replaced by the Standard Arcade. On this same site a small block-house was erected in 1612, the first structure built by Europeans upon the island of Manhattan, and this date is the one usually given for the first settlement of New York. The adjoining property on the north, known as the Exchange Court Building, was sold in September, 1919, by Captain John Jacob Astor, a son of Lord Astor, to Robert E. Dowling of the City Investing Company.

All of the property located in this section of Broadway abounds in historical interest. Here was situated in 1677, "Mr. Rombout's Well," for many years considered one of the principal fire protections of the city, and not abolished until 1806. At Number 26, for many years the headquarters of the Standard Oil Company, was the residence of General Alexander Hamilton, the first Secretary of the Treasury. Early in the last century, Governor Jay erected a large stone house at Number 52, which was then considered a great ornament

to the street. In 1852, this whole plot was occupied by the United States Bonded Warehouse, which was later changed into an office building known as Exchange Court, which was occupied by Governor Flower and many prominent brokers. Early in the present century, this building was torn down and replaced by the present structure. The proportions of the new building and the architectural treatment of the facade were widely commented on at the time. The architect was influenced by the association of the site with early New York history, and he placed on a cornice above the first floor gigantic statues of men prominent in the affairs of the city under Dutch rule. One of them is the stern and haughty figure of Peter Stuyvesant, the last Governor of the City.

The New York Company

The awarding of the contract for the Potter Building to the Boston Company led indirectly two years later to the founding of the New York Company. James Taylor, of the Boston Company, was frequently in New York

supervising the setting of the terra cotta, and had numerous opportunities of meeting Mr. Potter, who always personally looked after the construction of his buildings. Taylor at that time wanted to leave Boston and come to New York, and he finally succeeded in convincing Mr. Potter that there was an opening for a new terra cotta company in New York, and the result was the incorporation in January, 1886, of the New York Architectural Terra-Cotta Company.

A large plot of ground containing nearly five acres was purchased on the East River immediately adjoining on the south the present location of the Queensborough Bridge, which was built many years later. At that time the present Long Island City in the Borough of Queens consisted of three towns or cities known as Hunter's Point, Ravenswood and Astoria. The river was then lined with handsome old mansions, with grounds sloping down to the water. Astoria was so named from the fact that the Astor family at one time had a fine country place in that locality.

Walter Geer

The President of the New York Company was Walter Geer, a lawyer by profession, who for three years before had been Assistant General Manager of the Chicago office of the Walter A. Wood Mowing and Reaping Machine Company. The Vice-President was his father, Asahel C. Geer, also a lawyer, who had just retired from active business, after being for eighteen years the Manager of the Wood Company.

The Treasurer was J. Maus Schermerhorn, of Syracuse, where he had occupied a similar position with the Sweet Manufacturing Company. The Secretary was Herman L. Matz, of Chicago, who afterwards returned to his native city where he has since been prominent in the pressed brick business.

The construction of the new plant was begun 1 February, 1886, and on the 10th day of May following the main building was under roof and the first kiln of terra cotta burned.

Walter Geer remained the President of the New York Company for thirty-three years, from 1886 to 1919, when he retired to take

the position of Chairman of the Board of Directors.

A. C. Geer was Vice-President until his death in 1902 in the eightieth year of his age. Although he was never active in the management of the Company, he always attended the meetings of the directors and was prominent in the councils of the Company. His position was really that of Chairman of the Board, an office which, though common in England, was hardly known here thirty years ago.

Mr. Geer was succeeded as Vice-President by John Alvin Young, then President of the Windsor Trust Company. On his retirement in 1907, Ferdinand C. Townsend, a well-known public accountant, took his place, and is still with the Company.

The first Treasurer, Maus Schermerhorn, only remained with the Company for a few years, when he left to take a banking position. He was succeeded by the Assistant Treasurer, James R. Owens, who had been with the Company almost from the start. After about fifteen years, Mr. Owens was obliged to give up his position on account of

failing health. He was succeeded by Richard F. Dalton, who occupied the office until he was elected President in 1919. Mr. Dalton was born in Ireland, and came to this country at an early age. He learned stenography, and began with the Company in that capacity. He also studied law and was admitted to the bar, and for the past ten years has handled all of the legal business of the Company in addition to his other duties.

Two other young men have been very prominent in the affairs of the Company during the last ten years. Walter Geer, Jr., entered the employ of the Company after graduating from the Sheffield Scientific School at Yale in 1911. He learned the business both from the factory and the office end, and for several years now has been Vice-President in charge of the Sales Department, and is now also Treasurer of the Company. The other was Fred B. Ortman, a graduate of Ohio State University, and one of the leading Ceramic Chemists of the country. After being with the New York Company for over five years, he went to Chicago to take charge

of this department of the Northwestern Company.

John Geib, who is now the Secretary and City Sales Agent, has been with the Company since the start. He has a most genial and attractive personality and is well and favorably known to every contractor in the city.

The first Superintendent, James Taylor, remained with the Company for seven years, when he retired to his little farm in New Jersey, where he spent the rest of his life. Taylor was a man of great energy, of much practical ability, full of confidence in himself and his work, and a most persuasive talker. It was due mainly to his ultra-conservatism that he failed to achieve a greater measure of success. Like the Bourbons, "He never learned and he never forgot." He was unable to adapt himself to changed conditions and improved methods. Therefore, he was left behind in the race by men younger and less-experienced than himself. Nevertheless, American manufacturers owe him a great debt of gratitude for what he did for terra cotta in this country.

The following tribute to Mr. Taylor is from a letter of Karl Mathiasen: "As an administrator, Taylor very likely would not meet present day requirements, but he had more academic knowledge of terra cotta than any man in the business at the present time. He was the pioneer of terra cotta in America. He cleared the way. He has left much good work behind him."

Taylor was succeeded by Ira L. Conkling who only stayed one year, when he left to start the Conkling-Armstrong Company. The next Superintendent was Thomas Cusack, previously the head draftsman. Mr. Cusack was a very erratic genius, possessed of much academic and practical knowledge of terra cotta. He wrote some very valuable articles on the subject which were published in the "Brick-Builder" and attracted wide and favorable attention. When he retired, and returned to his old home in England, John Clark, who had been with the Company from the first as Foreman Presser, and Assistant Superintendent, was made Superintendent. Clark is well-known as one of the ablest and

most experienced practical men in the business.

To two men in particular the Eastern manufacturers of terra cotta owe an enormous debt of gratitude. One was George B. Post, the first New York architect to extend a welcoming hand to the new terra cotta workers, and it was a great piece of good fortune for them that they received their introduction from so eminent a gentleman and architect. The other was Orlando B. Potter, one of the most extensive real estate owners in New York City, and one of the founders of the New York Company, who employed terra cotta largely in all of the numerous buildings which he erected, and did much by his example, and also by his advocacy of the material on all occasions, to promote and encourage its use.

CHAPTER VI

THE BROWN ASSOCIATIONS

IN the earlier years of the terra cotta business in New York the offices of all the companies were located down town in the vicinity of the City Hall. The offices of the New York Company were on the eleventh floor of the new Potter Building, looking out on the City Hall Park. The Perth Amboy office was on the Vesey Street side of the Astor House facing old St. Paul's Church Yard. At that time the Astor House was not so popular as formerly with the traveling public and a large number of rooms had been rented for business offices.

Soon after the first of April, 1886, when

Walter Geer arrived in New York to assume his new position with the New York Company, he made the acquaintance of William C. Hall, and one day Hall invited him to luncheon at the Astor House. After the luncheon, they went upstairs to the Perth Amboy office to talk over a little scheme which Hall had in mind. The main office of the Perth Amboy Company then and afterwards was at the works, but the Company had a city sales office in charge of Oswald Speir. Speir was a very handsome, attractive young man of about twenty-two years of age, who had begun with the Company five years before at the foot of the ladder and by sheer ability had worked his way up to his present position. He is now the General Manager of the Los Angeles office of the Gladding and McBean Company, of San Francisco.

At that time Hall was about thirty years of age and in the flower of his youth. At Yale, where he had graduated eleven years before, he had been a member of Bob Cook's celebrated crew, and had also rowed in the single-scull race at Saratoga. He was a young man of

very fertile imagination, of great mental activity, although rather lazy physically, and had a most attractive personality. While he was not endowed with the brilliant analytical mind of his brother "E. J.," Will Hall realized to the full the commercial value of friendship, and that was the great secret of his success. While many of his contemporaries buried themselves in dingy offices or shops and allowed business cares to worry them into nervous prostration, Hall spent much of his time at the University Club, cultivating friendships which were an invaluable asset in his business. He never attempted to do anything which a clerk could do for him, and he did his own work well because he did not try to do anything else. In all this he followed the precept of Andrew Carnegie, who once said: "More big contracts are closed over nuts and wine than across a desk."

Hall began the conversation by saying that the entire terra cotta business in the East did not exceed half a million dollars a year, and that his Company alone could do nearly that amount. Realizing this situation, Fiske and

Lewis had started some time before in Boston a very crude form of "Open-price" system. They would meet once or twice a week and talk over the various jobs, and if one could not convince the other that he was entitled to a certain contract, the matter was settled by lot.

In the early Winter of 1886, a meeting of terra cotta and moulded brick manufacturers had been held at the Perth Amboy office in the Astor House to discuss certain labor demands which had been made, and also, if possible, to effect some kind of an organization. There were present representatives from Perth Amboy, Boston and A. Hall, and also of Fell and Roberts, of Trenton, James Beggs and Company, of Wilmington, and Burns, Russell and Company, of Baltimore. One or two other meetings were held, but no action was taken, and the labor troubles having disappeared, the idea of any organization between the manufacturers was given up. Since then Hall had been working on an elaboration of the Fiske and Lewis scheme which he thought would help the business very materially. As a result of this interview with Walter Geer, and fur-

ther conferences at which all the other parties interested were present, the plan was fully worked out and finally adopted, and the "First Brown Association," as it was afterwards named, began operations with offices in the Vanderbilt Building, 132 Nassau Street. The clerk in charge, or "Agent" as he was called, was a young lawyer named H. W. Helfer. The members of this Association were Perth Amboy, New York, Boston, Lewis and A. Hall. There was an elaborate set of "Rules" which were added to or modified from time to time as occasion demanded, and which were finally printed for convenience of reference. The arrangement on the whole worked very well, and certainly stabilized the business.

The representatives of the various companies who attended these earlier meetings of the Brown Association were usually Oswald Speir or Harry Powell from the Perth Amboy Company; Edward S. Henry, and later Miss Tenney, for the New York Company; I. B. Hill, of the Boston Company; "Bram" Lewis, a brother of Harry Lewis, for the Lewis Works and "Gil" Hall, for the A. Hall Company.

I. B. Hill was later with the Excelsior Company, and then up to January 1918, with the Atlantic Company.

At that time, the representative of the Boston Company in New York was Robert R. Bishop, Jr., who was a typical Bostonian. Later he was succeeded by John G. Evatt, who had been in the employ of the New York Company at the works, and who was the father of Frank G. Evatt, now Vice-President of the Atlantic Company. The Boston office was then in the new "Times" Building. Harry A. Lewis, who spent about half of his time at the Gilsey House, in New York, was his own representative in the city.

All went well with the Association for two or three years, and then its success was jeopardized by very serious competition from a new Philadelphia concern. In October, 1886, two young modellers named Frank and Harry Stephens, with Lucien B. Leach, had established the firm of Stephens and Leach. Leach had then recently graduated from the University of Pennsylvania as a mining engineer. They built a factory on leased land at 46th

Street and Girard Avenue, and began to make terra cotta. The Stephens brothers had lots of grit and energy, but very little experience. This lack was supplied in the following Spring when they took into their firm Ira L. Conkling, one of the ablest practical men ever known in the business, whose untimely death a few years ago was much regretted by all of his old associates. A year later another promising young man came into the firm, a brother-in-law of Conkling's. His name was Tom Armstrong, a genial, whole-souled young Irishman, who has come to be known and loved by all terra cotta men from coast to coast. The firm's name then became Stephens, Armstrong and Conkling.

The first large contract the young concern figured on was the Library for the University of Pennsylvania. At this time Lewis had sold his business in Boston and become the Philadelphia agent of the Perth Amboy Company. So Lewis came over from Philadelphia to attend the Brown meeting, and told everybody how he had scared the Perth Amboy Company some years before into cutting its bid ten per

cent on the Produce Exchange, when he could not possibly have done the work, and that it would be foolish to try and meet the new competition, as it was only a bluff. But the bluff worked, and Philadelphia got the order at a good price and made a large profit. Then came the Drexel Institute, followed by the addition to the Broad Street Station, both large contracts. Again there was the same discussion in the Brown Association, the same decision to stand pat, and the same result, both orders going to Stephens, Armstrong and Conkling.

The failure to secure the Pennsylvania Station was a sad blow to the Perth Amboy Company, which had made the terra cotta for the original building, and Hall decided that some action must be taken to get the situation in hand. So he and Geer put their heads together and worked out the plan which led to the formation of the Second Brown Association.

At this time there were only four members of the Association, Lewis having retired, and one outsider, the Philadelphia concern. As

terra cotta is naturally a competitive business, it was thought best to keep the Perth Amboy and New York Companies as independent competitors. The other companies were to be eliminated.

The first move was to control the A. Hall Company, which had practically shut down in 1887, after the death of Alfred Hall, but was a possible danger spot so long as the plant remained in existence. So the works of that Company were leased for three years, and the lease was twice renewed. At the end of the nine years the Company disbanded.

The second step was the purchase by Perth Amboy and New York jointly of the business of the Boston Company. The negotiations for this arrangement were protracted over many months, and Hall and Geer made many weary trips to Boston. Over and over again, when all the terms seemed arranged, Fiske came back with some new proposition. Finally, one day, Geer reminded him of the old story of the "Farmer and the Darning Needle." It was in the days of barter in trade, and a Farmer comes into the country store with a fresh-laid egg,

which he wants to trade for a darning needle. The Storekeeper agrees, and the articles change hands. Then the Farmer says: "Ain't yer goin' to treat?" So the Storekeeper brings out a jug of hard cider and fills a glass. "Ain't yer goin' to give an egg with that 'ere drink?" says the Farmer. So the egg is broken and dropped in the glass. The egg turns out to have a double yolk, whereupon the Farmer demands another darning needle!

Fiske saw the point, and the deal was finally closed. As a part of the arrangement, Fiske became the General New England Agent of the New York Company under a ten-year contract.

Last of all an agreement was made between the New York Company and Stephens, Armstrong and Conkling of Philadelphia by which the latter firm was to be run as a branch of the former Company. New York was to conduct the selling end of the business, and the orders were to be executed at the two plants, the manufacturing and financial departments being entirely distinct and separate. Frank Stephens became the Treasurer, and Ira Conk-


Thos. J. Armstrong

ling the Superintendent of the New York Company, and Harry Stephens and Tom Armstrong were, respectively, Sales Agent and Superintendent at the Philadelphia Works.

These arrangements were finally consummated at the end of 1893, and the Second Brown Association began business 20 December in the Havemeyer Building on Cortlandt Street, with Thomas Van Every as Agent. For nearly two years, Perth Amboy and New York were the only members. At the end of that period Standard and White were taken in.

The Standard Company had been founded at Perth Amboy in 1890 by five practical men. It was first called the Architectural Terra Cotta Works, but the name was afterwards changed on account of the similarity to the name of the New York Company. In 1892 it was incorporated under the name of Standard Terra Cotta Company. W. L. Farroat was President; H. P. Englehardt, Treasurer, and O. W. Peterson, Secretary. The Company failed in 1898 and was taken over by Henry Doscher, who had made a fortune in the sugar business in Brooklyn. The business was con-

tinued under the name of Standard Terra Cotta Works (not incorporated), with A. Bollschweiler as Manager. In 1907 it was taken into the Atlantic Company.

The White Company, which began operations in 1888, was first known as the White Brick and Art Tile Company. In October, 1892, it was incorporated as the White Brick and Terra Cotta Company. The works were at Clayton, Massachusetts, near the Connecticut border, and the clay found there burned white, hence the name. It was soon found, however, that the clay was too refractory to be burned in muffled kilns, unless mixed with a buff clay, which had to be brought from New Jersey. This made the cost of manufacture so high as to be prohibitive, and after losing a great deal of money the Company finally discontinued operations early in the present century. Charles Siegler, who had made a fortune with the P. Lorillard Tobacco Company, was the President, and W. Irving Kent the Vice-President.

CHAPTER VII

THE ROMANCE OF A CONTRACT

LOOKING backwards over more than a third of a century of experiences in the terra cotta business, there is one contract in particular which stands out distinctly from the thousands of others—not because it was unusually large, for it was not, but because of the beauty of the building, the fame of the architect, and the fierce competition for the order between the two leading Companies in the East.

A pamphlet published in 1855 by Moses Yale Beach, then proprietor of the "New York Sun," on the "Wealthy Men of New York,"

records the names of nineteen citizens who in the estimation of well qualified judges at that date possessed more than a million dollars each. In that list the elder Cornelius Vanderbilt, generally known as the "Commodore," is accredited with a paltry million and a half. In 1865, Vanderbilt's fortune, consisting chiefly of a fleet of steamboats, amounted to about ten millions. He died twelve years later in 1877, leaving over one hundred million dollars, the first of those colossal American fortunes that were destined to astound the world.

Vanderbilt was one of the most romantic figures in the history of American finance, and the work that he did remains as a part of our economic organization today. Born in 1794, he was seventy-one years of age in 1865, when the real work of his life began. At the close of the Civil War, a trip from New York to Chicago meant that the passenger changed cars seventeen times, and that all freight had to be unloaded in the same number of places, carted across towns and reloaded into other trains. By 1868 the Commodore had acquired the

Hudson River Railroad extending from New York to Albany, the New York Central extending from Albany to Buffalo, and the Lake Shore which ran from Buffalo to Chicago, and cut down the running time from New York to Chicago from fifty to twenty-four hours. His great fortune was made by engineering large stock-watering operations, and taking advantage of inside information to make huge winnings on the stock exchange.

In its original estate the Madison Square Garden was the station of the Harlem Railroad, in those almost forgotten days when the Harlem was a formidable rival of the Hudson River for traffic to Albany. The trains at that time came to 42nd Street by steam, where the cars were uncoupled and drawn by horse power through the Park Avenue tunnel, now used by the "green cars," down Fourth Avenue to the terminus at 26th Street. The only passenger station of the Hudson River road was then at 30th Street and Tenth Avenue.

In 1871 the first Grand Central Station was finished, at that time considered to be the last word in railway architecture, but almost as

ugly in reality as the Government Post Office down town. When the new terminal was opened the old passenger station was abandoned. The building was remodelled, and used for the annual Horse Show, Barnum's Circus and similar attractions. It was at one time called Gilmore's Garden, because of a series of popular concerts given there under the direction of the famous band-master P. S. Gilmore.

In 1889, J. Pierpont Morgan, Charles Lanier, Darius O. Mills, Charles Crocker, and a number of other wealthy and public-spirited citizens, formed a syndicate to purchase the site and erect the present Madison Square Garden, and Stanford White, of the well-known firm of McKim, Mead and White, was selected as the architect.

Stanford White was a man of unusual force, a personality of rare power. In advance of any of his contemporaries, he inaugurated a revolution in American architecture, which in a few years reached and influenced the whole nation. Art in any of its forms requires the

co-operation of many minds and many hands. Stanford White was just the man to become a leader in a movement of that kind. He had the vitality of a giant, the divine gift of a Disraeli or a Roosevelt for making himself known and talked about. It takes a certain kind of talent to do these things. Popularity is a gift, but it is also a profession. White had the flair of the born actor for finding the centre of the lime-light. Not a day passed without the public hearing something new about him. His flaming red head was in evidence on every occasion. For the last twenty years of his life he was the predominating influence not only in architecture but in everything connected with the arts of design and decoration. He was the greatest designer that this country has ever produced, and yet after all he was rather an adapter and interpreter than an originator. By a rare stroke of good fortune he was professionally associated with two men of opposite mental types—with Charles F. McKim, an artist, and William R. Mead, a master-builder. To the firm of McKim, Mead and White, American architecture and architec-

tural terra cotta owe an impetus which is felt even to the present day.

The Perth Amboy Company, as related elsewhere, had been the outgrowth of an old firebrick concern, and the manufacture of bricks continued for many years to constitute a large part of its business. The bricks were mostly of two kinds: a long thin mottled brick burned in the old open kilns and known as "Pompeian," and a regular sized face brick of a rich buff color, burned in the muffled kilns. William C. Hall used to relate with great glee how he had bought an old church down in Jersey for the sake of the vein of fine buff clay underlying it, and from this clay bed nearly all of their buff clay was drawn for many years. The representatives of the Company used as a leading sales argument the fact that only the Perth Amboy Company could furnish for a building both bricks and terra cotta made of the same clay, thus insuring absolute uniformity of color. This advantage undoubtedly appealed to the artistic sense and taste of a man

MADISON SQUARE GARDEN

like Stanford White, and for many years Perth Amboy secured all of his contracts.

In this connection the following sketch, written by Mr. Putnam, is of interest:

"When the Perth Amboy Company secured the contract for the terra cotta for the Post Building in 1882, they were also given the contract for the buff brick to match the terra cotta. These were the first front brick manufactured by the Company, and notwithstanding the long experience the management had had in the manufacture of fire brick, the same difficulty occurred of pink color as in the terra cotta. Later, in 1883, this difficulty having been overcome, the Company was awarded the contract for the buff terra cotta and buff brick in the Metropolitan Opera House.

"In 1886, a 'Telephone' brick was made to match the terra cotta in the Telephone Building, and these bricks were used in a number of buildings, the most prominent being the New Netherland Hotel, Fifth Avenue and 59th Street.

"About this time 'Pompeian' and 'Old Gold' brick were brought out to match terra cotta of these shades and for several years there was an excellent and growing demand.

Then other manufacturers placed on the market an imitation made by spraying on the surface granulated manganese, that gave a similar, though greatly inferior, appearance. This finally led to a decreased demand.

"Finally, with increasing competition, and lower prices on the buff and other 'terra cotta' brick, the Perth Amboy Company decided to discontinue the manufacture of brick, excepting in cases where specified, as were the glazed brick in the New York 'Times' Building, Times Square."

This situation led the Directors of the New York Company, soon after it was organized, to seriously consider also going into the manufacture of face bricks on a large scale. At that time, a new brick press had been invented by an old Army officer, residing at Wilmington, Delaware, who had commanded a regiment of cavalry on the Union side during the Civil War. He was a kind of "Colonel Sellers," and succeeded in impressing men who knew nothing about the clay business with a sense of his information on the subject. At Washington, he organized the National Press

Brick Company, in which he succeeded in interesting a number of prominent men, including E. Francis Riggs, the President of the old Riggs Bank, Joseph K. McKammon, a leading lawyer, Asahel C. Geer, a retired business man spending his winters in Washington, and Dr. M. L. Ruth, a surgeon holding high rank in the United States Navy.

Dr. Ruth at that time was a very handsome, striking looking man of about forty, with iron gray hair and moustache, and endowed with a most captivating personality. It is hardly too much to say that he was loved by every man, woman and child who knew him, and that by the fair sex in particular he was simply adored. Ruth, who knew nothing about the brick business, was made Manager of the new Company, and the others interested, with the Colonel, made up the Board of Directors. A plant was established near the Virginia end of the Long Bridge opposite Washington. Some of the Directors of the New York Company were in favor of adopting the new brick machines, but, fortunately for the Company, wiser counsels prevailed. The National Com-

pany soon failed and the stock-holders lost their entire investment. Ruth then became the Washington Agent of the New York Company, and two young men who had been connected with the brick concern, Otto C. Reinecke and Harry J. Lucas, were given positions with the New York Company, which they held for many years.

When the Madison Square contract came up, Dr. Ruth was called upon to assist the New York Company in securing the order. One of his first steps was to arrange a theatre and supper party in Washington, at which the guests were the great New York Architect, General Harry Bingham, Member of Congress from Philadelphia, and Walter Geer. A box was secured at the old National Theatre on E Street near Willard's Hotel. The play was "Pygmalion and Galatea," and the rôle of the lovely statue was taken by Mary Anderson, then in the height of her youth and beauty.

After the theatre there was a supper at Harvey's. Harvey had come to Washington shortly before the War, and opened a little oyster bar. His great specialty was steamed oysters,

served in the shell, and eaten with melted butter seasoned with salt and pepper. He soon made a fortune, and built an oyster palace on the south side of the Avenue. That evening there were only three courses and only three drinks, but let no one imagine that the party went home either hungry or thirsty. After the cocktails there was served to each a peck of steamed oysters. The second course was diamond-back terrapin à la Maryland Club, and cooked according to the recipe of that celebrated home of good-living. This was followed by canvas-back ducks, roasted to a turn, so that when carved "the blood followed the knife," as "Colonel Carter" would say. With these two courses each guest was served with a bottle of Ruinart, and of old Château Lafitte from the cellars of the Metropolitan Club.

A little later, Dr. Ruth came over to New York, where he arranged an interview with Frank Hopkinson Smith, a great friend of the Architect, as well as of Ruth. The conference took place at Smith's office in a downtown sky-scraper near Wall Street. Smith was a most

charming man, and one of the most versatile ever known. Besides being a great engineer and light-house builder, he was a painter and author, and one of the best readers of his own works known since the days of Charles Dickens.

At this stage of the game, Hall began to wake up and take notice. In the words of the Irish Member of Parliament who said "I smell a rat, I see it floating in the air, but I will nip it in the bud," Hall decided that something must be done and done quickly. So he invited Geer out to luncheon and exhausted his stock of arguments in the endeavor to persuade him to give up the fight, but to no avail. Finally, the day the bids were to go out, he called up on the telephone and made a flat offer of a bonus of ten thousand dollars, to be paid the day the contract was signed. This too was declined, and he cut his price on the job twenty thousand dollars and secured the contract. This short telephone conversation cost one of the parties ten and the other twenty thousand dollars—certainly one of the most expensive calls on record.

Apart from the tower, the Madison Square Garden cannot be called a great success. It is a translation in terra cotta of an enrichment in carved stone. The architect subsequently attained a much greater power of effective design in terra cotta than he showed here. In the Parkhurst Church you find precisely the freshness and zest of craftsmanship, of working in the given material, which you miss here. But it was upon the tower that the author concentrated his enthusiasm. When new it was acclaimed as the greatest thing that had been done in Art for centuries. Of course this was extravagant praise, for after all it was a reproduction rather than an adaptation of the celebrated Giralda at Seville. But although it has since been overborne and belittled by the mass and weight of the Metropolitan, the tower of the Garden still remains an object of unsurpassed beauty and grace, an ornament to the city which it would be not only a pity but a shame to permit to be pulled down.

Over thirty years have rolled by since the events just narrated took place, and all but

one of the actors in this little drama have made their final exit from the stage of life. The first to go was Dr. Ruth, who died at Trouville, France, in December, 1896. Nearly ten years later, in June, 1906, the brilliant Architect met his end at the hand of a cowardly degenerate in the place with which his name has become so closely and tragically connected. William C. Hall, after suffering a stroke of paralysis in 1903, from which he never fully recovered, died at his home in West 9th Street in June, 1911. The next to go, in March, 1912, was General Harry Bingham, at that time the oldest Member of Congress in point of service, and affectionately known as the "Father of the House." Finally, in April, 1915, came the last call for Frank Hopkinson Smith, engineer, painter, author, lecturer, who will perhaps be best remembered as the builder of the great Race Rock Lighthouse, off New London.

CHAPTER VIII

THE MANHATTAN COMPANY

THE palmy days of the Second Brown Association were of short duration. Within a period of a few years, in place of the three Companies which had been eliminated from active competition there sprung up no less than seven new concerns: Standard (1890), White (1892), Staten Island and New Jersey (1893), Excelsior (1894), Conkling-Armstrong (1895), and Corning (1896), and the general business conditions were, if possible, worse than before.

At that time there was located on Staten Island a concern known as the Staten Island Lumber Company. After sinking a large sum

of money, it had proved unsuccessful and was in the hands of Bacot and Record, as receivers. George L. Record, who has since become well known as a candidate for the United States Senate, and as the great "Bull-Mooser" of the State of New Jersey, was at that time a young and rising lawyer of Jersey City. One day in the Winter of 1896, Record called on Walter Geer at his office in the Potter Building and outlined a plan which he had formed for a new Terra Cotta Association. The plan looked attractive and feasible, so Geer invited Record to lunch with him at the Lawyers Club in the old Equitable Building, to meet William C. Hall. At this luncheon, and at many subsequent meetings at the same place, at which the other Companies were represented, the plan was worked out in detail and finally agreed to. A company was formed, known as the Manhattan Material Company, which was incorporated under the laws of the State of New York, with a capital of $10,000 paid in in cash, the stock being subscribed by the different Companies in proportions mutually agreed upon. The Manhattan Company was

to act as the General Sales Agency of the various Companies interested, and entered into contracts with the different Companies individually, agreeing to turn over to each Company a certain percentage of the total amount of orders secured by said Manhattan Company, these percentages being the same as the percentage of stock held by each Company. In case the Manhattan Company for any reason could not assign to any individual Company its exact quota of orders, it agreed to pay in cash a bonus of twenty per cent of the amount of such deficit, and any Company receiving more than its quota agreed to pay to the Manhattan Company a similar amount by way of penalty.

The offices of the Manhattan Company were in the Mission Building at 285 Fourth Avenue. The Clerk was Thomas Van Every, and his assistant was Harry Lee King, who is now an officer of the Federal Company. The Company began business on the first of April, 1896, with five-year contracts with the following Member Companies, namely: Perth Amboy, New York, Standard, Excelsior and Conkling.

Later on the White and New Jersey Companies became members.

In February, 1892, the Partridge, Powell and Storer Company was formed for the purpose of making face bricks. Land was purchased and a plant erected at Rocky Hill, New Jersey, near Princeton. Two years later the Company was incorporated as the Excelsior Terra Cotta Company. The President was Isaac A. Hopper, a prominent New York builder, and the General Manager was William Henry Powell. "Harry" Powell, as he was generally known in those days, had commenced as a boy in the terra cotta business, in a minor position with the Perth Amboy Company, and had later become assistant to Oswald Speir in the New York office. His advancement was slow but sure; but on account of his youth few of his associates then realized the great ability which he possessed, and which he was to demonstrate in such a striking manner in later years. During the present century he has become the dominating influence in the business in the East. Mr. Powell has contributed the following history of the Excelsior Company:

The Excelsior Company

"The Partridge, Powell and Storer Company was incorporated under the laws of New Jersey in February, 1892, and built a plant at Rocky Hill, Somerset County, New Jersey, for the manufacture of buff face brick. Nelson H. Partridge and William H. Powell had been up to that time employés of the Perth Amboy Terra Cotta Company. Colonel John N. Partridge was President; Nelson H. Partridge, Vice-President; William H. Powell, Secretary and General Manager, and William B. Storer, Treasurer. Its first order was for the brick to line the entire interior of the 23rd Regiment Armory, Bedford Avenue and Pacific Street, Brooklyn, and for those days it was a large one. In February, 1893, the entire plant, exclusive of the kilns, was destroyed by fire. It was immediately rebuilt. The year 1893 was one of severe business depression, and the lack of demand for the product, coupled with the losses due to the fire, resulted in such serious embarrassment that the Company's future looked very dark as the year drew to a close. Just at this time the health of Nelson Partridge became impaired and he went to Colorado to reside. Something had to be done. In the early part of this year, in an effort to

increase our income, I had visited Chicago and interviewed Fritz Wagner with the object of obtaining the eastern agency of the Northwestern Terra Cotta Company. Mr. Wagner declined to take advantage of the glowing opportunity I presented to him. Later I tried to induce Harry Stephens, of Philadelphia, to let us represent his company in New York. This effort was likewise unsuccessful. As it was apparent that no agency arrangement could be made with anyone, it was evident that if we wanted to get in the terra cotta business we would have to become manufacturers ourselves. Fortunately, our four kilns were excellent muffle type kilns and we had ample and satisfactory machinery for clay preparation, and good tunnel dryers, but that was all. We had no suitable buildings and were without any working capital. I had a slight acquaintance with Isaac A. Hopper, at that time one of the leading builders in New York, and concluded to interest him in the enterprise. After several weeks of negotiation Mr. Hopper bought a small amount of treasury stock and took an option on sufficient other stock from the existing holders to give him control of the Company. Later on he exercised this option. Just about this time the

Perth Amboy and New York Companies purchased the Boston Terra Cotta Company, with the intention of discontinuing its business. Learning of this, I immediately went to Boston and secured the services of Louis M. Schindler, the Superintendent of the Boston works, and whom I had known during his term as Superintendent of the Perth Amboy Terra Cotta Company. Previous to his employment by the Perth Amboy Company he had been with H. A. Lewis at South Boston, coming to Perth Amboy at the time of the purchase of the Lewis business in 1887 and remaining there for several years. I had a very high opinion of Mr. Schindler's ability and in order to obtain him had no hesitation in paying him a salary twice as large as I drew as General Manager. This confidence was fully justified, for much of the subsequent success of the Company was due to his splendid handling of the manufacturing operations.

"The name of the Company was changed in February, 1894, to Excelsior Terra Cotta Company. Mr. Hopper became President; Colonel Partridge, Vice-President, and I was made Secretary and Treasurer and also acted as General Manager. Our first contract was the addition to the Carnegie Music Hall, 56th

Street and Seventh Avenue, and we obtained it from Mr. Hopper. He had built the original building and the New York Company had supplied the terra cotta. When he received their bid on the addition he thought they were holding him up. Although I did not know it at the time, it subsequently transpired that it was on account of this that he decided to become interested in the business. I recall very well his glee in relating to me how, after writing the New York Company that the contract had been awarded to the Excelsior Company, New York's representative had immediately called on him to find out who the Excelsior Company was. Hopper had taken great pleasure in replying that it was his company. The whole matter had been kept so quiet that the first knowledge our competitors had of the existence of the new company was the notice of the award of the contract. Fortunately, although the color of the original work was somewhat unusual, we had no difficulty in matching it, and successfully executed the order, although we had to operate under adverse conditions. The only building we had suitable for plaster shop and for pressing was an open shed without floor, used for drying brick. We boarded up the sides, put in some

Eckardt V. Estreen

Morris E. Gregory

steam pipes, laid down some plank for the model makers to stand on, so that they would not get cold feet, and turned out our first terra cotta on boards on the earth.

"We went along during 1894 taking some few orders and adding slightly to our equipment and showing a small profit. Our chance came in 1895. About the first of the year Mr. Hopper secured the contract for the New York Commercial Buildings, Broadway, Washington and Waverly Places and Mercer Street. It was a very large building for the time, consequently a terra cotta contract of size and importance, and was designed by Robert Maynicke, who had just left the office of George B. Post, and it was his first commission. Naturally Mr. Hopper gave us the business. Mr. Maynicke knew terra cotta thoroughly, and was an agreeable man to work for. During the progress of the work he related to me an incident in connection with the Long Island Historical Society Building, Clinton and Pierpont Streets, Brooklyn, which is perhaps worthy of preservation. It was the first terra cotta contract of importance in what is now Greater New York, and I think may be considered as the starting point of the terra cotta business in the East. George B. Post was the

architect. The terra cotta had been ordered from Loring, who had a small plant in South Boston. No terra cotta and no satisfaction could be obtained from Loring and the building was badly delayed. Mr. Maynicke went on to Boston to see what could be done about it. An examination of the work in the shop convinced him that it could not be successfully handled. He asked to see the architect's working drawings, carefully examined them to see if all were there, rolled them up, put them under his arm, said 'Good day,' and walked out, came back to New York, and gave the order to the Perth Amboy Company. They handled it so successfully that Mr. Post, who liked terra cotta immensely, was encouraged to use a large amount of terra cotta in the new Produce Exchange, and later in practically all of the large buildings which he designed. At the same time that we secured the Commercial Building contract we obtained from Mr. Hopper a good sized contract at Sixth Avenue and 10th Street, Ralph S. Townsend, architect. Evidently this state of affairs alarmed our worthy competitors, for shortly afterward we were invited to send representatives to a dinner of terra cotta manufacturers held at the Arena, a restaurant in West 31st Street, kept

by William C. Muschenheim, later of the Hotel Astor. Colonel Partridge, Mr. Hopper and I attended. Mr. W. C. Hall presided, and as I recall it now, in addition to Messrs. Lewis, Speir and Geer, some people were there from the Fiske concern (The Boston Fire Brick Works), and the Standard Terra Cotta Company. The ostensible object of the dinner was to discuss the serious situation due to 'excess' capacity, and to admonish the younger companies not to make such low prices. After the latter had been properly impressed with the gravity of the situation, the real object of the gathering was disclosed, and we were invited to join the Association. A few days later another meeting was held at the Reform Club, 27th Street and Fifth Avenue, and the details were arranged to the satisfaction of all concerned. We were at last recognized as a full-fledged competitor.

"Each year we extended the plant and increased our output and made money. After we changed from brick to terra cotta the only new money put into the concern was represented by the small amount of treasury stock purchased by Hopper. The capital stock was never increased: everything was provided for out of earnings. The Spanish War year, 1898,

was a little slow, but with that exception from 1895 to the close of 1906 business was good.

"In the early part of 1905 I purchased Mr. Hopper's stock and became President. In January, 1907, the Company became a part of the new Atlantic Terra Cotta Company.

"The principal buildings for which terra cotta was furnished by the Excelsior Company were: New York Commercial Buildings, Broadway, Waverly Place, Washington Place and Mercer Street, New York City; Commercial Cable Building, Broad Street, New York City; Government Printing Office, Washington, District of Columbia; Office Building, 42 Broadway, New York City; United Gas Improvement Company's Office Building, Broad and Arch Streets, Philadelphia, Pennsylvania; St. Ambrose Roman Catholic Church, Tompkins Avenue, near DeKalb Avenue, Brooklyn, New York.

"The St. Ambrose Church was erected shortly after the Parkhurst Church, and the architect in designing it was influenced by the latter. Now that the Parkhurst Church has been demolished, it is interesting to note that St. Ambrose Church is the oldest example in the East, and so far as I know, in the whole country, of an elaborate glazed polychrome exte-

rior. The architecture used in this edifice is more elaborate from the color standpoint than was the case in the Parkhurst Church."

In November, 1894, Conkling and Armstrong sold their interest in Stephens, Armstrong and Conkling to the two Stephens brothers, and withdrew from the firm. At the end of the year, they also resigned their positions with the New York Company and went to Bermuda for a vacation. From their island retreat they came back a few weeks later, like Napoleon from Elba, to resume their terra cotta crowns, but in this case, not for a short hundred days, but for many years of success and prosperity. In January, 1895, they incorporated the Conkling-Armstrong Terra Cotta Company, of which Ira Conkling became President and Tom Armstrong, Treasurer. Edward Conkling was Vice-President and Samuel Conkling the Superintendent, so it was another family concern. A plot of over three acres was purchased at Wissahickon Avenue and Juanita Street (Nicetown), Philadelphia, and a large plant was erected. The new Company

was successful from the start, and for many years now has been one of the most prominent in the business.

The New Jersey Company, which became a member of the Manhattan Material Company in January, 1897, began business in 1888 under the firm name of Mathiasen and Hansen. Karl Mathiasen was then a young man about thirty years of age, a Dane by birth, who had had considerable practical experience in the New York and other plants. The two men, however, had much more experience than money, and at first did not meet with much success, mainly for lack of sufficient capital. In 1893 they incorporated the New Jersey Terra Cotta Company. Since then their career has been one of uninterrupted success. The officers of the Company since the start have been Karl Mathiasen, President, and E. V. Eskesen, Treasurer. L. B. Eskesen was Vice-President until his death, 11 December, 1914.

The following interesting story of the New Jersey Terra Cotta Company has been furnished by E. V. Eskesen:

The New Jersey Company

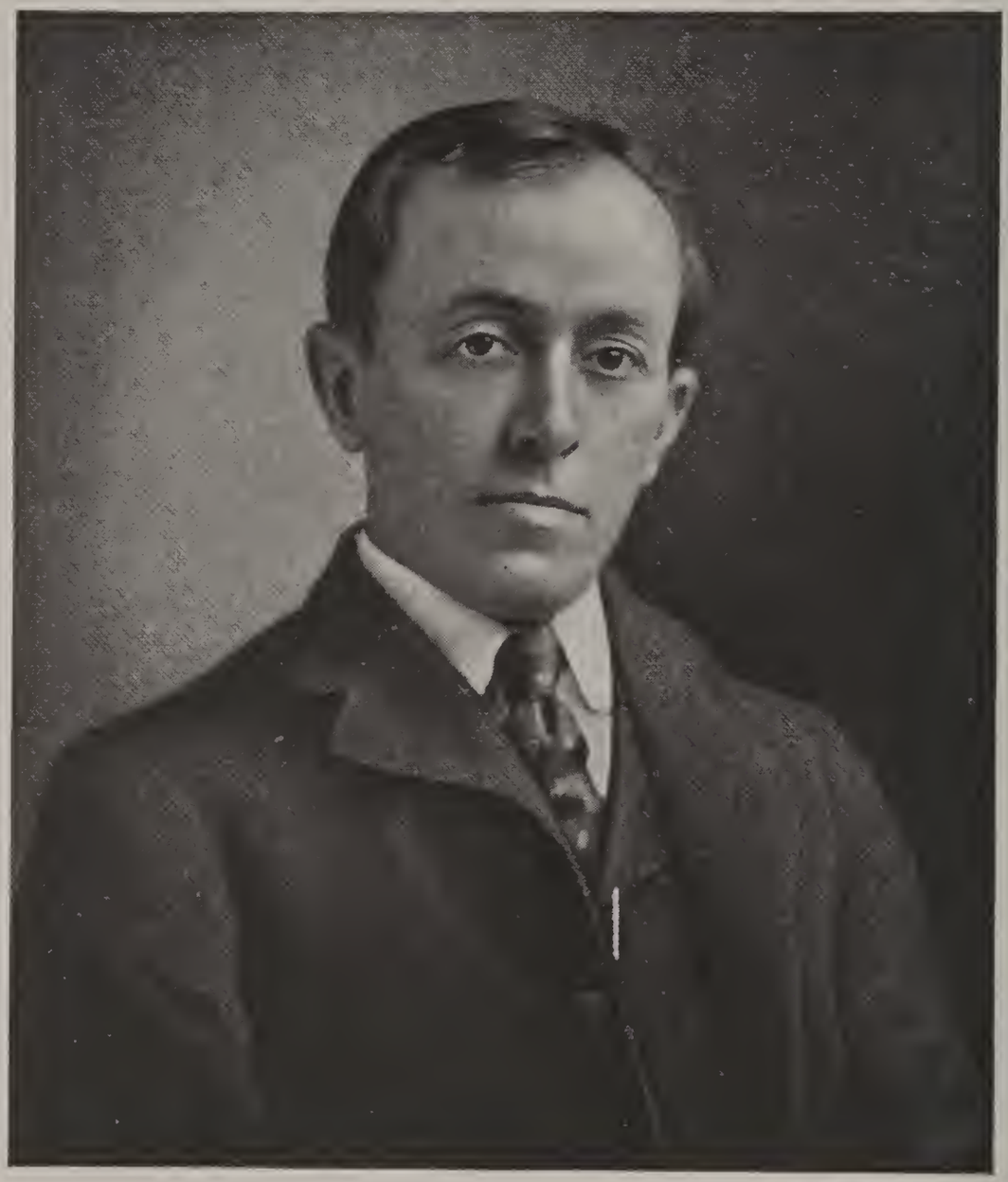
"The plant is located at 2 Catherine Street, Perth Amboy, New Jersey; the office is in the Singer Building, New York City. The Company was organized in New Jersey, 26 November, 1893. It succeeded the partnership of Karl Mathiasen and Otto E. Hansen which was established in 1888.

"The business was started in a very small way on a plot 75 by 100 feet, with one kiln which was home-made. There was no engine power and the clay was pugged in a pit, with a pole and a mule to pull it.

"The first order taken by Mr. Mathiasen was for a stable in East 100th Street. The color should have been buff but unfortunately it came out black from the kiln. The usual remedy of those days for fixing such errors was applied. The partnership never received a cent for this job as the contractor failed. Both Mathiasen and Hansen were practical terra cotta men who had worked their way up in the industry. As soon as the plant was on a going basis, engines and kilns and new buildings were added.

"On 12 June, 1894, the plant of the Company was entirely destroyed by fire. Nothing but the kilns were left. The Company at that time

had what would be considered several good contracts on hand, but it was impossible immediately to rebuild the plant, especially when it was considered that the mortgagee collected the insurance and nothing but the aforesaid kilns were left. In order therefore not to cancel the contracts on hand, the officers of the Company rented an old face brick plant located at Pasadena, New Jersey, and made several changes in same so as to make it adaptable for manufacturing terra cotta. Part of the working force of the Company, mostly consisting of men related to either the Mathiasens or the Eskesens, was transferred to Pasadena, and worked there during the summer months turning out the terra cotta for several buildings in New York City, mainly apartment houses and loft buildings, many of which are still standing. The place was soon found inadequate and too far out of the way, and was given up in the fall of 1894. The plant in Perth Amboy had then again been partly rebuilt and work had been resumed. It was found in the Spring of 1895 that contracts could be obtained for more work than the Company was able to take care of, and Karl Mathiasen, together with the four Eskesen brothers and P. S. Sondergaard, formed the Karl Mathiasen Company. This



O. W. Ketchum,

Company in April, 1895, rented part of the old brick plant of the Walton Buff Brick Company in Trenton. The Company started with very little capital but with a surplus of energy and working capacity.

"It was found at the end of the year that the Company in the eight months of its existence had accumulated a profit of about $3,500, which was considered a fine result. The stockholders, therefore, in view of this splendid financial showing, met in Trenton on New Year's eve, 1896, for a grand dinner, where champagne flowed freely.

"The next day a telegram was received stating that the terra cotta for a school building in Brooklyn had been condemned, the contract amounting to about $4,000. All the terra cotta had been made and nothing paid, and the year's profit had therefore been more than wiped out. This was sad news after the jolly New Year's eve party. A visit to the building and an interview with the inspector and the contractor did not make things look better. The stuff was 'rotten' and had to be taken out. After all other resources had failed, Mathiasen went and saw his friend, James Taylor, who at that time was living in retirement on his farm at Monmouth, New

Jersey. Taylor, ever willing to help his friend Mathiasen, responded to the call. After two or three visits to the school building, at which he had with him a couple of mechanics, Taylor went and saw the inspector and the contractor, and in his usual persuasive and taking way soon convinced the inspector that the terra cotta was up to specifications and the best ever made. This was a great relief to the young Company. The balance of the terra cotta was delivered, and set in the building without further trouble, and paid for in full.

"The old pottery at Trenton was soon found too small for the amount of work handled, and in the Summer of 1896 the Company acquired the old plant of the Rue Pottery Company located at Matawan, New Jersey. The first kiln was fired in the Fall of 1896. The name was then changed to Matawan Terra Cotta Company.

"Returning to the New Jersey Terra Cotta Company, which was incorporated in November, 1893: Eckardt V. Eskesen, who entered the Company on 1 May, 1894, was, in January, 1896, elected Director, Secretary and Treasurer. In 1899 Otto H. Hansen retired as a stockholder, and the New Jersey Terra Cotta Company then bought out the Matawan Terra

Cotta Company. B. K. Eskesen and L. B. Eskesen, and P. S. Sondergaard thereby became stockholders and directors in the New Jersey Terra Cotta Company. Of these, L. Bojenhardt Eskesen, as Vice-President of the Company, took active part in the management up to his death 11 December, 1914.

"During these and the following years the Company created and maintained a large market in supplying terra cotta fronts for tenement houses on the East Side of New York. The building of tenement houses for this part of New York was very active during these years. These operations, which had originally been in the hands of Irish builders, and later on of Germans, drifted slowly into the hands of the Jews. The Company's attention to this trade and its hold on the same was so strong that terra cotta was used on every building going up on the East Side, and no operator thought it possible to use terra cotta made by any other company than the New Jersey.

"On 8 September, 1912, a disastrous fire wiped out all of the buildings in which were located the pressing and plaster shops and part of the modelling and drafting rooms. The Company at that time had a large amount of contracts on hand. It immediately started

erecting temporary sheds and rebuilding, and was able to continue work and complete its contracts without cancelling a large amount of the work on hand.

"William N. Griswold, who first became connected with the Company in 1899, was made Superintendent in 1904. Karl Mathiasen, Junior, the eldest son of the President, entered the service of the Company in 1914, and was elected Secretary in February, 1916."

The affairs of the Manhattan Company were always well managed, and for several years it had great success. But, as the Philadelphia concern of Stephens, Armstrong and Conkling had proved to be the bête-noire of the First Brown Association, so De Forest Grant, with his new Atlantic Company, played the same rôle with the Manhattan Company, and this time the "black beast" proved to be a regular "Bull in a China Shop." Grant had graduated from Yale in 1891, and not long after had begun his business career with the Staten Island Lumber Company. Here he got his first taste of that delightful Apple of the Hesperides, the terra cotta business, of which

if one once eats he is lost forever. When the Staten Island Company was finally wound up, Grant incorporated the Atlantic Terra Cotta Company in 1898, with a formidable list of Directors and Stockholders, all selected from the pages of the Social Register. The officers of the Company were: De Forest Grant, President; W. H. Roome, Vice-President; R. T. Wainright, Secretary, and William Manice, Treasurer. A plot of ground was bought and a plant erected at Tottenville, Staten Island. Grant was asked to join the Manhattan Company, but demanded such a large percentage that no agreement could be reached.

About the same time further competition developed from a Corning concern. Architectural terra cotta was first made in Corning in 1888 by Robright and Dorman, who were engaged at that time in general contracting and building and the manufacture of brick. The first terra cotta they produced was largely used in buildings erected by them, in connection with their brick. In 1890 Morris E. Gregory entered the employment of the firm as

bookkeeper and General Manager, which position he held until the Spring of 1896, when he purchased the interests of his former employers and assumed entire charge of the business. At first Mr. Gregory did business under the name of Brick, Terra Cotta and Supply Company, but later assumed the name of Brick, Terra Cotta and Tile Company, M. E. Gregory, Proprietor. Gregory, who is a man of great energy and practical ability, made many improvements and soon put the business on a firm basis. Under his management the terra cotta business has maintained a steady growth. He is also a large manufacturer of Vitrified Paving Block. The plant, which is located on the Pennsylvania Division of the New York Central Railroad, in the city of Corning, has been enlarged from time to time to meet the requirements of the business. Mr. Gregory's son, M. Creveling Gregory, a graduate of Ohio State University, a Ceramic Engineer, is now associated with his father in the management of the business.

CHAPTER IX

THE TWENTIETH CENTURY

AFTER the dissolution of the Manhattan Material Company on the first of April, 1901, there was no general Association between the Companies for a period of thirteen months. During that time, however, the Perth Amboy and New York Companies maintained a joint office at 150 Fifth Avenue, with Harry King as Clerk.

During the Winter of 1902, there were numerous conferences at the residence of William C. Hall, 52 West 9th Street, with a view to the formation of a new Association. Hall's house was an old 30-foot, three-story mansion, originally built by the French Consul General

at New York. The entrance was through a porte cochère into a drive-way from which the main door of the house opened on the right. In the rear of the house there was a square court or yard, back of which was a two-story stable, the first floor of which Hall had transformed into quite an attractive "den," furnished with sofas and easy chairs, with rugs on the floor, and at one end a Pompeian brick and terra cotta mantel which would take a six-foot log.

As the business was much demoralized from the excessive competition, all of the Companies were anxious to form a new Association along the lines of the late Manhattan Material Company which had proved so satisfactory, but the great obstacle proved to be the percentage question, upon which it was impossible to agree. At last Henry Doscher of the Standard Company suggested an arrangement without fixed percentages, under which the profits should be divided upon the basis of a sliding scale determined by the amount of work taken by each Company during a certain period. This was finally agreed to, and certainly no crazier scheme was ever adopted by

William H. Powell

Frank G. Evatt

a crowd of sane business men. As George Putnam afterwards expressed it—the Companies might just as well have installed a roulette wheel and left the fate of the business to the decision of chance.

This arrangement, which was known as the Terra Cotta Manufacturers Association, lasted from the ninth of May, 1902, to the first of April, 1904, when it was dissolved amidst general dissatisfaction. Probably the best verdict on this Association would be the epitaph upon a child's tomb in a country grave-yard:

"If I was so soon to be done for,
I wonder what I was begun for."

The members of this Association were Perth Amboy, New York, Excelsior, Standard, New Jersey, Conkling-Armstrong, Atlantic and Corning.

In April, 1903, during the existence of the Terra Cotta Manufacturers Association, was founded the South Amboy Terra Cotta Company. The officers of the Company, since the start, have been Christian Mathiasen, President and William Mathiasen, Vice-President,

both being brothers of Karl Mathiasen of the New Jersey Company, and Peter C. Olsen, Treasurer. Olsen, although probably the youngest man of prominence in the business, has made the reputation in a few years of being one of its ablest and most level-headed men. The New Jersey and South Amboy Companies, which have always been closely affiliated, have recently become more strongly united through the Seaboard Clay Manufacturing Company, although both Companies are still operated separately.

In September, 1905, the Maryland Terra Cotta Company was formed to purchase the terra cotta business of the Burns-Russell Company, which had manufactured a little terra cotta from time to time, but had never been very active in this branch of their business. The President of the new Company, John J. Kelly, and the Second Vice-President, Harry P. Boyd, occupied similar positions with the National Building Supply Company. The First Vice-President, C. W. Slagle, was a member of the Burns-Russell Company;

Alfred Tyler, the Treasurer, was the Baltimore Manager of the Hydraulic Pressed Brick Company, and W. F. Thyson, the General Manager, had been the Baltimore Agent of the Perth Amboy Company. Both Tyler and Thyson afterwards withdrew from the Company. After struggling for several years, the Company discontinued business in 1915.

In 1906, O. W. Ketcham, of Philadelphia, who had conducted a successful Builder's Supply business there for over ten years, acting also as local agent for several terra cotta companies, decided to build his own terra cotta plant and enter actively into the business. For this purpose he bought land at Crum Lynne, Pennsylvania, just north of Chester, and began the manufacture of terra cotta. He has made some very good work and has been very successful.

The generally unsatisfactory conditions of the business continued to suggest various schemes for improving the situation. At this time the Government at Washington, under President Roosevelt's Administration, had be-

gun to vigorously enforce the Sherman Act, which had been adopted over ten years before, and Big Business for the first time realized that that law had teeth. As the Terra Cotta Manufacturers had no intention then, or at any other period, of acting contrary to the law, plans were laid in May, 1905, under advice of able counsel, for the formation of a large corporation, which all of the principal companies in the East were asked to join.

This Company, which was to be called the National Terra Cotta Company, was to have a capital of $4,000,000 in stock, and $1,000,000 in bonds. It was to take over the business of the Perth Amboy, New York, Conkling-Armstrong, Excelsior, Standard, Atlantic and New Jersey Companies. A prospectus was drawn up and submitted to the various Companies for their consideration. The plan was finally abandoned, but it led a year later to the founding of the great Atlantic Company.

In February, 1907, the Atlantic Company was incorporated, combining the old Atlantic, Perth Amboy, Excelsior and Standard Companies. Later a controlling interest was also

acquired in the Atlanta Company, which, however, has always been operated independently.

The officers of the new Atlantic Company were: President, De Forest Grant (Atlantic); Vice-President, William H. Powell (Excelsior); Treasurer, George P. Putnam (Perth Amboy); Secretary, Dwight W. Taylor (Atlantic).

The Company had plants at Tottenville, Perth Amboy and Rocky Hill, besides the Atlanta works, and claimed to be the largest manufacturers of architectural terra cotta in the world.

Unfortunately for the best interests of the business, the new combination failed to adopt the "live and let live" policy of the great United States Steel Corporation towards its weaker competitors, and during the first two years of its existence, owing partly to this policy and partly to the general depression in the business following the panic of 1907, conditions were worse than before.

During these two years, two separate efforts were made to combine the outside Companies. The first was a plan for the formation of a

holding Company to include all of the Companies not in the Atlantic, under the name of the United States Terra Cotta Company. Later another attempt was made to combine the Atlantic and the outside Companies in a similar holding Company. Both of these efforts failed.

Finally in January, 1909, owing to internal dissensions, and disagreements as to business policy, De Forest Grant and his followers withdrew from the Atlantic Company, and William H. Powell was elected President, George P. Putnam continuing as Treasurer.

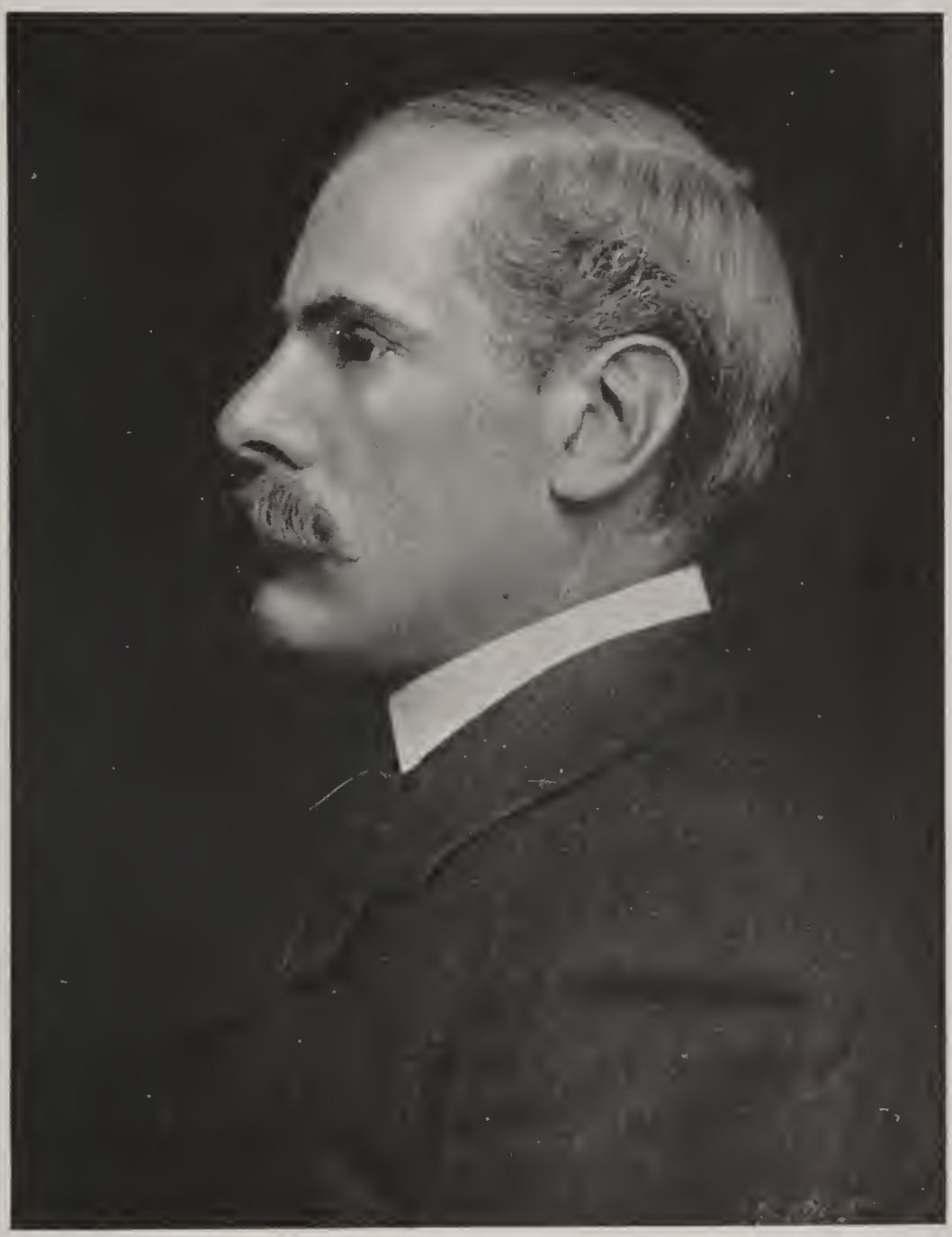
As soon as Grant left the Atlantic Company legal proceedings were begun to try and force a dissolution of the combination and a return of the old Atlantic Company to its former owners. There was an investigation of the whole matter by the Federal Grand Jury, and several legal actions, but the Atlantic Company was victorious in every case.

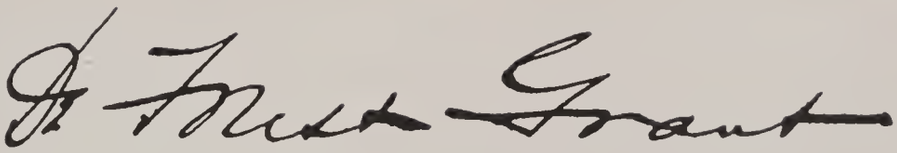
In November, 1909, Grant incorporated the Federal Terra Cotta Company with the following officers: De Forest Grant, President; Edwin Thorne and William Manice, Vice-Presi-

dents; Frank Thayer, Treasurer, and D. W. Taylor, Secretary. The Company bought seventeen acres of land on Woodbridge Creek, known as the Cutler property, and at once built works there. With a new and well-equipped plant, and the experience gained by ten years in the business, the new management was successful from the start and has built up in a short time a very prosperous business.

In May, 1910, an attempt was made to organize a "Literary and Publicity Bureau," the general idea of which was practically the same as set forth in the Second Section of Article Two of the Constitution of the National Terra Cotta Society, namely, to promote the interests of the terra cotta business through a general advertising campaign and the publication of books, pamphlets and other forms of trade literature. Thomas Cusack was suggested for the head of the proposed Bureau. He had been for a number of years the Superintendent of the New York Company, and during that time had written some very able technical articles on terra cotta for the "Brick-Builder," which

had attracted considerable attention in the trade. Cusack had then retired from active business and returned to his old home in England, but he was sent for, and came over at the expense of the New York Company, which was very much interested in the plan. A circular letter signed by Mr. Geer, Mr. Wagner, Mr. McBean and Mr. Armstrong, was sent to all of the Terra Cotta Manufacturers in the United States, inviting them to a conference in New York City during the month of June. In response to this invitation several meetings were held at the Manhattan Club at which most of the Companies were represented. Nothing came of the project, however, and it was finally abandoned. One of the causes of failure was undoubtedly the fact that the plan was not broad enough in its scope to make a general appeal to the Manufacturers. But although the attempt to bring the Companies together under this plan failed at that time, it no doubt had considerable bearing on the outcome of the very successful effort made a year later to organize the National Society, the story of which is told later on.





A. J. Grady

CHAPTER X

THE CENTRAL COMPANIES

AFTER the unsuccessful attempt of Mr. Renwick, in 1853, to introduce terra cotta in New York, no more work was manufactured there for nearly a quarter of a century. But in the West, a builder of Louisville, Kentucky, named J. N. Glover, began the manufacture on a very small scale about the year 1867. His method was to obtain a cast-iron model, make a mould of it in plaster of Paris, and then make of simple clay, tempered to a workable condition, an interior impression of the mould. This gave a clay copy of the iron model, which became of course reduced in size by the shrinkage of the clay in

drying and burning. It was then painted outside and pitched inside and sold to the builders—a clay imitation of an iron imitation of a cut stone. Glover, however, supplied a material necessity, imperfectly, perhaps, but nevertheless moving along the path leading to a better understanding of the uses of the material.

Meeting with a fair measure of success, he soon moved his works to Indianapolis, Indiana, where there are very extensive clay deposits in the Brazil coal mine region. This clay has to be excavated in order to obtain the coal and is therefore not very costly, while at the same time it is of a most excellent quality and burns a good buff color.

The change of location led to a much larger demand for his terra cotta work, and in 1868, he sold his business to Hovey and Nichols, of Chicago, who in 1869 moved the works to that city. They found that to manufacture the work in Indianapolis and then ship it to Chicago, which was the chief market for its sale, was too costly, and that the clay and coal could be carried at less expense; also that delay was

avoided in the delivery of their product, by having the manufactory near the centre of delivery, where most of the work was to be used.

In 1869, Hovey and Nichols organized the Chicago Terra Cotta Company with the following officers: Samuel E. Barrett, President; Sanford E. Loring, Treasurer; J. F. Nichols, Secretary, and J. N. Glover, Superintendent.

Being anxious to extend their operations, Nichols went to Europe and engaged Signor G. Meli to come to Chicago to assist in the development of the works. Meli made several handsome designs for vases and statues, but as these were in the line of art, rather than of architecture, they did not find a ready sale, and caused a loss to the Company. What the West wanted at that time was an economical and useful building material, and failing to furnish this in a practical manner, the Company soon found its capital gone and itself in debt. This Company had followed in the footsteps of its predecessors, using cast iron as models and making clay copies.

In 1870, Loring not being satisfied with the quality of the material they were turning out, and feeling confident that the failure to make better work came from ignorance, and not from lack of merit in the material, opened correspondence with Mr. Blashfield, the well-known English manufacturer. This correspondence was referred to James Taylor, then Superintendent of Blashfield's works, who had already arranged to leave England for the United States. On Taylor's arrival in this country he visited the works at Chicago, and the result was that the Chicago Company was reorganized in August, 1870, as the Chicago Terra Cotta Works, with James Taylor as Superintendent. The old Roman open-fire kilns were replaced with Blashfield's muffled kilns, and new methods were introduced for the preparation of clay and manufacture of finished stock, similar to those used in Blashfield's works at Stamford, England. With these changes, and with the increased facilities which were introduced, the Chicago Works were enabled to furnish a much better class of architectural terra cotta.

Among the able young men who became connected with the first Chicago Works during this period were:

John R. True, formerly a hardware clerk at Augusta, Maine, who was Shipping and Time Clerk;

Gustav Hottinger, of Vienna, an ivory carver, who was a modeller;

John Brunkhorst, of Charlottenburg (Berlin), a terra cotta stove maker, who was foreman clay worker, and

Henry Rohkam, a flower pot maker, who was a clay finisher.

All these men were faithful and industrious workers, and by close application mastered the duties given to their charge. To them is due much of the reputation won by the work made in Chicago. When in the year 1880, Loring turned his attention to other matters, (James Taylor having left in 1877), they took charge of the business, and succeeded from small means, but with great diligence, in building up the largest terra cotta plant in the West.

The business was first carried on under the

name of True, Brunkhorst and Company. On the death of John Brunkhorst in 1886, the firm name was changed to True, Hottinger and Company. In January, 1888, it was incorporated as the Northwestern Terra Cotta Company, being a successor in lineal descent to the old Chicago Terra Cotta Company, the pioneer plant of America. Thus Chicago may justly claim the honor of being the birthplace of American architectural terra cotta.

The first President of the corporation was John R. True, and the Secretary, Gustav Hottinger. In February, 1890, Mr. Hottinger was elected President, and Mr. True, Treasurer. Mr. True died 6 April, 1908. In June, 1915, Fritz Wagner, who had been connected with the Company since 1881, finally retired from active business. Beginning as outside superintendent, he had later become Vice-President and General Manager of the Company. He was succeeded by Harry J. Lucas, who had been connected with the terra cotta business for many years, first with the New York Company, and later as Executive Secretary of the National Terra Cotta Society. The North-

western Company has, for many years, been the leading manufacturer of terra cotta in the West.

The second company to begin operations in Chicago was the American Terra Cotta and Ceramic Company of Terra Cotta, Illinois. This was strictly a family concern, founded by William D. Gates, a lawyer by profession, in 1888. Mr. Gates has four sons who have been educated in Manual Training and Ceramic Schools and brought up in the factory work. Ellis, who is not in good health, is now in Colorado. The others are associated with Mr. Gates in the management of the business, Neil as Secretary, Major as Assistant General Manager and Paul in charge of research work.

Mr. Gates has written the following interesting and amusing account of his early experiences in the business:

"In 1881, William D. Gates, then a young lawyer, or who at least then thought he was a lawyer, got an old mill on his hands. While prospecting about, his attention was called to a peculiar clay deposit located on the property. Being young, impressionable and inex-

perienced he commenced dallying with it and found it very adhesive. It stuck to him. He couldn't get away from it. He began an endless experimentation in which he is still engaged. He knew he had a mill by a dam site, but learned later that it was not a Terra Cotta Factory, by a damn sight.

"Then he began falling into the hands of more or less experts, all anxious to impart information whether they possessed it or not, and most of them themselves sadly in need of the article they were supposed to furnish.

"Not being wise enough to know when he had had enough, he persisted, and went on exchanging money for experience, all the time getting shorter of money and longer on experience. If experience could be cashed in he would now be quite well-to-do.

"However, not knowing when he was whipped, he began learning the business, got a few men together, guessed himself into a few small jobs, and began making them, finally gathering a working organization.

"In 1888 he incorporated the American Terra Cotta and Ceramic Company, which organization has continued to the present time.

"The factory is located forty-five miles

Wm Tannahill

P. C. Baltz

northwest of Chicago on the Chicago and North-Western Railway.

"At an early day a laboratory was installed, one of the outcomes of which was the Teco Pottery which became wide-known.

"He has raised a family of boys, educated in the business, who are more competent than he ever was, and who are now putting vim and energy into the business.

"The product of the factory has been pretty widely distributed during the thirty odd years, many Banks, School Houses, Office Buildings and so forth. Notably the Chicago and North-Western Terminal, Chicago; Great Lakes Naval Station, and numerous Sky Scrapers in Chicago, St. Paul and Minneapolis have largely been the work of this Company."

The Indianapolis Company was organized as a stock corporation in June, 1883, as a successor to Stilz, Joiner and Company, who had failed. Mr. Hodgson was President, William F. Stilz, Vice-President; Mr. Dickerson, Secretary and Treasurer, and Joseph Joiner, Superintendent. The plant was located at Brightwood, a few miles from Indianapolis. In June, 1885, the Company went into the hands of

receivers, and in February, 1886, the plant was purchased by Charles P. Mason, Maria R. Stilz and Joseph Joiner, and the Company reorganized with W. F. Stilz as President. About the year 1895, Benjamin D. Walcott purchased an interest in the Company, which was again reorganized with Mr. Walcott as President and Treasurer. About ten years later Mr. Walcott threw the Company into bankruptcy and bought it in at the receivers' sale, and once more reorganized it with himself as President and Treasurer, his son Harris Walcott as Vice-President, and his wife Mary N. Walcott, as Secretary. On the death of Harris Walcott, in May 1907, Fred Walcott, a nephew of Mr. Walcott, was appointed Vice-President, and on the death of Benjamin Walcott in February, 1916, Mrs. Walcott became President, with Fred Rose, Vice-President and Lewis Watson, Secretary, who continued in office until William D. Gates bought the entire capital stock in April, 1918, and leased the plant to the American Company. Joseph Joiner, who was a member of the original firm of Stilz and Joiner, was an Englishman by

birth, and a nephew of John M. Blashfield, the well-known manufacturer of architectural terra cotta. He was an architect by profession and a man of great practical ability. He was engaged to come to this country in 1881 by William C. Hall at the time the Perth Amboy Company secured the large order for the Produce Exchange in New York. Under his superintendence the Perth Amboy plant was rebuilt and that large contract successfully executed. Soon after this, he went to Indianapolis, and began the manufacture of terra cotta with William F. Stilz, as above stated. He was connected with the Indianapolis Company, as Superintendent, and later as General Manager, until his death in 1902. William F. Stilz was connected with the Company as Vice-President, and later, as President. He finally left the city the same day that Mr. Lacey arrived, 13 January, 1896, and was not subsequently associated with the Company in any way. George H. Lacey, an Englishman by birth, and a man of very wide experience in the business, was Superintendent of the Company from 1896 to 1902, and subse-

quently, after the death of Mr. Joiner, the General Manager, which position he occupies at the present time.

The Winkle Company of St. Louis was incorporated in October, 1889, as a successor to the Joseph Winkle Terra Cotta Works which began business two years before, with a small capital, in works at Cheltenham leased from the Laclede Fire Brick Company of which Mr. Winkle had been Superintendent. This also is a family concern. Until his death in 1914 Mr. Winkle was President of the Company and his nephew John G. Hewitt has always been the Secretary.

The St. Louis Company was first incorporated in October, 1894. The Company built a few kilns, but did not continue in business long, and the plant was idle for three or four years. In 1898 the business was sold to R. J. McDonald and R. F. Grady, who became respectively President and Vice-President of the new organization. Mr. Grady was at one time a United States Engineer, but came to St.

Louis in 1891 where for seven years he was Superintendent of the Evens and Howard Fire Brick Company. David N. Burruss was elected President in 1904, and W. A. Maguire, Second Vice-President in 1916. Mr. Macdonald died 12 August, 1908. Mr. Grady has been the General Manager of the Company since its organization.

The Western Terra Cotta Company was organized 5 October, 1905, by William Timmerman at Kansas City, Kansas. Mr. Timmerman was the President; Walter Timmerman, Vice-President, and Paul C. Baltz, Secretary and Treasurer, all of whom had formerly been connected with St. Louis companies.

The Midland Company of Chicago was incorporated 10 December, 1910, its first President being William G. Krieg, an architect by profession, who at one time had been City Architect. "Big Bill," as he was generally known by his associates in the National Society, was always very much in evidence at the meetings, and never failed to attract atten-

tion by his breezy personality. He was the loving father of the celebrated "Code of Ethics" of the Society. He retired from the business in April, 1918, and was succeeded as President by Hans Mendius. F. S. Ryan, the Vice-President, died in July, 1918. Walter S. Primley has been Secretary and Treasurer of the Company since its organization, except during the years 1917 and 1918, when he resigned to enter the United States Army. The plant is located on a twenty acre plot at West 16th Street and South 54th Avenue (Cicero).

The Denver Company was founded 22 September, 1911, by John Fackt, George P. Fackt and Carl P. Schwalb. George Fackt was previously chemist, for about four years, of the St. Louis Company. He is a son of John Fackt of the Postel Milling Company at Mascoutah, Illinois. Schwalb was formerly in the hardware business, and has lived in Denver nearly thirty years. He is also interested in the Linquist Cracker Company and is director of the Merchants Bank. The Company began operations in March, 1912. It has a well-

equipped plant. The clay is obtained from a deposit about seven miles north of Golden. In August, 1914, the Company took the contract for the Denver Union Depot, which is faced entirely with gray granite-finish terra cotta, amounting to about one thousand tons, the largest tonnage job in Denver. The capacity of the plant was tripled at that time.

The Kansas City Terra Cotta and Faience Company is a successor to the Southwestern Terra Cotta Company, which was organized in June, 1910, and bought the present site of the plant, a plot of about five acres, but never began operations. In September, 1911, the business was incorporated under the present name, but did not prove successful. Finally the property was acquired by interests connected with the New Jersey and South Amboy Companies, and 4 December, 1912, the present and third Company was incorporated.

CHAPTER XI

TERRA COTTA IN CHICAGO

AFTER the article on the Central Companies had been written, a very complete history of the Northwestern Company was received from Harry J. Lucas. It was too interesting to be abbreviated, and too long to be included in the preceding chapter: it is therefore printed below, with the omission only of a few matters of purely local interest.

The Northwestern Company

"The history of this Company is closely associated with the foundation of the terra cotta industry in the United States.

The central figure of this prelude to great

Adolph V. Hottinger

HENRY ROHKAM

Sherman Taylor

H. J. Lucas.

things was Sanford E. Loring, at one time a practicing Chicago architect, a pupil of the first Van Osdel, and an early partner of W. L. B. Jenney, the noted Chicago architect.

"Loring took up the terra cotta business in the late sixties, continuing the work until 1879, and in these few years lifted the craft to a point where rapid development was possible, and then disappeared from the scene.

"Some years previous to the great Chicago Fire, in the late sixties, the firm of Hovey and Nichols, seedsmen, brought on from Indianapolis a small works for the manufacture of vases and garden furniture. This factory Loring acquired about 1869.

"As Manager of the Chicago Terra Cotta Company, which later on changed its name to the Chicago Terra Cotta Works, he interested himself in all branches of clay work. With Peter B. Wight, the architect, he developed fireproof construction and fabricated the material required for the same. Together with S. G. Artingstall, City Engineer, he worked out and built roofs of porous terra cotta and steel. So far as he knew he was the original inventor of porous terra cotta, and he was a contemporary of E. V. Johnson, later of national fame, in early attempts to use hollow tile.

"It would seem natural that such a man should seek to obtain the best possible assistance, and his search for men trained in the business led him to James Taylor who, with his brother Robert, had left the Blashfield works in England, and emigrated to New Jersey. Loring was successful in securing the services of James Taylor, and of Robert Taylor somewhat later. James Taylor was given charge of the works, and pretty much dominated the practical activities of the Company until his release and return to the East in 1877.

"The work done by the Chicago Terra Cotta Works embraced a wide range, from the roughest to the finest. Active competition with galvanized iron, so far as cornices and much other architectural work was concerned, will explain that it was necessary to search far and wide for features that could not well be made in metal. In those days it was necessary to convert the architect and hypnotize the owner in order to get a contract, and yet the factory was seldom short of work.

"A considerable business was developed in stock patterns, notably window and door caps, and immediately after the Fire considerable money was made with this class of work. Large quantities of book tile were made on a

hand machine for fireproofing, and much porous terra cotta was made, chiefly by hand in wooden and plaster moulds.

"Ornamental tile, both hand and machine made, found a ready sale, and there was some demand for glazed brick.

"The business, as it progressed, was constantly taking on a more distinctly architectural character. Cornices and trimmings for large buildings became more frequent; large contracts for hip-rolls and cresting made their appearance, and groups of heavy chimneys for residences were popular. Much high-class work was done in trimmings for residences. At all times there was a large trade in chimney tops, requiring a special wagon on the road with ladders and scaffolding.

"James Taylor knew the mechanical end of architectural terra cotta as few men have known it, but unfortunately was blind to his own limitations. His hazy conception as to how hard terra cotta should be fired permitted some inferior work to leave the factory.

"The Chicago Terra Cotta Works invariably erected its own work, and a word of tribute should be given to an English mason, by the name of Filey, who had charge of this department. Everybody believed implicitly that

Filey could set any piece, no matter how crooked, and make it look right.

"As a matter of record, a partial list of men working with the Company in the early days is here inserted without comment:

In Chicago

James Taylor	Superintendent
Robert Taylor	General Foreman
John R. True	Shipper
John Brunkhorst	Presser and Finisher
Henry Rohkam	Presser and Finisher
John Tank	Presser and Finisher
Gustav Hottinger	Model-maker and Modeller
W. H. Junge	Draftsman

In Boston

Harry A. Lewis	Clerk
Frank P. Meyenberg	Model and Mould Maker
Pete Peterson	Presser and Finisher
Harry Mitchell	Foreman
Paul Bartlett	Sculptor

"James Taylor left Chicago in 1877 and took his brother Robert with him. At this period, Loring was negotiating with the Boston Fire Brick Company to establish a terra cotta factory in their plant. When he finally succeeded in making arrangements he withdrew men, tools and material from the Chicago works, and, leaving this factory in charge of his

brother, Edward Loring, spent the greater part of his time in the East. James Taylor headed the Boston organization for a time, but later W. H. Junge was given charge.

"At about this time, in 1877, five men withdrew from the Chicago factory and founded the firm of True, Brunkhorst and Company, for the purpose of engaging in the manufacture of miscellaneous clay goods. This was the specific start or beginning of the Northwestern Terra Cotta Company.

"The career of the Chicago Terra Cotta Works, and of Sanford E. Loring as a terra cotta man, were now nearly ended. In 1879, at a time when the future seemed bright, with large and profitable contracts in hand, with ample capital and backing assured, the whole brilliant business suddenly became a tangle of broken promises and unpaid debts.

"The nearest friends of Sanford E. Loring believed that his sudden change from a masterful chief to a vacillating nonentity, so far as his terra cotta business was concerned, was due to an unfortunate blow he had received on the head, and yet, strangely enough, at just this time, when he was unable to gather the loose ends and maintain his established business, he was able to give remarkable profes-

sional service as an architect, and to accept and execute contracts for building work. The money he made in this way at this time supported him for years after.

"All of Loring's subordinates and friends were loyal. The 'Northwestern' cherished for years the hope that he would see fit to join with them, and every employé was willing to forget misadventures, and forgive all else and enroll again under his banner; but the vagaries induced by that random blow had control for a sufficient time to keep him permanently out of terra cotta. But he had sowed the seed deep and wide, and the business he had created flowed to those able to take care of it. He died in Buffalo, New York, in 1918, at the age of 77 years.

"The Northwestern Terra Cotta Company, as before stated, had its inception in 1877, when the firm of True, Brunkhorst and Company was organized. This new firm was composed of five members, namely: John Brunkhorst, Gustav Hottinger, Henry Rohkam, John Tank and John R. True. All of them had been with the Chicago Terra Cotta Works. In the months preceding their separation from that Company they had gone far with suitable preparations, and the new business was soon

comfortably settled in a two-story brick factory, facing Lincoln Park, at the junction of Lincoln Avenue and Wells Street, in Chicago.

"This little place on the whole was rather a potential than an actual architectural terra cotta works. Some excellent architectural terra cotta was produced, but the bulk of the output was in other directions.

"John Brunkhorst in those days easily took the lead among the partners—almost overnight he jumped into the role of business man, and made good. His knowledge of clay, firing and mechanics was based on observation and experience, and, although in no sense scientific, it was valuable.

"Brunkhorst was a massive figure, red-faced and two-fisted. His slouch hat, curly hair, faded blue suit and impressive waddle were subjects of constant 'joshing' on the part of his friends. He was trusted at sight, and trusted others the same way; was hail-fellow-well-met with the public, his partners and employés; and harder to please in the factory than can well be imagined. His nerve was sublime. Apparently impulsive and careless, he as good as never blundered.

"Gustav Hottinger had a solid education, and a taste for scientific inquiry. He was able

at once to set the processes beyond the rule of thumb, and his talents as a modeller, together with his experience in plaster work, proved indispensable factors in the business.

"It would be difficult to imagine a more quiet and unobtrusive man than the Gustav Hottinger of those days. He was the only man around the works who was not the least bit afraid of Brunkhorst, and nothing seemed to hurry him and nothing stopped him. He was a slender man and not tall, and he had a keen sense of humor which he took pleasure in concealing from all but his intimate friends. Brunkhorst loaded him without mercy with estimating, drafting, modelling, and machinery installations, but somehow without flurry it could all be accomplished.

"Henry Rohkam had been a presser and finisher, but he soon added the duties of collector to his other activities. He was older than the others, and very conservative. Before emigrating, he had been a soldier; in fact, had served through a war, and he believed theoretically in the strictest discipline. However, when discipline and his kind heart conflicted, the heart always won. He was vigilant, and an untiring worker. In appearance he was rather thin and sallow, but broad-shouldered

and erect, of medium height, and had a slightly preoccupied air.

"John Tank was a 'Clay man,' skilled in every ramification of working and drying the material. He was, incidentally, a rarely good mould-maker. He was not a large man, but very strong and rugged. No work was too hard for him, and no hours too long. Although he was well known to have the knack of saving, yet he was an unfailing source of supply for the impecunious. Faithful, kindly, industrious and competent, he was a rarely good man to know.

"John R. True was a Maine Yankee, with a full measure of common sense and native shrewdness. He was familiar with bookkeeping and cost-keeping, and as shipper for the Chicago Terra Cotta Works had acquired unusual discrimination as to quality of ware. Those who remember John R. True as a sedate, portly, banker-like man, of rich attire and dignified mien, will find it hard to picture him as a tall, raw-boned worker in overalls, one who never walked but ran. Such was he in those days. His sense of justice, his business integrity, his kindly willingness to overlook faults in others, were even then fully developed, only to be mellowed by the coming years.

"The general characteristics of the firm might be stated to have been unswerving honesty, and unlimited capacity for hard work. True was a Yankee, Hottinger an Austrian from Vienna, and Brunkhorst, Rohkam and Tank were Germans.

"In 1880, the Loring plant stood vacant, with little if any hope of resuming work, and True, Brunkhorst and Company, having had calls for architectural terra cotta in excess of the kiln capacity of their Lincoln Park factory, leased the old works at the corner of 15th and Laflin Streets, and boldly entered the field.

"The name 'Northwestern' was made known throughout the territory by means of catalogues, samples, and personal calls on an extended scale, and the road proved to be clear for rapid and consistent development.

"It must be remembered that the factory they had hired, had been to an extent stripped of tools and machinery, and for this reason the task of starting up without delay called for energy of the best kind. Capital was not much in evidence, but the firm had already achieved a reputation for sterling square dealing which at that time could be capitalized.

"All the partners, through association with Sanford E. Loring, had acquired a certain

idealism, and as part of the Taylor administration they knew pretty well what to do and what to avoid. Their motto was 'Never do less than our best,' and the only hard and fast rule was 'Never let a soft-burned piece escape.'

"The organization was charged with esprit de corps. There was no such thing as a sharp division of duties. The draftsman might spend a day hoisting terra cotta to the roof of a building, or the bookkeeper might singe his hair getting a kiln out on time. Everybody filled in where needed, and the partners were big brothers to the whole force in the factory and out.

"It is noteworthy that nearly all these early workers stayed by the terra cotta business as long as they lived. Only one, Mr. Hottinger, survives today.

"Almost at the beginning of this period John Tank disposed of his interest in the firm, but kept on working with unabated enthusiasm. It may be stated here that John Tank retained a life position with the Company, and the lasting respect and regard of all the partners.

"In 1881, Fritz Wagner was engaged by the Northwestern as the outside superintendent. Almost at once his exceptional qualities gave him an enviable standing both with his em-

ployers and the patrons of the Company. Wagner had had architectural training, which was the basis of his subsequent success as a terra cotta man, and he was also a practical mechanic. He overflowed with energy, and at all times was ready to out-wrestle, out-climb or out-work anybody. Rather short than tall, always good-humored, he was a general favorite wherever he might find himself.

"In 1882, the opportunity offered to have a suitable factory built on the site of the present works, corner of Clybourn Avenue and Terra Cotta Place, Chicago. This factory building and four good-sized kilns were promptly erected, the brick being made on the premises.

"It should be noted that the Lincoln Park factory was abandoned about 1884.

"In 1886, Burnham and Root entrusted the terra cotta contract for facades and court of the Rookery Building to the Northwestern Terra Cotta Company, and with this contract the 'Northwestern' came of age.

"The Rookery was by no means the first large building in Chicago to use terra cotta, but it was at that time a conspicuous innovation in many ways, and plainly marks an era in the terra cotta business of the West. The

first considerable amount of glazed terra cotta was used in the court of this building.

"In 1886, John Brunkhorst died, and his mantle fell on the shoulders of Fritz Wagner. The business was growing by leaps and bounds; the factory was extended from time to time, new kilns added, new adjacent property acquired, and great advances made in organization.

"The death of John Brunkhorst brought about the closing of the branch works in the old Loring factory. At the same time the firm name was changed to True, Hottinger and Company, the three surviving original partners —True, Rohkam and Hottinger—composing this new organization.

"In January, 1888, the business was incorporated under the name of the Northwestern Terra Cotta Company. The first President was John R. True. At the end of two years, he was elected Treasurer, and Mr. Hottinger became President, the change being made in order to give Mr. True more time to attend to the financial affairs of the Company.

"Gustav Hottinger, as President, took charge of all technical matters. John R. True, as Treasurer, managed the office and the financial affairs, and Fritz Wagner looked after the

estimating and selling, and had general oversight of production. Wagner was then, and indeed so continued to be, as long as he remained with the Company, the contact point with architects and customers.

"In 1891 it may be said that all four principals had developed with the business. They had become accustomed to the elegancies of life without losing their democratic leanings, and all looked the part of prosperous business men. True had enjoyed some civic honors, while Wagner and Rohkam had kept out of politics. True and Wagner had grown somewhat portly, but Rohkam and Hottinger had changed but little.

"In 1892 W. H. Junge, who at that time was Superintendent of the Boston Terra Cotta Company, was engaged, and assigned the task of building up a Drafting Department that would be adequate. The Company realized that economy of manufacture depended on proper preparation, and willingly followed the footsteps of the American Bridge Company in developing a really competent department.

"In 1894 Adolph Hottinger, the eldest son of Gustav Hottinger, became interested in the chemistry of clays, and the Northwestern soon began to see the possibility of realizing dreams,

cherished from the first, to make enamelled terra cotta. The first enamelled terra cotta front was undertaken for the Reliance Building, at the southwest corner of State and Washington Streets, Chicago. While no misgivings were entertained at first, the factory 'sweated blood' before this building was finished. The ambition to make enamelled terra cotta commercially possible had, however, at last been achieved.

"Enamelled terra cotta became popular at once, and such buildings as the Railway Exchange in Chicago, and the McCreary Stores in Pittsburgh, established the Northwestern reputation for all time.

"In December, 1896, Henry Rohkam passed away, and John R. True followed him in April, 1908, both sincerely mourned.

"After the death of John R. True, Gustav Hottinger continued as President, but delegated to his son, Adolph, who by this time had become one of the foremost ceramic chemists of the country, practically full oversight of all things pertaining to colors and burning.

"Mr. Wagner continued in charge of the general management, but took up also an oversight of the financial affairs of the Company. He built up gradually, beginning at

this time, a more conventional organization, both in office and factory.

"About 1905 Fred Ellersdorfer was made Superintendent, being the first to carry the title, and in 1911 Fritz Wagner, Jr., was made Assistant Superintendent.

"In 1907 Mr. Wagner's eldest son, Carl, entered the factory and later was made Secretary of the Company. He did valuable work, chiefly in relieving his father of a large amount of routine work.

"William Rokham, a son of Henry Rohkam, was part of the organization for some years, and was at one time Secretary of the Company. He withdrew from the business entirely in 1918. For some years Alfred Brunkhorst, a son of the founder, was in the employ of the Company as photographer, foreman and assistant in the laboratory. He became associated later on with the Midland Company.

"In 1911 Fred Ellersdorfer was promoted to an office position, and Theodore Schroer became Superintendent, Fritz Wagner, Jr., continuing as Assistant Superintendent.

"In June, 1915, Fritz Wagner withdrew from the Company, and his two sons, and also Fred Ellersdorfer and Theodore Schroer left at the same time.

"This occurrence made a complete reorganization necessary, and brought into the councils of the Company, Dr. Sherman Taylor, a son-in-law of Henry Rohkam; Horace L. Brand, who married the widow of John R. True, and H. J. Lucas, of New York City, formerly with the New York Company.

"Mr. Lucas was elected Vice-President and General Manager, and held these positions through three years of tentative and experimental reorganization, culminating in the sale of the True-Brand and Wagner interests to Mr. Hottinger and Mrs. Rohkam.

"In 1919 Gustav Hottinger, the sole surviving founder, is still President of the Northwestern, and his son, Adolph, is Secretary and Treasurer. Dr. Sherman Taylor fills the position of First Vice-President and Harry J. Lucas that of Vice-President and General Manager. George Lawson is the Superintendent.

"The Northwestern is now a large organization, officered and managed according to modern methods. It has played an important part in the development of a great national industry, and stands today, as it has always stood, for all that is best in architectural terra cotta."

CHAPTER XII

THE PACIFIC COMPANIES

UST after the Great Fire of Chicago, when the city was rapidly rising from its ashes, three enterprising young men were employed there by as many different contracting companies. The youngest of the three had been born about twenty-five years before on the banks of the St. Lawrence River, of Scotch parentage, and named after Peter McGill, who had been associated with his father and his uncles during the early part of the last century in felling the Canadian forests along the St. Lawrence and Ottawa Rivers. Soon after the first trans-continental railroad was opened, the young man with the

CHARLES GLADDING

Ralph McBean

Paul S. MacMichael.

Oswald Lowe

two Macs in his name went to California, where he remained for four years. Returning to Chicago two years after the Fire, on the first day of May, 1875, with Charles Gladding and George Chambers, Peter McGill McBean founded the now celebrated firm of Gladding-McBean Company, for the manufacture of clay products in California.

Chambers started at once for the Coast to superintend the erection of the new plant, on a plot of about five acres which had been purchased at Lincoln, 120 miles from San Francisco. The plant now covers four hundred acres, with a mile of railroad sidings in the works. McBean himself arrived at San Francisco about the middle of August, 1875, just as their first order was ready for delivery.

Mr. P. McGill McBean has written the following brief history of his Company:

"The firm of Gladding, McBean and Company erected in the early part of 1875, at Lincoln, Placer County, California, a small factory for the manufacture of vitrified clay pipe for sewerage. To meet the increased demands for their products, expansions were

made from time to time until the buildings and kilns covered about ten acres. The products also increased, including the manufacture of architectural terra cotta, face and fire brick, fire tile, conduit pipe, roofing tile, flue linings, terra cotta chimney pipe, tile for land drainage, hollow tile for building purposes, in addition to the vitrified clay pipe.

"During the year 1875 Charles Gladding and his son, Albert J. Gladding, superintended the manufacturing at Lincoln, while Peter McGill McBean managed the sales and financing at San Francisco.

"For some years prior to 1884, the Company made ornamental tiles and panels, but their first effort in architectural terra cotta was in June, 1884, for a two-story fifty-foot front building, which was erected for their own use at 1358-1360 Market Street, San Francisco. This was a light buff terra cotta, and was used for arches over the first and second story openings, for window sills, lintels, cornice, ornamental tiles, and name and street number panels—all costing about twelve hundred and fifty dollars.

"Wright and Sanders, who were the architects, were assisted by a young draftsman, who had recently arrived from Boston, where

he had had some experience in the use of architectural terra cotta. This was the first building erected on the Pacific Coast in which architectural terra cotta had been used for trimmings, and attracted much attention.

"The next work, which was in red, was made for a four-story building erected by the 'Society of California Pioneers' at the corner of 4th Street and Pioneer Place, San Francisco. This terra cotta was fabricated about the middle of 1885 and the contract price was forty-five hundred dollars. The work was very artistic, and consisted of busts of pioneers prominent in the early history of California, also panels descriptive of '49' camp life, or mining scenes, California animals, etc. Wright and Sanders were the architects. F. Marion Wells, a sculptor of note in his day, made the models as well as the moulds. Both of these buildings were burned in the Great Fire of 1906.

"During the next few years the terra cotta business rapidly increased and extended to the larger cities throughout California, Nevada, Utah, Arizona, Oregon, Washington, British Columbia and Hawaii.

"The following are a few of the prominent Pacific Coast and other buildings for which

the Company has furnished the architectural terra cotta: Metropolitan Life Insurance Company, San Francisco, California; Los Angeles Trust and Savings Bank, Los Angeles, California; Oakland City Hall, Oakland, California; United States National Bank, Portland, Oregon; Old National Bank, Spokane, Washington; Deseret National Bank, Salt Lake City, Utah; Orpheum Theatre, Kansas City, Missouri; Vancouver Block, Vancouver, British Columbia; Mitsubishi Bank, Tokyo, Japan; Union Steamship Company Building, Sydney, Australia.

"The major part of the factory and practically all of the machinery were destroyed by fire 29 July, 1918. All have since been replaced with modern buildings, suitably equipped for the economical manufacture of the Company's various clay products."

The 22 March, 1886, the business of Gladding and McBean was incorporated under the old firm name, with Charles Gladding as President; George Chambers, Vice-President, and Peter McGill McBean, Secretary and Treasurer. Charles Gladding died 17 January 1894, and George Chambers, 15 October 1896. The present officers are: Peter McGill

J. D. Clark

Jno. F. Keenan

McBean, President; Albert J. Gladding, First Vice-President; George R. Chambers, Second Vice-President, and Atholl McBean, Secretary and Treasurer, the three last named all being sons of members of the original firm.

In 1864 Nehemiah Clark, one of the California Pioneers, who had learned his trade as a potter in the State of Ohio, started that business at Sacramento, having previously become the owner of valuable clay deposits in Amador County. In 1866, he also started a sewer pipe plant at the same place. In 1882, a co-partnership was formed under the name of N. Clark and Sons, and his two sons, George D. and Albert V. Clark, became members of the firm. In 1887 a large plant was built at West Alameda for manufacturing sewer pipe and fire brick, the intention being to handle interior trade from the Sacramento plant and the "Bay Cities" from the Alameda works. However, shortly afterwards the Sacramento plant was destroyed by fire and never rebuilt. After that the West Alameda plant was very much enlarged, especially in

the architectural terra cotta department, and was one of the finest on the Pacific Coast, being thoroughly modern in every respect. The first contract for architectural terra cotta executed was in 1896, for the Union Depot, foot of Market Street, San Francisco. The Alameda works were burned 28 July, 1917, and were not immediately rebuilt, owing to war conditions. Immediately after the close of the War, construction was commenced, and the plant will be fully rebuilt and in operation by the end of the year 1919. The Company owns large clay deposits, and manufactures a full line of clay products. The business was incorporated 11 January, 1889, under the name of N. Clark and Sons.

The Denny-Renton Clay and Coal Company was incorporated in June, 1905. The business dates back to 1882, at which time it was organized under the name of the Puget Sound Fire Clay Company. Later on the business was taken over by the Denny Clay Company, which operated same until 1905, when the present Company was organized, tak-

ing over the business of the Denny Clay Company, which included a plant at Van Asselt for the manufacture of vitrified brick, vitrified sewer pipe and press brick; a plant at Taylor, Washington, manufacturing vitrified sewer pipe, press brick and a general line of clay hollow ware; and the vitrified paving brick plant of the Renton Clay Works located at Renton, Washington.

In 1912 the new Company bought out the business of the Western Clay Company and the Diamond Brick Company of Portland, and now operates all of these works under the one management. The product of these plants is shipped all over the Pacific Northwest.

The paving brick plant at Renton holds the record of being the largest single-unit plant in the world, its product being shipped as far away as South Africa. At the Van Asselt plant, which is located inside the city limits of Seattle, are manufactured architectural terra cotta, silica brick and magnesite brick. The silica and magnesite plant capacity was increased in 1919 and is now in shape to supply the growing demand for these products.

One of the new companies of the great Northwest is the Northern Clay Company, of Auburn, Washington, about twenty miles south of Seattle. It was incorporated in October, 1908, and took over the interests of the Northern Clay Products Company started by Arthur H. Meade in May, 1903, and known as the Auburn Pottery. The Company owns large and valuable clay deposits, besides the two acres on which the plant is located. The President, Paul S. MacMichael, is a very capable man, who had a number of years' experience in the East in the terra cotta business.

Mr. MacMichael has furnished the following brief history of his Company:

"About the year 1880 a pottery was established at Auburn, which occupied the site now known as the Northern Pacific Railway triangle. It changed hands several times, but continually secured its clay from the pits now operated by the Northern Clay Company. It finally came into the possession of Mr. Arthur Meade, who erected a new plant on the northern edge of the city, and operated under the name of Meade's Pottery.

"In 1905, the Northern Clay Products Company was organized by Ernest Madison, Samuel Geijsbeek, Anton Richter and William Winkle, who had all previously been in the employ of the Winkle Terra Cotta Company, of St. Louis. They leased the Meade Pottery and began the manufacture of architectural terra cotta.

"In 1908, the Northern Clay Company was organized. The plant and the fifty-acre tract on which the clay pit is located were bought from Mr. Meade and the business of the Northern Clay Products Company was taken over. Paul S. MacMichael was made President, in which office he has continued to the present time. Anton Richter is the only one of the original organization who still remains with the Company.

"In the Spring of 1910, Mark Ogan became associated with the Company, as chemist. Previous to this, the Company had manufactured only standard finish terra cotta, but largely as a result of his careful work, the Company firmly established, and has since maintained, a reputation for producing high-class glazed-finish terra cotta. It was Mr. Ogan's intention to become identified with the Company in an official capacity, but in

April, 1911, he had an attack of appendicitis, to which he succumbed 11 May of that year."

In 1889 the Washington Brick and Lime Company was started by James H. Spear, who was the President, with his son, L. A. Spear, as Secretary and Treasurer. Later this Company was consolidated with the Spokane Sewer Pipe Company under the name of the Washington Brick, Lime and Sewer Pipe Company. The new Company built a large sewer pipe plant at Spear, east of the city, which was badly damaged by fire in 1917, but has since been rebuilt. They also have a brick plant at Freeman, a lime plant at Bayview, Idaho, and a brick and terra cotta plant at Clayton, which was burned in 1897, but was rebuilt. All of the plants are modern and up-to-date in every respect, with extensive equipment for the manufacture of the different lines of material which they handle.

In May, 1919, the Spears sold their interests and retired from the Company, and the following officers were elected: A. B. Fosseen, President; Victor E. Piollet, Vice-President;

C. P. Lund, Secretary, and E. C. Van Brundt, Treasurer.

The Los Angeles Pressed Brick Company is the youngest member of the National Terra Cotta Society, having been elected at the Atlantic City meeting in June, 1919. The Company was incorporated in March, 1903, being a successor to the Los Angeles Pressed Brick and Terra Cotta Company, of Santa Monica, which had been in existence for many years. The Company owns and operates four large and complete clay products plants, manufacturing architectural terra cotta, face and enamelled brick, roofing tile, hollow tile, refractories, sewer pipe, and common brick.

The original plant of the Company outgrew its small quarters at Cleveland and College Streets, Los Angeles, and moved to its present site of approximately eleven acres in 1902. At this plant it has a total of 31 kilns. The Santa Monica plant was taken over from the Sunset Brick and Tile Company in 1904 and embraces 57 acres of land, with 12 kilns. The plant at Point Richmond, California, was

built and in operation in 1907. At this plant are manufactured face brick and common brick only. The fourth plant, at Alberhill, the second largest, was built in 1916, and is considered by competent authorities to be a model plant. Face brick, refractories and hollow tile are made at this factory.

From 1887 to date the Company has supplied practically all of the large face brick orders in Los Angeles and Southern California. Nearly all of the large down town mercantile and other buildings have been erected with their face brick and hollow tile. In addition, they have furnished many large contracts throughout the State, also have many fine examples of their work throughout Arizona, Utah, and some in Oregon and Washington.

The business was founded by the late Charles H. Frost, a Los Angeles pioneer, who was President of the Company from 1887 to 1913. His son, Howard Frost, is now President; H. West Hughes, a physician, is Vice-President, and Harlow B. Potter is the Secretary and Treasurer.

CHAPTER XIII

CERAMIC DEVELOPMENT

IT is now only half a century since the first company for the manufacture of architectural terra cotta was incorporated at Chicago. During the earlier days the business was very small. At the end of twenty years, in 1890, it had increased to about a million dollars a year, and at the end of the century, to about two millions. The next decade showed a very remarkable increase, reaching a total production in 1912 of over eight million dollars. The large demand for architectural terra cotta during this period was undoubtedly due to a very great extent to the development of the Ceramic side of the busi-

ness. The general use of soft coal for burning, particularly in the West, makes it very desirable to employ for the exterior of buildings a material which can be readily cleaned, and architectural terra cotta best answers this purpose.

The use of glazes was first brought to Europe by the Spanish Moors, who derived it from India, where it was introduced from China. In the 12th century glazed decorative tiles were made in northern France by the Normans, after their return from the Crusades. The Normans were always quick to seize upon every art that would add to the beauty of their buildings, and when the Crusaders visited Syria and Palestine, where they found many buildings richly ornamented with glazed tiles, they were attracted by this new architectural feature, and carried back with them detailed drawings and specimens of glazed tiles, and also probably some knowledge of their manufacture. Many buildings of this period, like the Hunting Gallery of St. Louis at Fontainebleau, show curious specimens of Norman tiles,

which were also introduced into England at the time of the Conquest.

It is certain that the art of enamelling, which in Europe first reached great perfection in the Island of Majorca, was derived from the Moors in Spain. Afterwards for a long period the art was lost, but in the 15th century it was revived at Faenza in Italy, whence the French turn faience, now much used, was derived. Great improvements in the art were made by the celebrated Luca della Robbia who was born at Florence in 1400, and died soon after reaching four-score years. After his death the secret of his method of enamelling was very carefully guarded by his family, and was a source of great profits to them.

About a century later, Bernard Palissy, a Frenchman, invented the celebrated ware called by his name. This was similar to the Robbia productions, but differently ornamented, and was remarkable for its beautiful and delicately blended glazes.

Not long after Palissy, the Dutch began the production of their Delft-ware, which was sim-

ilar in design to the Robbia and Palissy wares, but much inferior in beauty and grace.

The revival of this art in England dates to the latter half of the past century, when the manufacture was brought to a high state of perfection by the well known firm of Minton and Company.

In the production of decorative tiles in the United States much credit is due to John G. Low, the founder of the Low Art Tile Works. Mr. Low was born in Chelsea, Massachusetts, in 1835, where five generations of the same name had preceded him. From 1851 to 1877 he devoted himself to various lines of painting, commencing with fresco and decorative work. In 1858, at the age of 23, he went to Paris, where he studied for three years with Thomas Couture, and with M. Troyon, the celebrated cattle painter. In 1877 he became deeply interested in ceramic manufactures, and the following year formed a co-partnership with his father, Hon. John Low, and at once commenced the erection of a tile manufactory in his native place. Having never seen

a tile made in any factory, he began experimenting on purely original lines and soon overcame the mechanical difficulties which presented themselves.

In a little more than a year after the works were started, we find this little firm in competition with English tile-makers at the Exhibition at Crew, Stoke-on-Trent, which was conducted under the auspices of the Royal Manchester, Liverpool, and North Lancashire Agricultural Society, one of the oldest in England. There they won the Gold Medal over all the manufacturers of the United Kingdom for the best series of art tiles exhibited. This record, probably unsurpassed in ceramic history, serves to illustrate the remarkably rapid development of the industry in America.

The first terra cotta produced in the United States was either red or buff in color, the natural shades of the burnt clay. In many cases, as in the old Trinity Building on lower Broadway, New York City, the work was painted brown to imitate the brown-stone at that time so much in vogue. About 1888 a clay

was discovered at Clayton, Massachusetts, just north of the Connecticut line, which burned a pure white, and the White Terra Cotta Company was organized to put this ware on the market. It was found however that the clay was too refractory to be burned in muffled kilns unless mixed with buff clay, which had to be brought from New Jersey. This made the cost of manufacture so high as to be prohibitive, and after a brief existence the White Company went out of business.

The new shade of terra cotta proved very popular with architects and was frequently specified. To meet this demand, the Perth Amboy and New York Companies began the manufacture of a white terra cotta made with a light buff body sprayed with a coating of white, which had immediate success. Examples of this work may be seen in the Madison Square Garden, the Hotel Imperial, and the "Herald" Building, made by the Perth Amboy Company, and in the Harrigan (now the Garrick or French) Theatre, the Fifth Avenue Theatre, and in the old Colonial Club, now the Lincoln Trust Building, at 72nd Street and

Broadway, made by the New York Company, all between 1889 and 1892.

About 1894, the Perth Amboy Company began experimenting with glazes. Prior to that time the only glazed work used in building was in the form of enamelled tiles or bricks, which were mainly employed for interior decoration, or in courts or air shafts. The manufacturers of enamelled brick at that period were quite well satisfied with their product if in the average run of the kilns they got thirty per cent of "firsts" or perfect bricks, and sixty per cent of bricks more or less crazed, which were sold as "seconds," the balance being practically unsaleable. This will give an idea of the problem which confronted the terra cotta manufacturer. Owing to the great shrinkage of the moist clay body in drying and burning, the difficulty was to find a surface glaze which would not become cracked or crazed during the process. The difficulties in the case of terra cotta were also far greater than with bricks, on account of the much larger size of the pieces, and also due to the fact that in the case of terra cotta, each piece

is made for a particular building, and for a certain place in that building. Therefore, in order to make the manufacture profitable, a much higher degree of success was essential than in the case of bricks or tiles.

The Perth Amboy Company engaged a ceramic chemist who had had some experience along other lines, and agreed to pay his salary and all expenses during the time spent in experimenting, with the understanding that if success was attained the formulæ were to be the property of the Company. After several months a very fair result was obtained, but the chemist refused to turn over his formulæ. He was at once discharged and the work had to be done all over again with another man. This time the results were satisfactory from every point of view, and the manufacture of glazed terra cotta began.

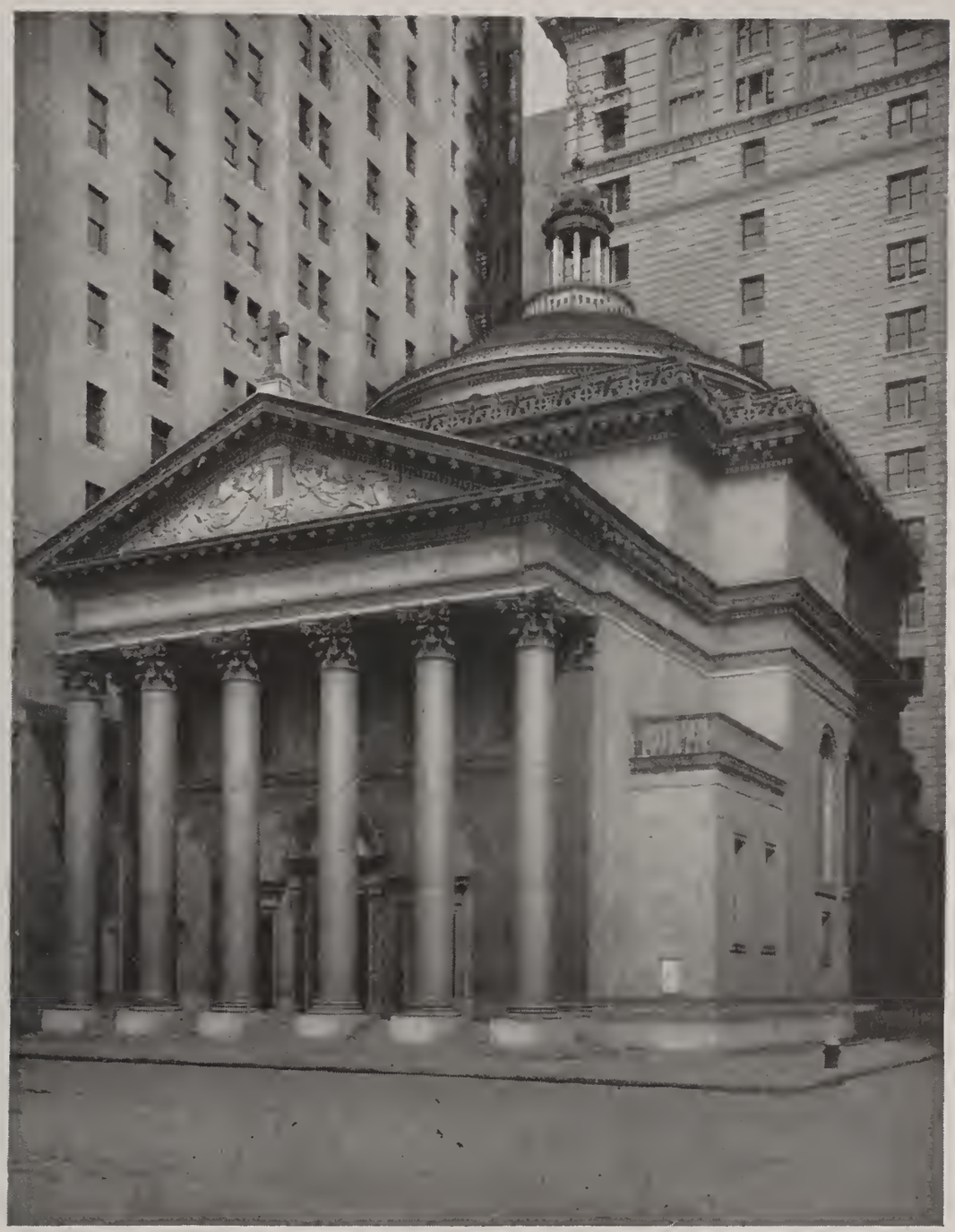
Mr. Stuart R. Audsley, of the Atlantic Company, has contributed the following interesting notes regarding the development of glazed and polychrome work by the Perth Amboy Terra Cotta Company:

"In 1882 William C. Hall secured the services of Harry Capon, from Tamworth, England, to manufacture full white glaze bricks. Capon finally succeeded in making a brick fully equal at that time to the English brick produced in Staffordshire, but when he came to make an arrangement with Mr. Hall, as to just what his compensation would be in the future, no agreement could be reached, and Capon either severed his connection with the Company, or Mr. Hall severed it for him.

"Several years after this, Hall again attempted to enter into the manufacture of glaze brick by having Jacob Bramm make extensive experiments. Bramm succeeded in producing a good brick, but as in the case of Capon, he could not reach an agreement with Mr. Hall. These two cases are mentioned in order to show that it was Hall's constant effort to do something new in the clay-making line and bring it up to a par with the products manufactured in England.

"Although exhaustive experiments were made for glazed bricks by Jacob Bramm and others employed by the Perth Amboy Company, no effort was made to glaze terra cotta until some time after T. C. Booth entered the employ of the Company, about the year 1894,

as it was thought that it could not be done without first biscuiting the ware, an expensive and lengthy operation. Booth came from England, his father and grandfather both being English potters. He came over here with his father, with the object of setting up a factory at Tarrytown, New York, to make Majolica art objects. He told William C. Hall he thought he could develop a glaze that could be applied to the green ware, and burnt in one operation. He was told to go to it and spare no expense to obtain that result. In a few months Booth developed a cream white full glaze that proved a success. The late Stanford White, and Bruce Price, at that time were keenly interested in glazes, as applied to architecture, and were especially anxious to obtain a dull white enamel that would have the texture of marble. Booth finally hit upon the idea of applying his full glaze in heavy coats and sandblasting the surface to obtain the matt effect desired. The first order of any size to be made in a sandblasted cream white glaze was manufactured in 1897,—the gate and fence posts and trimmings to the stables for the Gould estate, Lakewood, New Jersey, Bruce Price, architect. The next large orders were the Oelrichs residence at Newport, Rhode Island; Fairmont



MADISON SQUARE PRESBYTERIAN CHURCH

Hotel, San Francisco, California, and the Candler Building, all of which were made in cream white full glaze, sandblasted.

"Mr. Booth, as above stated, entered into the employ of the Perth Amboy Terra Cotta Company in 1894, and at once started in making experiments in glazes and colors. In a few months he succeeded in developing a number of useful colors suitable for the decoration of buildings, but it was not until 1898 that there was an opportunity to try some of them out on a large scale. Shades of pink, yellow, brown, gray, white and cream white were selected by Harding and Gooch, architects for the Dun Building café, Broadway and Reade Street, New York. With the exception of the pink, all of these colors were lightly sandblasted. The order was received in January 1898. Next came the Kelly and McAlinden Store, Smith Street, Perth Amboy, New Jersey, ordered in April 1898. This building was originally designed by Harry King, architect, of Newark, New Jersey, for plain light gray terra cotta without any ornament. As Mr. Hall was keenly interested in polychrome effects in buildings, and was anxious to have something more convincing to show architects than samples, he made the proposition to Kelly and

McAlinden that if they would allow him to redesign the street elevation of their new building, he would agree to give them in place of plain terra cotta, a matt finished glazed front, elaborately ornamented and artistically picked out in color, for the same money. Needless to say, this proposition was accepted. Mr. Hall employed Mr. Fox, an architect of Boston, to redesign this front elevation in polychrome terra cotta, of the early Italian Renaissance. Mr. Hall's selection of Mr. Fox was a happy one, for he had just returned from a year's sojourn in Italy, studying color effects used by the old masters, and he was considered at that time to be an expert in color effects as applied to architecture. His design turned out all that could be desired, and was greatly admired by numerous architects whom Mr. Hall invited down from time to time to inspect the plans and samples at the plant. The direct result of these visits was to arouse the ambition of a number of architects to do something in color, especially Stanford White, and he did something when he designed and used polychrome terra cotta in the Parkhurst Church. The Bannigan Memorial at Providence, Rhode Island, and the Chapel of the Redemptorist Fathers at Esopus, New York, were also the

outcome of Mr. Hall's tireless efforts to interest the architects in the use of polychrome terra cotta.

"The first white unglazed terra cotta used in any large building in the East was made at the suggestion of Stanford White for the Madison Square Garden in 1889. By 'white' is meant an unglazed white slip sprayed on a buff body. Buff unsprayed terra cotta was, of course, used long before that time.

"Prior to 1888 it was the custom to slip red and buff work either by dipping it in large tubs or applying the slip with a brush. In 1888 steam was used, and slips were sprayed. In 1893 compressed air was substituted for steam. It is believed that the first order on which sprayed terra cotta was used was that for the Eimer and Amend Building, northeast corner of Third Avenue and 18th Street, New York, DeLemos and Cordes, architects."

The finest contract of glazed and polychrome work ever turned out by the Perth Amboy Company was the Madison Square Presbyterian Church (generally known as Dr. Parkhurst's Church) which was manufactured in 1906 just before the Company was merged in the Atlantic combination. "The late Stan-

ford White," says an article in the New York "Sun," "never did anything of which he was more proud than the creation of that Romanesque gem of architecture."

The front was a triumph of restrained color. The blue in the pediment, the white of the angels, the dull-gold tops of the pillars, with blue behind, the splendid granite shafts of the columns, of a gray that was almost green, the apple-green overlaid with gold in the line of the eaves, the yellow and cream—yet all so quiet, so harmonious, so unobtrusive!

As these lines are written the church is in the hands of the building wreckers and is to be replaced by another sky-scraper to be used as an annex of the Metropolitan Life Insurance Company. It only seems a few days since the present site of the Metropolitan Tower was occupied by the old Parkhurst Church, built in 1854, while on the opposite corner, where the new church was soon to be built, stood the old brown-stone residence of Catherine Lorillard Wolfe, well known for her lavish charitable gifts, whose life-like portrait looks down today upon the visitor to the Metropolitan

Museum of Art. After her death the Insurance Company bought the house and arranged an exchange with the Church in order to complete its gigantic building which now covers the entire block. On the new site the chef-d'œuvre of Stanford White was erected, and now that too is to go. Fortunately, Donn Barber, the architect, has arranged to take most of the exterior material, including some of the terra cotta, to use in the new home for the Hartford "Times," which will have the most artistic newspaper office building in the country. The Saint Gaudens pediment on the front portico, with its wonderful polychrome terra cotta, is to be placed in the Metropolitan Museum, while Columbia University will take specimens of the exterior white brick, and terra cotta cornice, with their Romanesque detail, copied from old Renaissance models dug up by Mr. White in his exploration of Italian ruins, and will use them for educational purposes.

About the same time that William C. Hall began his experiments at Perth Amboy,

William D. Gates started a laboratory at Chicago. His attention had been attracted to the growing demand for a glazed ware, and he thought this would prove to be a cleanly and durable material, while at the same time allowing the use of color, and thereby create a new and more extended field for terra cotta endeavor.

Professor Orton, to whom the Art owes so much, had just started his Department of Ceramics at the Ohio State University, and Gates secured the services of Gorton who was one of the first graduates. From this School have come some of the ablest young men in the business today, notably Fred Ortman, for many years the head chemist of the New York Company, who now occupies a similar position with the Northwestern Company at Chicago.

Soon after beginning his experiments, Mr. Gates says that his attention was attracted to a peculiar green sample from the kiln in which he thought he saw possibilities. Carrying out experiments along this line he developed his pottery ware, which was named TECO, taking

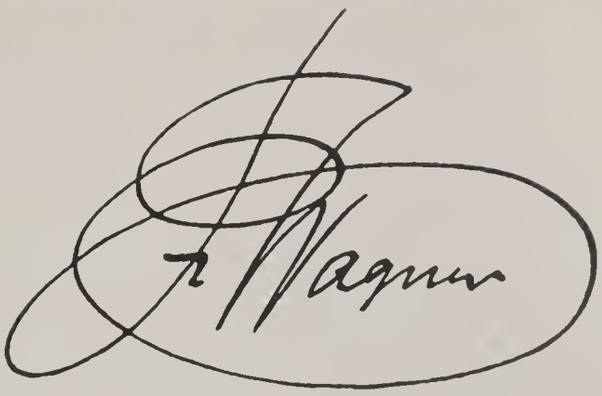
the first two letters of TErra and COtta and using the combination as a pottery mark. This peculiar green proved to be a color that harmonized with most surroundings and scored an immediate success. The Company for a time advertised the ware quite extensively and built up a very satisfactory business in art pottery, but lately it has had to neglect it for other business. The Company also produced some very interesting crystal ware, the formula of which it later gave to the American Ceramic Society.

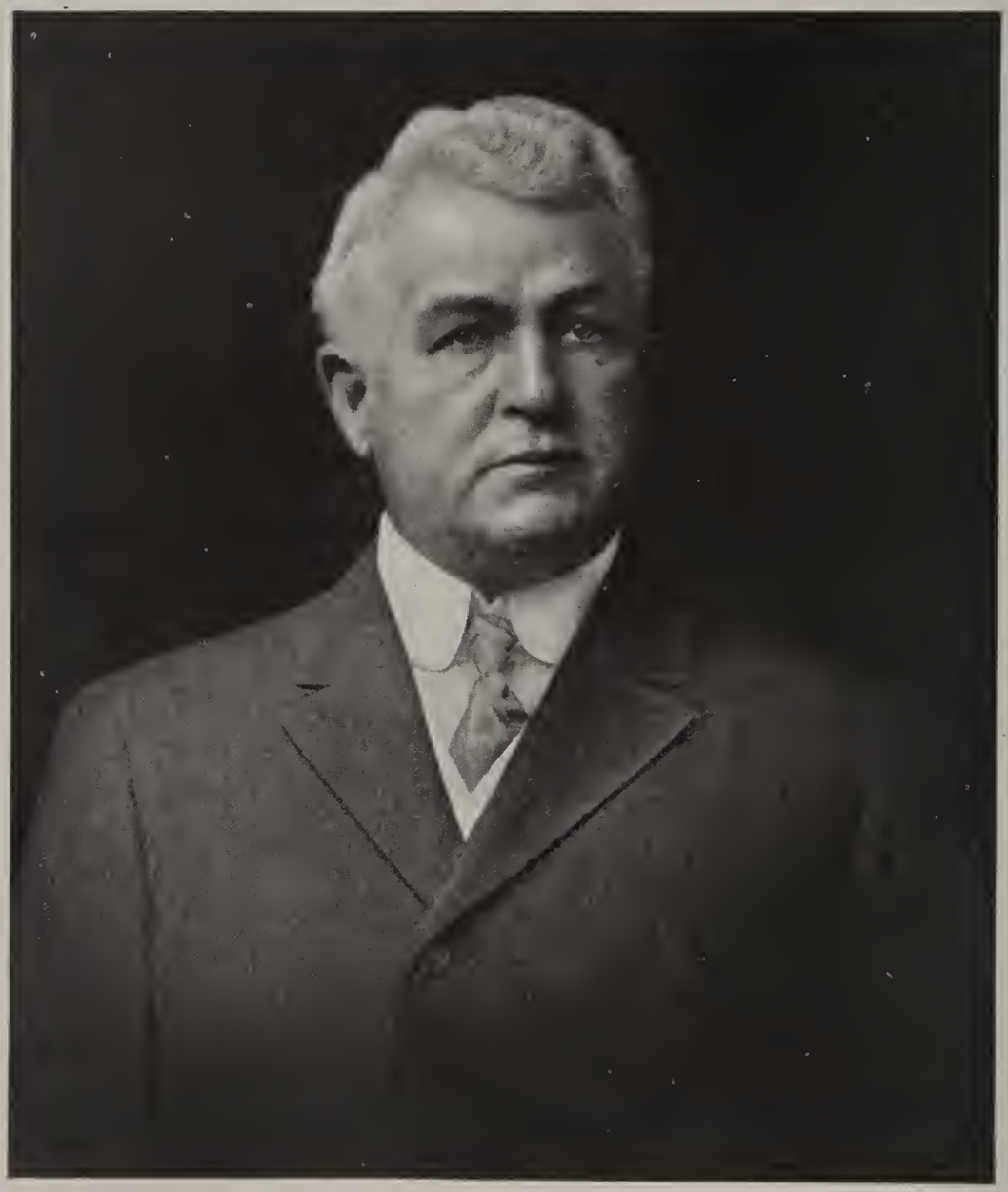
Too much credit cannot be given to Professor Edward Orton, Jr., for his work in starting the first State Ceramic School. A large amount of experimental work is done by the students that could not be done in any other way. One of his first graduates, Professor A. V. Bleininger, now connected with the United States Bureau of Standards, has grown to fill a most remarkable place in the Ceramic Arts. He is a man of the broadest scope and in him lies the greatest hope for the future of the Art.

CHAPTER XIV

ADVANTAGES OF TERRA COTTA

FOREMOST among the advantages of terra cotta as a building material, may be mentioned the facility it affords to architects to see the actual full sized details of the more ornamental portions of their designs before the work is burned, as, where no repetition is intended, no moulds are used, and the work which is afterwards to be burned, and take its place in the building, is the model itself. It thus bears the impress at once of the mind of the designer, and of the skill and knowledge of the modelling artist. It can be studied, improved, or modified, and when entirely satisfactory, burned.





Walter E. Dennison

It is therefore a far better reflex of the personality of the architect than can possibly be the case in any other building material. There is no other material which can be so readily impressed with the conception of the artist, as "Clay in the hand of the potter." No process in any handicraft is so beautiful as that of the modeller in clay. The ease with which the plastic clay answers to the touch of the hand, taking a whole succession of symmetrical shapes, and seemingly, as it were, instinct with the life and thought of the modeller, makes the art beautiful and striking beyond all others, in which the desired form can only be attained by comparatively slow and laborious methods.

Durability

A question which naturally suggests itself at once to architects and builders, in the consideration of terra cotta as a building material, is as to its durability. It is quite natural to compare terra cotta in this respect with stone. The query as to whether terra cotta can be ranked with stone

in point of durability may be unhesitatingly answered in the affirmative. It is without doubt the most durable material known. It is unaffected by age or climatic change. Glazed and enamelled surfaces render it practically impervious to moisture, and dust and dirt may be removed at trifling expense with dry brushes or plain water. Having been carried, during the process of manufacture, to a temperature exceeding 2000° Fahrenheit, it is untouched by the heat of conflagration. Government requirement for interior partitions is but 1700° Fahrenheit fire test. Salvage in the Baltimore, Buffalo and San Francisco fires was not only very high, and much greater than in any other exterior building material, but such damage as occurred was from mechanical causes and not from heat.

The fact that burnt clay of good quality is almost indestructible, is proved by the remnants of bricks and tablets discovered by Layard and Rawlinson in the ruins of Babylon, in an almost perfect state of preservation. A small statuette, taken from the ruins of ancient Thebes, which is believed to be not

less than thirty-three hundred years old, is covered with hieroglyphics as sharp and as perfect in outline and detail as the day it was carved and burnt. We have many modern illustrations also, in the magnificent old brick and terra cotta structures still to be found in different parts of England and the Continent, affording under the most trying conditions of climate, valuable evidences of the durable nature of terra cotta.

One of the choicest specimens of ancient terra-cotta in existence is exhibited in the South Kensington Museum in London. This is a medallion, eleven feet in diameter, bearing the arms of King René of Anjou, surrounded by a massive border of fruit and foliage, and is supposed to have been made in the year 1453. It was exposed to the action of the weather for more than 400 years, fixed in the front wall of a villa near Florence.

Another fine example is to be found in the Church of San Gottardo in Milan. During five centuries the tower of this church has braved the inclemencies of the seasons, without noticeable traces of decay appearing in

the terra cotta work, which is most elaborately carved and of delicate workmanship. A close inspection of this tower also reveals the interesting fact that the architect, mistrusting, perhaps, the resisting power of terra cotta against the stress of weather, took care to furnish the windows with quoins of stone as a protection—a vain precaution, as it is the stone work which has suffered from the assaults of time, and not the terra cotta.

Coats of arms of terra cotta, inserted in the walls of Hampton Court Palace, near London, which have been exposed for four centuries to an English climate, are practically unharmed by the action of the weather, while the brick and stone, and almost every other material used in the construction of the palace, is more or less worn and decayed.

In his report on the terra cottas exhibited at the Paris Exposition of 1867, Henry Cole says, with reference to the durability of the material: "It is more durable than even ordinary granite, as may be seen in the lodge in Merrion Square, Dublin, which was built about 1786. The granite mouldings there are

cut in stone from the Wicklow Mountains, and they are all worn away and rounded by the action of the rain, while Coade's terra cottas, dated 1788, are sharp as when they were first placed on this lodge."

Innumerable other examples might be cited, proving the superior durability of terra cotta for building, as well as for ornamental purposes, but the few cases referred to seem sufficient. It is a fact beyond dispute that in faithfully-made and well-burnt terra cotta, we have the great and only lasting triumph of Man over Nature. For timber will rot; stone, even granite, will disintegrate; iron will oxidize; these and all other materials will succumb to the action of fire; but properly made and thoroughly burnt terra cotta will pass through the centuries, and be the last to yield to those influences to which all natural productions must give way—the only material known which is not only practically fireproof, but also, in all architectural employments, time-proof and indestructible.

We cannot pay a more eloquent tribute to the durability of terra cotta than by quoting

a few sentences from Sir Charles Lyell's "Antiquity of Man." He says: "In the vast changes that this planet has undergone, few things remain to mark the arts of its earlier inhabitants. Flints, spear-heads, arrow-heads, fragments of iron, of bronze and of pottery are almost all that remain. Of the latter, burnt bricks, jars, vases, the human figure in burnt clay, are found in the remains of submerged towns in the channels of the Nile, and in Upper Egypt, in the Mexican buried ruins of America and elsewhere, as the enduring types of civilizations of peoples and races whose names even are not known in the pages of history. Granite disintegrates and crumbles into particles of mica, quartz and felspar. Marble soon moulders into dust of carbonate of lime, but hard, well-burnt clay endures forever in the ancient landmarks of mankind."

Indestructibility

It would be very interesting to trace the steady growth of the builder's art from the mud huts of primeval times to the magnificent

structures of the present day. In the first days of the human race, with forests almost untouched, and the necessity to clear the ground for cultivation, wood was almost universally used for building purposes. As the forests became exhausted, wood gave place to clay, to stone and to iron. As cities grew in size, and land became more valuable, buildings were erected closer together, and the danger from fire constantly increased. Architects and builders were thus led to pay more attention in construction to the use of imperishable materials. Necessity creates demand, and it became a necessity to construct large buildings and high buildings. Not less necessary was it that these buildings should be indestructible. The use of stone, for many years so universal, was found by experience to be not only expensive but dangerous.

The difficulty of obtaining a really durable building-stone, and the practical experience required in its selection, is well known to architects. "In erecting large buildings," says Arthur Beckwith, "it is difficult to supply

quickly enough stone of a durable quality from one quarry. Nearly all stone is not fireproof, but cracks when exposed to high heat. These causes, without deprecating the use of stone, point to the desirability of finding a durable fireproof building material, which can be relied on always and be supplied in large quantities. This presents an opening for the use of terra cotta—a material which has stood the crucial test of firing. The true qualities of terra cotta in its application to architecture consist in its merits as a decorative fireproof material, possessing the three essentials of color, durability and economy. When treated with due regard to construction, so as to fulfill its part in building as honestly as the brickwork of the wall itself, the high capacities of the material to receive artistic treatment admit of the impress of original art being reproduced for the uses of the architect, in an almost imperishable substance."

The great fires of Chicago and Boston, which occurred shortly after the above lines

were written, bore conclusive testimony as to the accuracy and wisdom of Mr. Beckwith's observations. Public safety, as well as economy, is fast demanding that buildings should be constructed of non-combustible materials. These facts, together with the late changes in the use of steel construction, have notably favored the increased use of architectural terra cotta. Well-made and thoroughly burnt clay is the only material thus far discovered which is practically indestructible by fire, and which has opposed all the other elements with the desired obstinacy. In this respect, terra cotta possesses an element of strength which is not shared either by stone or iron. Heat which would disintegrate stone or fuse iron has merely the effect of rejuvenating terra cotta, and giving it the bright, fresh appearance of having just left the kiln. Having passed through, in burning, a heat of over 2000° Fahrenheit, no heat to which terra cotta is ever likely to be exposed, even amidst the fiercest flames of a Baltimore or San Francisco fire, is able to affect it.

Lightness

Another important practical question is that of the comparative weight of stone and terra cotta, and consequently of the comparative cost of transportation, as well as of the expense in installation at the building. With terra cotta, unlike stone, no unnecessary or dead weight has to be carried. Stone is brought to the building in masses and there worked up, and the necessary quantity of waste makes an excessive amount of useless weight which has to be transported. With terra cotta, on the other hand, where the work is necessarily modelled in the workshops and studios of the manufacturer, and moreover is, for evenness in burning, made of moderate thickness and hollow, the weight to be transported is reduced to a minimum, and the work, having been fitted previous to shipment, once at the building, nothing remains but to set it in its proper place. Furthermore, the light weight of terra cotta allows a minimum of structural support, and means consequent saving of cost in frame and anchor-

age. Owing to perfect union in wall bonding, many city building ordinances now allow terra cotta wall facing to count as part of wall thickness.

Terra cotta, as manufactured in hollow blocks, weighs about 70 pounds to the cubic foot, or filled, from 100 to 120 pounds, while limestone weighs 144 pounds, sandstone from 140 to 165 pounds and granite 168 pounds per cubic foot. Where back-filling is necessary in setting, 120 pounds is an ample allowance in computing the dead weight of architectural terra cotta in the wall. From the above figures, it will be noted that terra cotta weighs very much less than the ordinary building stones. This is no small advantage, when we consider the reduction in freights, and the saving in costs of foundations and super-structure in the modern skyscraper.

Economy

Another valuable quality of terra cotta is the unusual opportunity which it offers for economy, in that it makes it possible for the finest ornamentation to be used at most

reasonable cost. For years elaborate ornament, on account of the high cost of hand carving, was only used in the most expensive structures. Now, by the use of architectural terra cotta, by making a plaster mould of one piece and pressing many pieces from the same mould,—the sculptor's model for cornice, pediment or frieze can be duplicated at relatively low cost. This process of repetition is such a saving that it makes feasible the employment of the best available talent for the creation of the original model. As a result, the most pleasing effects can be introduced with the utmost economy.

In many instances architects furnish accurately figured scale drawings only, perhaps further illustrated by rough sketch, or reference to style, period or example, relying upon the manufacturer and his staff trained in architecture, color, modelling and sculpture, for intelligent assistance in the development of his details.

A very important advantage of terra cotta lies in the fact that ornament and modelling may be used freely, as, with the model once

made, the material presses at practically no increase in cost over plain work.

Generally speaking, terra cotta costs considerably less than genuine stone, and possibly a trifle more than "artificial" stone. In the latter, equal perfection of line and modelling is absolutely impossible, and there is no comparison in point of durability.

A review of the process of manufacture of architectural terra cotta reveals the source of its economy—its plasticity and the facility with which it may be reproduced. A mould once made can be turned over many times. Care and thoughtfulness in the design of unit and feature with regard to reproduction, yield increased discounts in cost.

Coloration

The great growth in the popularity of architectural terra cotta during the present century is due in part to the rather tardy recognition of its many enduring qualities outlined above, in part to the requirements of modern steel construction, to which it is peculiarly adaptable on account of its combination of strength

and lightness, but perhaps most of all to the fact that, more than any other building material, it meets the demands of beauty and attractiveness. Even in buildings designed merely for utilitarian purposes there is a growing demand that the artistic sense be gratified. This idea is well expressed in the article on Architectural Terra Cotta, in "The Schools" of the Brochure Series, published by the National Terra Cotta Society:

"Architectural terra cotta because of its infinite possibilities as regards form, may be modelled to express the most delicate beauty and charm. It can be made in many tints and colors, and in limitless combinations of colors, and, what is equally important, it retains all of its original qualities. Dirt, smoke and soot do not permanently discolor its surface; they do no damage that cannot easily be undone by the application to the terra cotta of ordinary soap and water."

Development in the department of the ceramic chemist of the manufacturer has given so broad a range that almost any color or tone can be had, from the dead white, suggestive of Italian marble, through the cream

and buff shades into the grays—some closely assimilating the soft warm grays of the French Caen stone, and others the subtle charm of the marbles of Travertine. In texture and surface treatment there is no limit. The range extends from the natural clay finish made impervious with a slip, through matt or dull, to lustrous and brilliant enamels; and from the smooth or honed finish, through different degrees of tooling, dragging and stippling to any degree of roughness desired.

The field for the use of color or polychrome in terra cotta, for exterior and interior, is very broad, and the palette most extensive in tone and texture. The enamel applied to the unburned body becomes not only a part of and inseparable from it, but is absolutely permanent in tone.

In brief, there is no material employed in building which possesses to the same degree as architectural terra cotta the advantageous qualities of Plasticity, Durability, Indestructibility, Lightness, Economy and Coloration:

Plasticity—It permits the employment of

modelling, and the use of form and texture in any manner that serves the art of Architecture.

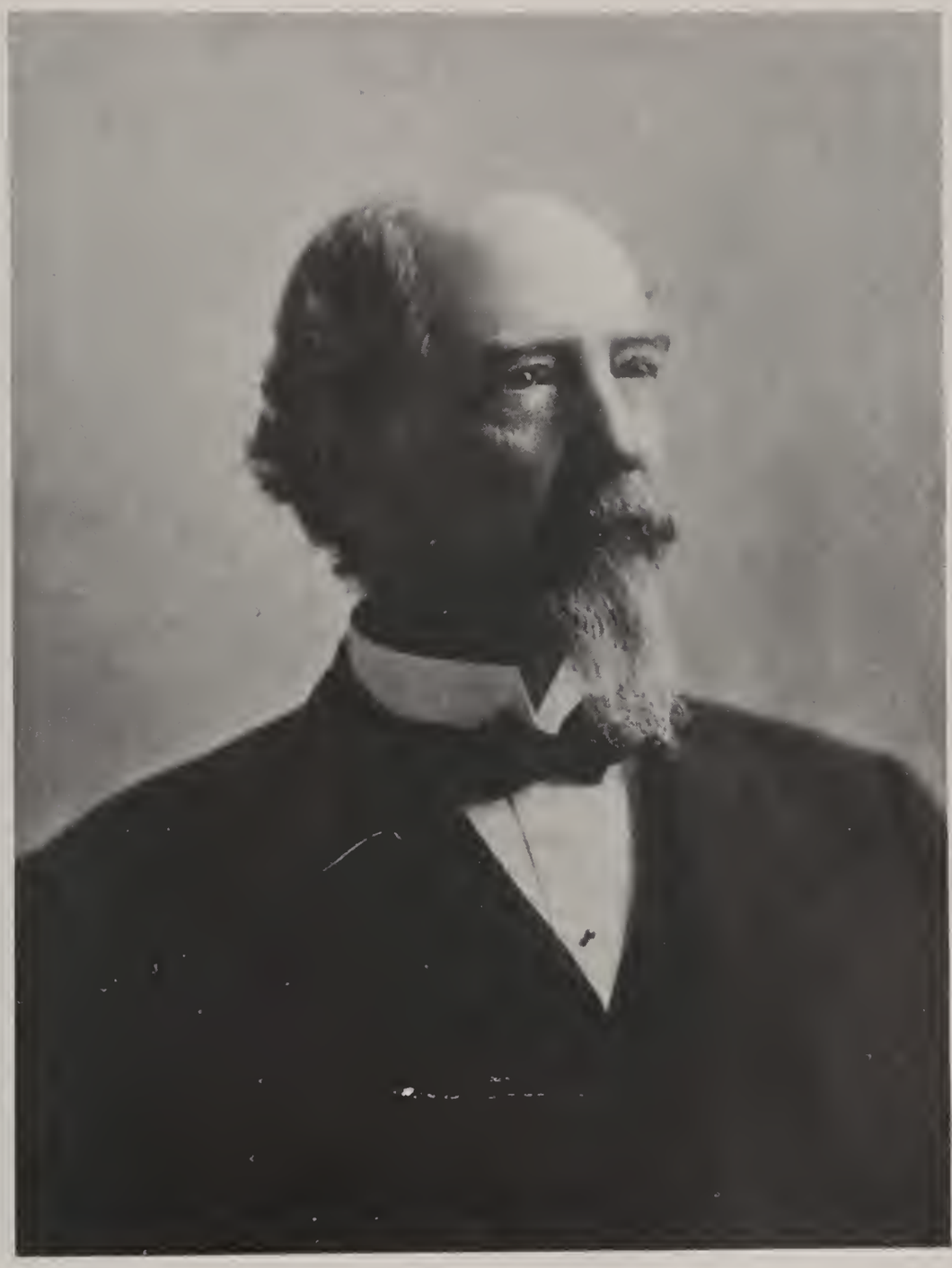
Durability—It does not melt, disintegrate or decay, and is therefore the most lasting product of Man or Nature.

Indestructibility — It is impervious to moisture, fire-resistant to the highest degree, and therefore practically immune against the action of Time and the Elements.

Lightness—It is not only light in weight but strong, and therefore admirably adapted for use in modern steel construction.

Economy—It greatly reduces the cost of foundation and superstructure on account of its lightness; it permits the combination of form, color and texture at a minimum of expense; and it gives the lowest cost of ornamentation, particularly where considerable repetition is used.

Coloration— It is supreme among building materials in the range of colors which it offers, and these colors are not only durable, but the surface can be restored at any time to its original freshness by the simple process of washing with soap and water.



JOSEPH WINKLE

WILLIAM MATHIASEN

CHRISTIAN MATHIASEN

CHAPTER XV

THE NATIONAL SOCIETY

THE following history of the founding of the National Terra Cotta Society is taken from the official records compiled by Harry J. Lucas at the time.

During the Fall of 1911, Walter Geer, of the New York Company, opened correspondence with all of the manufacturers of architectural terra cotta in the United States with the view of bringing about a National Organization. The replies received were so encouraging that a call, signed by Messrs. Geer, Hottinger and McBean, was issued for a meeting of representatives of the several Companies at Chicago on December 8, 1911.

A banquet arranged at the Hotel La Salle on Friday evening, December 8, was attended by twenty-three delegates from the various parts of the United States. After the dinner, William D. Gates, acting as Toastmaster, introduced the speakers, who deliver addresses on the subjects indicated:—

"Competition, Combination or Co-operation"
Mr. Geer

"The Chinese Wall of the Twentieth Century or the Modern Terra Cotta Plant" . Mr. Wagner

"Pacific Coast Conditions" . . . . Mr. Dennison

"Politics of Business and the Business of Politics" . . . . . Mr. Armstrong

The meeting of the delegates from the several Companies was called to order at Hotel La Salle on Saturday morning December 9, 1911, by Mr. Gates, and Mr. Wagner was elected Temporary Chairman and Mr. Lucas, of New York, Temporary Secretary.

A roll-call showed that the following 15 Companies were represented by 23 delegates:

Brick, Terra Cotta and Tile Company, Corning, New York—M. E. Gregory.

Conkling-Armstrong Terra Cotta Company, Philadelphia, Pennsylvania—I. L. Conkling and T. F. Armstrong.

Federal Terra Cotta Company, Woodbridge, New Jersey—De Forest Grant and Norman Grant.

New Jersey Terra Cotta Company, Perth Amboy, New Jersey—Karl Mathiasen and E. V. Eskesen.

New York Architectural Terra-Cotta Company, New York, New York—Walter Geer, F. C. Townsend and H. J. Lucas.

South Amboy Terra Cotta Company, South Amboy, New Jersey—P. C. Olsen.

American Terra Cotta and Ceramic Company, Chicago, Illinois—W. D. Gates and E. D. Gates.

Northwestern Terra Cotta Company, Chicago, Illinois—G. Hottinger and F. Wagner.

St. Louis Terra Cotta Company, St. Louis, Missouri—D. N. Burruss and R. F. Grady.

Western Terra Cotta Company, Kansas City, Kansas—Wm. Timmerman.

Winkle Terra Cotta Company, St. Louis, Missouri—Joseph Winkle and J. G. Hewitt.

Gladdings-McBean and Company, San Francisco, California—P. McGill McBean.

N. Clark and Sons, San Francisco, California—Mr. McBean (Proxy).

Northern Clay Company, Auburn, Washington—P. S. MacMichael.

Steiger Terra Cotta and Pottery Works, San Francisco, California—W. E. Dennison.

Letters pledging cordial support were read from the following five Companies, which later became Charter Members of the Society:

O. W. Ketcham, Philadelphia, Pennsylvania.

Maryland Terra Cotta Company, Baltimore, Maryland.

Indianapolis Terra Cotta Company, Indianapolis, Indiana.

Denny-Renton Clay and Coal Company, Seattle, Washington.

Washington Brick, Lime and Sewer Pipe Company, Spokane, Washington.

The Report of the Committee on Constitution and By-Laws was received, discussed and adopted (with some few amendments).

The Objects of the Society, as stated in Article 2 of the Constitution, were as follows:

OBJECTS

FIRST. To encourage the production of the best materials and the maintenance of high and uniform standards of work.

SECOND. To spread the knowledge of the many advantageous qualities of good architectural terra cotta by widely advocating its merits, particularly through the agency of

wise advertising and the publication of books, pamphlets and other forms of trade literature.

THIRD. To co-operate in the investigation and study of the more important technical and other problems of the business.

FOURTH. To advance mutual business interests in every legal and proper way, without in any manner, directly or indirectly, agreeing to maintain prices or suppress competition.

FIFTH. To promote a feeling of confidence and friendship among the members, so as to secure the benefits of the several objects above set forth.

The following officers were nominated and elected:

President - - - - -	Fritz Wagner
First Vice-President -	Walter Geer
Second Vice-President -	W. E. Dennison
Treasurer - - - - -	E. V. Eskesen
Secretary - - - - -	W. D. Gates

On motion of Mr. Hottinger, a vote of thanks was given to Mr. Geer for "his initiative and zealous efforts in bringing about the organization of the National Terra Cotta Society."

Since this first meeting at Chicago there have been fourteen other general meetings of the Society, six at Chicago, four at Atlantic City, and one each at New York, St. Louis, Denver, and New Orleans.

The Presidents of the Society have been Wagner, Powell and Gates; the First Vice-Presidents, Geer, Armstrong, Dennison and Gates; the Second Vice-Presidents, Dennison, Gates, Fackt and McBean; the Treasurer, Eskesen; and the Executive Secretaries, Lucas, Pendleton and McDaniell.

In addition to the 20 Charter Members, six other members have been admitted: Midland and Denver (1912), Kansas City (1913), Atlanta and Atlantic (1915), and Los Angeles (1919). Two members have resigned: Maryland (1915) and Steiger (1918). This leaves a present membership of 24 Companies.

The Society has adopted and is using Uniform Contract and Estimate Forms, and a Uniform Weight Schedule. It has also prepared for adoption a Uniform Cost Card, and is working on a Uniform Specification, for the use of architects.

It has exchanged Lists of Agents among its members and adopted a Code of Ethics.

It has conducted through the Bureau of Standards of the United States Government a very thorough investigation into the causes of failure in terra cotta work, and has had several very interesting and valuable reports on the subject from Professor Bates.

The formation of the National Brick Manufacturers Association, some thirty-five years ago, led to the organization of the American Ceramic Society, which in turn led to the establishment of Ceramic Departments in many of the State Universities, and had much to do with the scientific development of the terra cotta business. Finally, at the annual meeting of the National Terra Cotta Society held in Chicago, January, 1919, a Committee was appointed to co-operate with the American Ceramic Society in the formation of a Terra Cotta Division of that organization. Later, on the call of this Committee, a meeting was held at the Fort Pitt Hotel, Pittsburgh, at which there were present representatives of

nine terra cotta Companies, and also of the United States Bureau of Standards and the Ohio State University. A Council was chosen consisting of Fred B. Ortman (Northwestern), Chairman, R. L. Clare (Federal), E. C. Hill (Conkling-Armstrong), and B. S. Radcliffe (Midland). Since that date, all of the terra cotta Companies have become members. The report of the Committee presented at the Atlantic City meeting in June, 1919, stated that a total of fifteen separate and distinct subjects were then being investigated, covering practically all phases of terra cotta manufacture. At the same meeting a new Standing Committee on Technical Matters was appointed by the Society to co-ordinate the work of the National Terra Cotta Society with that of the Terra Cotta Division of the American Ceramic Society.

The Society has published two large editions of "Standard Construction," besides a series of very elaborate Brochures on "Theatres," "Schools" and "Store Fronts," of which new and revised editions are now ready

T. S. Bissett

for issue. It also has in hand similar Brochures on "Banks" and "Garages."

In connection with the publications of the Society, special mention should be made of the excellent work of Peter C. Olsen, Chairman of the Publicity Committee. All of the publications of the National Society have been prepared under the supervision of Mr. Olsen, and are a lasting memorial to his genius. In recognition of his services in this connection, a fine silver service was presented to Mr. Olsen by the Society at the Meeting at Atlantic City in June, 1914. Reference should also be made to the fine work done by Samuel B. Orth in connection with the preparation of the drawings in "Standard Construction."

A word of appreciation is also due to the memory of the late Arthur Rogers, of Boston. Under many difficulties and discouragements he founded and for many years maintained a very high-class trade journal, which was a credit both to himself and to the industry. In the "Brick-Builder" he conducted a series of competitions for the best designs of terra cotta and brick buildings, which were of great

benefit in interesting young architects and draftsmen in the use of these materials. He was always ready to give liberally both of his time and money for any object which would benefit the cause which he had so much at heart. In his death the manufacturers of terra cotta have lost one of their oldest and best friends.

At the Conventions of the Society, addresses have been made and papers read on many subjects germane to the business.

A series of advertisements was published at large expense in the "Saturday Evening Post," and a very extensive promotion campaign is now being conducted in the Middle West.

From the above brief summary of the Society's activities, it will be seen that the Objects stated in its Constitution have been well carried out.

CHAPTER XVI

THE SOCIETY MEMBERS

FOLLOWING is a complete list of the Members of the National Terra Cotta Society, arranged according to location, and in the order of incorporation, with brief Histories of the Companies, the names of present Officers, and lists of prominent Buildings for which terra cotta has been furnished:

Eastern

1886 NEW YORK ARCHITECUTRAL TERRA-COTTA COMPANY, 401 Vernon Avenue, Long Island City, New York.

History: The New York Company was founded 23 January, 1886, by Orlando Bronson Potter and Asahel Clarke Geer. The Plant occupies a five acre plot on the

East River, just south of the Queensborough Bridge, in Long Island City, Borough of Queens, New York City.

OFFICERS: Chairman of the Board, Walter Geer; President, Richard F. Dalton; Vice-President, Ferdinand C. Townsend; Vice-President and Treasurer, Walter Geer, Jr.; Secretary, John P. Geib, and Superintendent, John Clark.

BUILDINGS: Rivoli Theatre, New York City; Ritz-Carlton Hotel, Philadelphia; Statler Hotel, Detroit; Municipal Building, Dallas, Texas; Valley National Bank, Des Moines, Iowa, and H. Birks and Son Building, Vancouver, British Columbia.

1893 NEW JERSEY TERRA COTTA COMPANY, Singer Building, New York City.

HISTORY: The New Jersey Company was incorporated 26 November, 1893, a successor to the firm of Mathiasen and Hansen, which began business in 1888. The Works are located at Perth Amboy, New Jersey.

OFFICERS: President, Karl Mathiasen; Vice-President-Treasurer, Eckardt V. Eskesen, and Secretary, Karl Mathiasen, Jr.

BUILDINGS: Hotel Vanderbilt, Montefiore Home, and Uptown Post Office, New York City; Palace Theatre, Cincinnati, Ohio; Miami Hotel, Dayton, Ohio; and Poli's Palace Theatre, Hartford, Connecticut.

1895 CONKLING-AMSTRONG TERRA COTTA COMPANY, Wissahickon Avenue and Juanita Street, Philadelphia, Pennsylvania.

HISTORY: The Conkling-Armstrong Company was founded in January, 1895. by Ira L. Conkling and Thomas

F. Armstrong, who had been members of the old firm of Stephens, Armstrong and Conkling (1888). Conkling, until his death in 1915, was the President, and Armstrong the Treasurer. The Plant occupies a plot of over three acres.

OFFICERS: President, Thomas F. Armstrong; Vice-President, Albert R. Taylor; Secretary, Joseph J. Frederickson, and Treasurer, Samuel O. Conkling.

BUILDINGS: Broad Street Station, Baptist Publication Building and Bulletin Building, Philadelphia; Wanamaker Store, and Bowling Green Building, New York City, and Filene Building, Boston, Massachusetts.

1895 ATLANTA TERRA COTTA COMPANY, Third National Bank Building, Atlanta, Georgia.

HISTORY: The Atlanta Company was organized in 1895 by Victor H. Kriegshaber. It was a successor to the firm of Pelligrini and Castelberry (1875), the second oldest terra cotta plant in the United States. The stock control was acquired by the Atlantic Company in 1908. The Plant occupies a plot of about twenty acres at East Point, about seven miles from Atlanta.

OFFICERS: President, William H. Powell; Vice-President, William C. Hall; Vice-President and General Manager, Harold B. Wey; Secretary-Treasurer, H. D. Hurlbut.

BUILDINGS: Masonic Temple, Augusta, Georgia; Union National Bank, Columbia, South Carolina; City Hall, Tampa, Florida; County Court House, Houston, Texas; Ansley Hotel, and Terminal Station, Atlanta.

1896 BRICK, TERRA COTTA AND TILE COMPANY, Corning, New York.

HISTORY: Established in 1893 under the name of the Corning Brick, Terra Cotta and Supply Company, and also known at different periods as the Corning Brick Works and Corning Terra Cotta Works. In 1896, the business was acquired by Morris E. Gregory, who adopted the style of Brick, Terra Cotta and Tile Company, by which the company has since been known.

PROPRIETOR: Morris E. Gregory.

BUILDINGS: War College, Washington, District of Columbia; Hotel Seneca, Rochester, New York; Hotel Utica, Utica, New York; Kalura Temple, Binghamton, New York; State Normal College, Albany, New York, and Dormitory Columbia College, New York City.

1903 SOUTH AMBOY TERRA COTTA COMPANY, 150 Nassau Street, New York City.

HISTORY: The South Amboy Company was founded by the present officers 29 April, 1903, and began business at once, having leased the plant known as the Swan Hill Pottery at South Amboy, one of the oldest clay manufacturing plants in the East. The Plant was purchased in 1905, and has since been entirely modernized and enlarged both as to new buildings, and general power equipment. It now covers about three city blocks.

OFFICERS: President, Christian Mathiasen; Vice-President, William Mathiasen, and Treasurer and General Manager, Peter C. Olsen.

BUILDINGS: Vancouver Terminal Station, Vancouver, British Columbia; Bush Terminal Building, and Lotus Club, New York City; Fireman's Insurance Build-

ing, Newark, New Jersey; Commercial National Bank, Charlotte, North Carolina, and Fourth Church Christ Scientist, Cleveland, Ohio.

1906 O. W. KETCHAM TERRA COTTA WORKS, Builder's Exchange, Philadelphia, Pennsylvania.

HISTORY: This business was founded in July, 1906, by O. W. Ketcham, who had been connected with the former Boston Company, and had later been a dealer in building supplies, acting also as local agent at Philadelphia for the Excelsior Company. The Plant is located at Crum Lynne, Pennsylvania, just north of Chester, on the line of the Pennsylvania Railroad.

PROPRIETOR: Orman W. Ketcham.

BUILDINGS: Chestnut Street Opera House, and many Public Schools, Philadelphia, Pennsylvania; Masonic Temple, Wilkesbarre, Pennsylvania; Masonic Temple, Camden, New Jersey, and Masonic Temple, Worcester, Massachusetts.

1907 ATLANTIC TERRA COTTA COMPANY, 1170 Broadway, New York City.

HISTORY: The Atlantic Company was incorporated in February, 1907, being a consolidation of three former Companies:—Perth Amboy (1879), Excelsior (1894) and Atlantic (1897). The Standard Terra Cotta Works was purchased in 1907. The Atlantic Company acquired a controlling interest in the Atlanta Company (1895), in 1908, and now owns all of the stock. The Plants are located at Tottenville, Staten Island, Perth Amboy and Rocky Hill, New Jersey, and Atlanta (East Point), Georgia. It is the largest manufacturer of architectural terra cotta in the world.

OFFICERS: President, William H. Powell; Vice-Presidents, Frank G. Evatt and W. C. Hall; Secretary-Treasurer, George P. Putnam; Assistant Treasurer George Parsons, and Assistant Secretary, Arthur G. Bisdale.

BUILDINGS: Woolworth Building, and McAlpin Hotel, (Exterior and Grill Room Interior), New York City; Union Central Fire Insurance Company Building, Cincinnati, Ohio; Healey Building, Atlanta, Georgia, and Masonic Temple, Brooklyn.

The Woolworth Building, famous for the beauty of its design and its extraordinary height, contains more terra cotta than any other building in America. The Grill Room of the McAlpin is a most elaborate and extensive example of an interior of glazed polychrome work.

1909 FEDERAL TERRA COTTA COMPANY, 101 Park Avenue, New York City.

HISTORY: The Federal Company was organized in November, 1909, by De Forest Grant. The Plant, located at Woodbridge, New Jersey, was completed 22 May, 1910, and the first delivery of terra cotta was made the latter part of that month.

OFFICERS: President, De Forest Grant; First Vice-President, Edwin Thorne; Second Vice-President, Lewis R. Morris; Treasurer, W. B. Dinsmore; Secretary and Assistant Treasurer, Dwight W. Taylor; Assistant Secretary, Harry Lee King, and Assistant General Manager, Norman Grant.

BUILDINGS: Whitehall Building, Equitable Building, Biltmore Hotel, and Racquet Club, New York City; Traymore Hotel, Atlantic City, New Jersey, and Real Estate Exchange, Detroit, Michigan.

CENTRAL

1888 NORTHWESTERN TERRA COTTA COMPANY, 2525 Clybourn Avenue, Chicago, Illinois.

HISTORY: The Northwestern Company was incorporated 9 January, 1888, a successor to True, Hottinger and Company (1886), and True, Brunkhorst and Company (1877), organized by John R. True, John Brunkhorst, Gustav Hottinger and Henry Rohkam, who had been connected with the Chicago Terra Cotta Works (1870), the oldest manufacturers of architectural terra cotta in the United States. The Plant at Clybourn Avenue covers twenty-four acres, and is the largest in the country.

OFFICERS: President, Gustav Hottinger; First Vice-President, Sherman Taylor; Vice-President and General Manager, Harry J. Lucas; Secretary-Treasurer, Adolph F. Hottinger; Assistant Sales Manager, George W. Van Cleave, and City Sales Manager, John G. Crowe.

BUILDINGS: Railway Exchange Building, Insurance Exchange Building, and Blackstone Hotel, Chicago, Illinois; Frick Arcade, and McCreary Stores, Pittsburgh, Pennsylvania; and Dime Bank Building, Detroit, Mich.

1888 AMERICAN TERRA COTTA AND CERAMIC COMPANY, Peoples Gas Building, Chicago, Illinois.

HISTORY: The American Company was founded by William D. Gates in June, 1888. The Plant is located at Terra Cotta, Illinois, about 45 miles northwest of Chicago on the line of the Chicago and North-Western

Railway. The Company also manufactures the well-known Teco ware.

OFFICERS: President, William D. Gates; Secretary-Treasurer, Niel H. Gates, and Assistant General Manager, Major E. Gates.

BUILDINGS: Chicago aud North-Western Terminal, and Great Lakes Naval Station, Chicago, Illinois, and many Banks, Schools and Office Buildings, Chicago, St. Paul and Minneapolis.

1889 WINKLE TERRA COTTA COMPANY, Century Building, St. Louis, Missouri.

HISTORY: The Winkle Company was founded 15 October, 1889, by Joseph Winkle, a successor to the Winkle Terra Cotta Works which he started in 1883. The Plant occupies about four acres at 5739 Manchester Avenue, within the city limits.

OFFICERS: President, Andrew Winkle; Vice-President, Andrew J. Hewitt, and Secretary-Treasurer, John G. Hewitt.

BUILDINGS: Fort Dearborn Building, Chicago, Illinois; Railway Exchange, St. Louis, Missouri; Hillman Building, Los Angeles, California; Alaska Building, Seattle, Washington; Dayton Building, Minneapolis, Minnesota, and Rialto Building, Kansas City, Missouri.

1893 INDIANAPOLIS TERRA COTTA COMPANY, Indianapolis, Indiana.

HISTORY: The Indianapolis Company was incorporated in April, 1893, a successor to Stilz, Joiner and Company. Reincorporated July, 1899, and May, 1904. The President of the Company, Benjamin D. Walcott, died

21 February, 1916. The Company is now controlled by William D. Gates and leased to the American Company of Chicago. The Plant is located at Brightwood, a few miles east of the city.

OFFICERS: President, William D. Gates; Vice-President, Major E. Gates; Secretary-Treasurer, Niel H. Gates, and Manager, George H. Lacey.

BUILDINGS: Van Camp Packing Company, Lyric Theatre, Hampton Court Apartments, Hotel Lincoln, and Masonic Building, Indianapolis, Indiana; and Y. M. C. A. Building, Anderson, Indiana.

1898 ST. LOUIS TERRA COTTA COMPANY, Security Building, St. Louis, Missouri.

HISTORY: The St. Louis Company was incorporated 8 August, 1898. Succeeded a company of same name started four years before but never operated successfully. The organizers of the present Company were R. J. Macdonald (President) and Robert F. Grady (Vice-President and Manager). David N. Burruss was elected President in 1904, and W. A. Maguire Second Vice-President in 1916. The Plant is located at 58th Street and Manchester Avenue, St. Louis.

OFFICERS: President, David N. Burruss; Vice-President-Treasurer, Robert F. Grady; Second Vice-President, W. A. Maguire, and Secretary, Edward E. Wall.

BUILDINGS: Union Electric Light and Power Station, Temple Israel, Jane Arcade, King Brindsmede Building, and Franklin Bank, St. Louis, Missouri, and The Temple, Dallas, Texas.

1905 WESTERN TERRA COTTA COMPANY, First and Franklin Avenue, Kansas City, Kansas.

HISTORY: The Western Company was founded in October, 1905, by William Timmerman and Paul C. Baltz, who had previously been employed by St. Louis companies. It began business with one kiln, which has since been increased to four.

OFFICERS: President, William Timmerman; Vice-President, Walter T. Timmerman, and Secretary and Treasurer, Paul C. Baltz.

BUILDINGS: Temple Building and Church, Kansas City, Missouri; Empress Theatre, Grand Rapids, Michigan; Majestic Theatre, San Antonio, Texas; Holy Cross Hospital, Salt Lake City, Utah; St. John's Hospital, Salina, Kansas, and Farmers Bank, Geneseo, Illinois.

1910 MIDLAND TERRA COTTA COMPANY, Lumber Exchange Building, Chicago, Illinois.

HISTORY: The Midland Company was incorporated 10 December, 1910. The first President, who retired in April, 1918, was William G. Krieg, at one time City Architect. The Vice-President, F. S. Ryan, died July 1918. The Plant occupies a twenty acre plot at West 16th Street and South 54th Avenue (Cicero, Illinois).

OFFICERS: President, Hans Mendius; Vice-President, August W. Miller, and Secretary-Treasurer, Walter S. Primley.

BUILDINGS: Municipal Pier, Medinah Temple, Sisson Hotel, and Elks Club, Chicago, Illinois; Central Trust Company, San Antonio, Texas, and Circle Theatre, Indianapolis, Indiana.

1911 DENVER TERRA COTTA COMPANY, West First Avenue and Umatilla Street, Denver, Colorado.

HISTORY: The Denver Company was founded 22 September, 1911, by John Fackt, George P. Fackt, and Carl Philip Schwalb. Began operations in March, 1912. The capacity of the Plant was tripled two years later.

OFFICERS: President, John Fackt; Vice-President, George P. Fackt, and Secretary-Treasurer, C. P. Schwalb.

BUILDINGS: Kistler Building, and Union Depot, Denver, Colorado; Stratton Building, Colorado Springs, Colorado; League Building, Galveston, Texas; New Martin Building, El Paso, Texas, and Rialto Theatre, Omaha, Nebraska.

1912 KANSAS CITY TERRA COTTA AND FAIENCE COMPANY, 19th Street and Manchester Avenue, Kansas City, Missouri.

HISTORY: The Kansas City Company was chartered 4 December, 1912. Successor to Southwestern Terra Cotta Company (1910), which bought present site of about five acres, but never operated. Reorganized September, 1911, under above name, and for the third time in 1912. Has been inactive since Spring of 1915. The stock is controlled by interests connected with the New Jersey and South Amboy Companies.

OFFICERS: President, Eckardt V. Eskesen; Vice-President, Marshall S. Neal; Secretary, J. J. Parsons, and Treasurer, Ferdinand P. Neal.

Pacific

1886 GLADDING-McBEAN AND COMPANY, Crocker Building, San Francisco, California.

History: The Gladding-McBean Company was incorporated 22 March, 1886, as successor to a firm of the same name founded at Chicago, 1 May, 1875, by Charles Gladding, George Chambers and Peter McGill McBean. The Plant is located at Lincoln, with branch at Oakland, California.

Officers: President, Peter McGill McBean; Vice-President, Albert J. Gladding; Vice-President, George R. Chambers; Secretary-Treasurer, Atholl McBean, and Assistant Secretary-Treasurer, Theodore F. Tracy.

Buildings: Hearst Building, Southern Pacific Building, and Insurance Exchange Building, San Francisco, California; Hamburger Building, Los Angeles, California; Meier and Frank Building, Portland, Oregon, and L. C. Smith Building, Seattle, Washington.

1889 N. CLARK AND SONS, 116 Natoma Street, San Francisco, California.

History: The N. Clark Company was incorporated 11 January, 1889, succeeding a business started in 1864 by Nehemiah Clark, one of the California Pioneers. The business was conducted at Sacramento until 1887 when a large plant was built at West Alameda. Shortly afterwards, the Sacramento plant was destroyed by fire and never rebuilt. The Alameda works were also burned in July, 1917, and not rebuilt, owing to war conditions, until 1919.

Officers: President and Superintendent, Albert V.

Clark, and Secretary-Treasurer and General Manager, George D. Clark.

BUILDINGS: Islam Temple, and First Church Christ Scientist, San Francisco, California; Federal Realty Building, Oakland, California; Boyle Heights Library, Los Angeles, California; County Court House, Sacramento, California; and Morgan Building, Portland, Oregon.

1903 LOS ANGELES PRESSED BRICK COMPANY, Frost Building, Los Angeles, California.

HISTORY: The Los Angeles Company was incorporated in March, 1903, being a successor to the Los Angeles Pressed Brick and Terra Cotta Company of Santa Monica, founded by the late Charles H. Frost in 1887. The Company owns and operates four large plants, manufacturing all kinds of clay products.

OFFICERS: President, Howard Frost; Vice-President, H. West Hughes, and Secretary-Treasurer, Harlow B. Potter.

BUILDINGS: Scottish Rite Cathedral, Joplin, Missouri; Ellanay Theatre, El Paso, Texas; Terry Apartments, Long Beach, California; First National Bank, King City, California; Bullocks Department Store, Los Angeles, California, and Mittry Theatre, Idaho Falls, Idaho.

1905 DENNY-RENTON CLAY AND COAL COMPANY, Hoge Building, Seattle, Washington.

HISTORY: The Denny-Renton Clay and Coal Company was organized in June, 1905, taking over the

business of the Denny Clay Company, which had succeeded a business started in 1882 under the name of the Puget Sound Fire Clay Company. In 1912 the new Company bought out the business of the Western Clay Company and the Diamond Brick Company, of Portland. The plants, all of which are operated under the one management, are located at Van Asselt, Taylor, Renton, and Portland. The paving brick plant at Renton is the largest single unit plant in the world. At the Van Asselt plant, which is located inside the city limits of Seattle, is manufactured architectural terra cotta, silica brick and magnesite brick. The silica and magnesite plant capacity was increased in 1919 and is now in shape to supply the rapid and growing demand for these products.

OFFICERS: President, E. J. Mathews; Vice-President, Moritz Thomsen; Secretary and General Manager, John F. Keenan.

BUILDINGS: Kings County Court House, Times Building, Artic Club Building, Home Economics Building, University of Washington, University State Bank Building, and Franklin High School.

1908 NORTHERN CLAY COMPANY, Auburn, Washington.

HISTORY: The Northern Clay Company was incorporated in October, 1908, successor to the Northern Clay Products Company, which had purchased a business started by Arthur H. Meade in May, 1903, and known as the Auburn Pottery.

OFFICERS: President, Paul S. MacMichael; Vice-President, John Wooding; Secretary, I. B. Knickerbocker, and Treasurer, K. R. Ehle.

BUILDINGS: Joshua Green Building, Securities Building, Pantages Theatre, Frederick and Nelson Building, and Home Economics Building (University of Washington), Seattle, Washington.

1909 WASHINGTON BRICK, LIME AND SEWER PIPE COMPANY, Spokane, Washington.

HISTORY: The Washington Company was incorporated in 1909, a successor to the Washington Brick and Lime Company. The name was changed when the latter company was consolidated with the Spokane Sewer Pipe Company. The Plants are located at Clayton, Spear and Freeman, Washington, and Bayview, Idaho. Mr. J. H. Spear the founder of the Company (1886) sold his interests and retired in May, 1919.

OFFICERS: President, A. B. Fosseen; Vice-President, Victor E. Piollet; Secretary, C. P. Lund, and Treasurer, E. C. Van Brundt.

BUILDINGS: Paulsen Building, and Crescent Store, Spokane, Washington; Montana Building, Lewistown, Montana; Wilcox Building, Portland, Oregon; Rialto Building, Butte, Montana; and First National Bank, Wallace, Idaho.

CHAPTER XVII

FORMER MANUFACTURERS

IN addition to the twenty-four Companies now active in the business, during the past fifty years at least twenty-eight other plants have been at different periods engaged in the manufacture of architectural terra cotta in the United States. Most of these Companies were the out-growth of old brick or pottery works, and began operations prior to the year 1900. Nearly all of these works were located in the East. All are now out of the business, five having failed, ten having been merged in other companies, and the balance having discontinued operations.

1875 B. KREISCHER AND SONS, Kreischerville, Staten Island.

Were pioneers in the manufacture of fire brick in the United States. Balthaser Kreischer, the founder, was born in Germany. In 1836 he came to New York. In 1845 he began the manufacture of fire bricks, which before that time were all imported from England. He bought a supply of clay in New Jersey, and built a small plant on leased ground in Goerck Street, New York City. Having outgrown his works in the city, in 1852 he purchased extensive clay deposits at Charleston (now Kreischerville), Staten Island, built new works, and then abandoned the New York plant. Later he admitted his three sons to partnership, and finally the business was incorporated under the old firm name. The products included fire brick, face brick, and terra cotta. Mr. Kreischer died in 1886. Company failed in 1899.

1875 SOUTHERN TERRA COTTA WORKS, Atlanta, Georgia.

About 1872, P. Pelligrini and another Italian named Georgi began operating a small plant for the manufacture of flower pots, chimney tops and architectural terra cotta. In 1875 Jack Castelberry bought an interest in the business, and they organized the firm of Pelligrini and Castelberry, which was sometimes called the Southern Terra Cotta Company. About 1893, some of the workmen started a little plant which later became known as the Atlanta Terra Cotta Company.

1879 PERTH AMBOY TERRA COTTA COMPANY, Perth Amboy, New Jersey.

Succeeded A. Hall and Sons Fire Brick Works in

1879. Officers from 1881 to 1907, Edward J. Hall, President; William C. Hall, Vice-President; George P. Putnam, Treasurer; Harry A. Lewis and Oswald Speir, Directors. For nearly thirty years leading manufacturers of terra cotta in the East. Merged in the Atlantic Company in 1907.

1879 H. A. LEWIS ARCHITECTURAL TERRA COTTA WORKS, Boston, Massachusetts.

Began in 1879 as Lewis and Wood. Later, Lewis and Lane. After July, 1883, under above style. Business sold to Perth Amboy Company in 1887.

1879 LONG ISLAND TERRA COTTA COMPANY, Ravenswood, Long Island.

Established by Rudolph Franke in 1879. The plant was located on the East River opposite 53rd Street, New York City. Discontinued in 1880.

1880 BOSTON TERRA COTTA COMPANY, Boston, Massachusetts.

Organized 19 October, 1880. Successor to Boston Fire Brick Company. Officers: R. G. F. Candage, President; George M. Fiske, Treasurer; James Taylor, Superintendent. Sold to the Perth Amboy and New York Companies December, 1893, and the business liquadated.

1883 A. HALL TERRA COTTA COMPANY, Perth Amboy, New Jersey.

Founded in 1883 by Alfred Hall, two years after his retirement from the Perth Amboy Company. The officers

were: Alfred Hall, President; his son Eber H. Hall, Vice-President; Fred. C. Greenley, Treasurer, and Robert W. Taylor, Superintendent. Eber H. Hall died in January, 1886, and Alfred Hall in April, 1887. The plant was then shut down. Two years later the works were leased jointly by the Perth Amboy and New York Companies and finally closed.

1883 LAKE VIEW TERRA COTTA AND BRICK COMPANY, Chicago, Illinois.

Failed in 1884, and did not resume business, the plant being leased by the Northwestern Company.

1885 BURNS-RUSSELL COMPANY, Baltimore, Maryland.

Large manufacturers of face brick. Early in the eighties they began to make terra cotta under style of the Baltimore Terra Cotta Company. In 1905 they sold their terra cotta business to the Maryland Company.

1886 WALNUT HILLS BRICK AND TERRA COTTA COMPANY, Cincinnati, Ohio.

Incorporated as a Stock Company in 1886. Succeeded the firm of Wilson and Gould. No further reports.

1886 GLENS FALLS TERRA COTTA AND BRICK COMPANY, Glens Falls, New York.

Succeeded Clark Colored Brick and Terra Cotta Company, which failed in 1884. J. M. Coolidge was President, and Charles Scales, Treasurer. Discontinued manufacture of terra cotta early in the nineties.

1886 WILLIAM GALLAWAY, Philadelphia, Pennsylvania.

An old well-established pottery business which has made a little terra cotta from time to time, but none of late years.

1888 STEPHENS, ARMSTRONG AND CONKLING, Philadelphia, Pennsylvania.

Began in 1886 as Stephens and Leach; changed in 1887 to Stephens, Leach and Conkling, and in 1888 to above style. In 1893 became a branch of the New York Company. In 1894, Armstrong and Conkling withdrew and founded the Conkling-Armstrong Company. The two Stephens brothers retired from the terra cotta business in 1896.

1890 CALVIN PARDEE TERRA COTTA WORKS, Perth Amboy, New Jersey.

In January, 1890, Calvin Pardee, a wealthy coal miner of Philadelphia, purchased about 166 acres on the Raritan River and erected a plant for the manufacture of front, fire and paving bricks, sewer pipe and floor and glazed tiling. But little, if any, architectural terra cotta was made. Robert W. Taylor, of the old A. Hall Terra Cotta Company, was the first Superintendent.

1890 STANDARD TERRA COTTA WORKS, Perth Amboy, New Jersey.

Began as Architectural Terra Cotta Works in 1890, and in 1892 was incorporated as Standard Terra Cotta Company. Failed in 1898 and was taken over by Henry Doscher, who continued the business under above name. Merged in the Atlantic Company in 1907.

1892 WHITE BRICK AND TERRA COTTA COMPANY, Clayton, Massachusetts.

Was first known as the White Brick and Art Tile Company, the title being later changed to the above when the Company was incorporated in 1892. The leading spirit in the organization was Charles Siedler, who had made a fortune in the tobacco business. The Company discontinued operations early in the twentieth century.

1892 NEW BRITAIN ARCHITECTURAL TERRA COTTA COMPANY, New Britain, Conn.

Was incorporated in 1892 with Philip Corbin as President; C. E. Wetmore, Treasurer; George P. Post, Secretary, and G. S. Barkentin, Manager. They purchased three acres of land at Berlin Junction and established their works there. Had two kilns.

1893 STATEN ISLAND LUMBER COMPANY, Staten Island, New York.

Manufactured terra cotta from the Spring of 1895 to 1898 inclusive. Officers: J. Edward Addicks, President; George Kelly, Treasurer; Robert W. Lyle, Secretary and General Manager; James B. Toomey, Superintendent. This Company failed in 1895. Was reorganized in 1898 under the name of Staten Island Clay Company, after which it did not make any terra cotta.

1894 EXCELSIOR TERRA COTTA COMPANY, Rocky Hill, New Jersey.

Incorporated in January, 1894, as successor to the Partridge, Powell and Storer Company, manufacturers of face brick. Merged in Atlantic Company, 1907.

1897 ATLANTIC TERRA COTTA COMPANY, Tottenville, Staten Island.

In the Spring of 1897, a meeting was held at one of the Good Government Clubs in New York, at which were present DeForest Grant, William D. Frerichs, S. S. Whitehurst and Charles U. Thrall. At this meeting it was decided to form a terra cotta company to be located at Tottenville, Staten Island. Later in the same year the Atlantic Terra Cotta Company was organized. De Forest Grant became its President and General Manager; S. S. Whitehurst, Sales Manager; William D. Frerichs, Superintendent, and Charles U. Thrall, Assistant Superintendent. Grant had formerly been Manager of the New York Office of the Staten Island Lumber Company, and Frerichs, Whitehurst and Thrall had all been connected with the Perth Amboy Terra Cotta Company, where they had received their technical training. The Company turned out its first material September, 1897. In January, 1907, the Company entered the combination of the Atlantic, Perth Amboy, Excelsior, and Standard Companies.

1898 STEIGER TERRA COTTA AND POTTERY WORKS, San Francisco, California.

Was organized 28 November, 1898, by members of the City Street Improvement Company, the largest contracting concern on the Pacific Coast. Walter E. Dennison was made President and continued as such up to the end. It developed from a three to an eleven kiln plant and produced a general line of clay wares. It was the first on the Pacific Coast to engage in the manufacture of a

general line of acid earthenware. It also developed "thru-an-thru" terra cotta, invented by its President, and first employed in the San Francisco Hospital in 1916. The plant was totally destroyed by fire 8 March, 1917, and it was decided to liquidate. The Company made the terra cotta for the Grant, Monadnock, and Rialto Buildings, the Humboldt Savings Bank Building, the first terra cotta structure erected in San Francisco after the fire of 1906, and for many other buildings. The Company was a member of the National Terra Cotta Society.

1901 ROGERS TERRA COTTA COMPANY, Stanwick, New Jersey.

Organized in April, 1901. A close corporation, all the stock being held by the Rogers family. Name changed in 1913 to Central Terra Cotta Company. Has made a little terra cotta from time to time.

1902 AMERICAN CLAY PRODUCTS COMPANY, Forty Fort, Pennsylvania.

Began business on a small scale in October, 1902, but had little success, and discontinued some years later. The plant was dismantled and the contents sold at auction in the Spring of 1916.

1905 NORTH EASTERN TERRA COTTA COMPANY, Bradford, Pennsylvania.

This Company was organized by several practical men who had been employed at New York and elsewhere. It never had much success and after a short existence suspended operations for lack of sufficient capital.

1905 MARYLAND TERRA COTTA COMPANY, Baltimore, Maryland.

This Company acquired the terra cotta business of the Burns-Russell Company in September, 1905, and was incorporated under the above name. The principal officers, John J. Kelly and Harry P. Boyd, were connected with the National Building Supply Company. The Company did a very small business and was discontinued in 1915. It was a member of the National Terra Cotta Society.

1908 CHICAGO TERRA COTTA COMPANY, Chicago, Illinois.

In March, 1908, the name of the Hahne-Brunkhorst Company, owning a plant at Blodgett, about one mile west of Highland Park, Illinois, was changed to Chicago Terra Cotta Company. Alfred Brunkhorst, who was formerly connected with the Northwestern Terra Cotta Company, was Vice-President. It is not known how much terra cotta business this Company did. They were formerly in the brick business, and when Brunkhorst came with them changed their name and apparently engaged in the manufacture of terra cotta. This Company was purchased by Northwestern Terra Cotta Company about 1 January, 1910.

1911 KANSAS CITY TERRA COTTA COMPANY, Kansas City, Missouri.

This Company was started in December, 1910, by A. F. Brooker, a lawyer originally from Columbia, South Carolina, and a man by the name of Slater, who was at one time with the Conkling-Armstrong Terra Cotta Com-

pany. The plant began business in March, 1911. Brooker withdrew from the Company in September, 1912, and started the National Terra Cotta Company immediately thereafter. This Company went into bankruptcy in January, 1916, having been in difficulties for some time. Harvey Stiver, a builder and general contractor of Kansas City, became interested in the property in 1914.

1915 UNITED STATES TERRA COTTA COMPANY, Chicago, Illinois.

This Company was incorporated 1 November, 1915, with John G. Crowe as President. Mr. Crowe had formerly been President and Treasurer of the American Terra Cotta and Ceramic Company. Fred F. Ellersdorfer was Secretary and Treasurer. He had been with the Northwestern Company for years and lost his position with the Company at the time of the change in management. They started to erect a plant at Harvey, Illinois, a suburb of Chicago. The concern never made any headway and it is not known whether or not they ever actually manufactured any material. Mr. Crowe is now the City Sales Manager of the Northwestern Terra Cotta Company.

CHAPTER XVIII

WHO'S WHO IN TERRA COTTA

NO apology is necessary, for appending to this Story of Terra Cotta, brief biographies of the men now or formerly prominent in the business. The intention is to record the life histories of those who have attained leadership, and who are representative of the progress and development of the craft. If any name is missing, it is due to the fact that the necessary data could not be obtained. It seemed better to omit mention of any individual rather than to rely on incomplete information. While this is most regrettable, no other course was possible under the circumstances.

THOMAS F. ARMSTRONG, President of the Conkling-Armstrong Company, was born near South Amboy, New Jersey, 31 August, 1869. Graduated at Hackettstown Institute. In 1888, he purchased the interest of Lucien Leach in the firm of Stephens, Leach and Conkling, which then became Stephens, Armstrong and Conkling. In 1894, he sold his interest in the firm to the Stephens brothers and, with Ira L. Conkling, organized the Conkling-Armstrong Company, of which he was Secretary and Treasurer until the death of Mr. Conkling in 1915, when he became President. He was First Vice-President of the National Terra Cotta Society in 1914 and 1915, and again in 1918. Fraternal Orders: Mason and Odd Fellows. Clubs: Rotary, and Manufacturers (Director and Secretary). Director, Pennsylvania Society of New Jersey. Ten years member of Philadelphia Council and President of same. Former member Board of City Trusts, and Park Commissioner. Former President of Master Builders Exchange. Hobby: Folks. Residence: 2226 Tioga Street, Philadelphia, Pennsylvania.

STUART R. AUDSLEY, Superintendent of Construction and Repairs of the Atlantic Company, was born at Liverpool, England, 10 April, 1864. Was educated at Vernon Academy, Liverpool, England. After graduating, took up the study of architecture, becoming an articled pupil in his father's firm, W. and G. Audsley, architects of London and Liverpool, taking the five-year course of the Royal Institute of British Architects, qualifying as an architect in 1887. Came to the United States in 1888, and entered the office of Cady, Berg and See, architects of New York City. Left their employ in August of the same year to enter the service of the Perth Amboy Com-

pany as draftsman; made Chief Draftsman the following year, and two years later, Superintendent of the Plant. When the Perth Amboy Company entered the Atlantic combination in 1907, he was reappointed Superintendent, and held that position until February, 1916, when he was promoted to the position of Superintendent of Construction and Repairs over their five Plants. He was closely connected from the first with the efforts of the Perth Amboy Company to produce polychrome terra cotta for exterior uses. Clubs: East Jersey and Perth Amboy Country, Perth Amboy, New Jersey. Former member Nassau Club, Princeton, Progress Club and St. George's Society, New York City. Residence: 17 Jaques Avenue, Rahway, New Jersey. Address: Perth Amboy, New Jersey.

PAUL C. BALTZ, Secretary and Treasurer of the Western Company, was born at St. Louis, Missouri, 24 March, 1879. Educated at Public School and Business College. Member Clifton Heights A. F. & A. M. (St. Louis), Scottish Rite and Shriner, Kansas City, Kansas. Hobby: Music. Residence: 606 North 17th Street, Kansas City, Kansas.

JOHN JOSEPH CARNEY, Assistant Secretary of the Eastern Terra Cotta Association, was born 8 October, 1882. Graduate of Public School, New York City. Started 15 January, 1897, with R. Hoe and Company, New York, and continued with this concern until made assistant bookkeeper. Went with the New York Company, 27 May, 1903, as estimate clerk; in November, 1905, became bookkeeper, and in January, 1911, was made Purchasing Agent and Traffic Manager. Appointed

Assistant Secretary of the Eastern Terra Cotta Association, March, 1916. In August, 1917, returned to the New York Company. In October, 1918, was appointed Army Field Clerk, Officers Training Camps Division, Headquarters Eastern Department, Governors Island, New York; resigned 15 April, 1919. Returned as Assistant Secretary, Eastern Terra Cotta Association, 19 May 1919. Fraternal Order: Knights of Columbus. Hobby: Baseball. Residence: 147 East 30th Street, New York. Address: 1133 Broadway, New York.

GEORGE DICKSON CLARK, General Manager, Secretary and Treasurer, N. Clark and Sons, was born in Sonoma County, California, 9 November, 1857. Education: High School. Was taught the potter's trade in the Sacramento plant of his father. Went to San Francisco at the age of twenty to take charge of the selling end, and has been on the "job" ever since. Patriotic Society: Native Sons of the Golden West of California (Past Grand President). Fraternal Orders: Golden Gate Commandery 16, Knights Templar (Past Commander); Islam Temple A. A. O. N. M. S.; San Francisco Lodge 3, B. P. O. Elks. Clubs: Bohemian, and Union League of California (Past President). Hobby: Practical Politics. Residence: Menlo Park, California. Address: 116 Natoma Street, San Francisco, California.

JOHN CLARK, Superintendent of the New York Company, was born at Atherstone, Warwickshire, England, 15 December, 1865. Education: Public School. First worked at the Perth Amboy Company, then with the Boston Company until 1886. Since then with the New York Company. Hobby: Photography. Residence: 292

Lockwood Street, Astoria, New York. Address: 401 Vernon Avenue, Long Island City, New York.

W. E. COLEMAN, Assistant Sales Manager of the Washington Company, was born at Wahoo, Nebraska, 9 January, 1885. Graduated at the University of Nebraska, degree of A. B. Vice-President, A. B. Fosseen and Company, Yakima, Washington, for six years, from January, 1913, to May, 1919; five months in present position. Fraternal Orders: Masons and Elks. Club: Spokane University. Residence: 1207 South Oak Street, Spokane, Washington. Address: Care Washington Brick, Lime and Sewer Pipe Company, Spokane, Washington.

JOHN GOLBERT CROWE, City Sales Manager of the Northwestern Company, was born at Chicago, 12 July, 1879. Education: Public School. Started to work for the American Company in 1893. Occupied various positions, and resigned 1915. Fraternal Orders: Elks, Knights of Columbus. Clubs: Illinois Athletic, Chicago Architectural. Residence: 39 South Central Park Boulevard, Chicago, Illinois.

RICHARD F. DALTON, President of the New York Company, was born in Ireland, 30 May, 1886. Graduated at New York University, LL.B., 1911. He is a lawyer, business man, director various Irish National interests. He has been connected with the New York Company since 1907, commencing as assistant to the President, and occupying since then the positions of Assistant Treasurer and Treasurer, and now of President of the Company. Member Bar Association, New York City. Residence: 722 Coster Street, Bronx. Address: 401 Vernon Avenue, Long Island City, New York.

WALTER EMERSON DENNISON, former President of the Steiger Company, was born on a farm at Kankakee, Illinois, 17 August, 1856. Educated at Ohio Wesleyan University, Delaware, Ohio, class of 1877, degree A. B. Member of Beta Theta Pi Society. He is now a farmer. He was Vice-President of the National Terra Cotta Society, of which he is now Honorary Life Member. He is also member of the Sons of the American Revolution, Mayflower Society, California Genealogical Society, and Life Member of the American Red Cross. Clubs: Commonwealth of California, Merchants Exchange of San Francisco, and Beta Theta Pi of New York City. Hobby: Angling. Summer home: Kankakee Ranch, Merced County, California. City address: 2150 Santa Clara Avenue, Alameda, California.

ECKARDT V. ESKESEN, Vice-President, Treasurer and General Manager of the New Jersey Company, was born in Jutland, Denmark, 13 August, 1868. Was employed in the Import and Export business at Copenhagen up to 1891. Came to America, 21 April, 1891, and started work with the New York Company in the Pressing Department. Secretary and Treasurer, Matawan Tile Company, Matawan, New Jersey. President, Royal Copenhagen Porcelain and Danish Arts Store, 563 Fifth Avenue, New York City. Director, First National Bank, Perth Amboy, New Jersey. President, Kansas City Terra Cotta and Faience Company. Treasurer of the National Terra Cotta Society since 1911. Trustee, American-Scandinavian Foundation. Club: Columbia Yacht, New York City. Residence: Perth Amboy, New Jersey. Town House: 535 West 113th Street, New York City. Address: Singer Building, New York City.

FRANK G. EVATT, Vice-President of the Atlantic Company, was born in 1873. Started with the Boston Terra Cotta Company in 1888; went with the Boston Fire Brick Company in 1893, and became Superintendent of their Plant in 1897, leaving when the plant was destroyed by fire in 1899. He was then with M. E. Gregory at Corning for a little over a year, and joined the original Atlantic Company in 1901. Subsequently at Pittsburgh for a number of years as representative of the new Atlantic Company, and since January, 1918, has been at their New York Office as Vice-President of the Company. Fraternal Orders: Knight Templar and 32 Degree Masonic. Clubs: Pittsburgh Athletic and Episcopal. Residence: 137 North Parkway, East Orange, New Jersey. Address: 1170 Broadway, New York City.

GEORGE POSTEL FACKT, Vice-President and General Manager of the Denver Company, was born at Mascoutah, Illinois, 22 December, 1884. Education: Engineer of Mines in Ceramics at Ohio State University. Graduated 1907. Connected with brick business in Mascoutah, Illinois, until 1903. At Ohio State University 1903 to 1907. Ceramist with St. Louis Company, June, 1907, to September, 1911. Organized present Company with Carl Philip Schwalb in September, 1911. In 1917, with Schwalb, acquired the Denver Clay Products Company, manufacturers of brick. Fraternal Orders: Various Masonic Bodies, including Shrine. Club: Denver Athletic. Hobby: Terra Cotta. Residence: Denver, Colorado.

JOHN FACKT, President of the Denver Company, was born in Germany, 22 September, 1854. Educated in

Public Schools of Germany, and Mascoutah, Illinois. Director of P. H. Postel Milling Company, Mascoutah, Illinois. Also interested in brick business at Mascoutah, and in various other business enterprises in Texas and Missouri. At present active in the P. H. Postel Milling Company, Mascoutah. Not active in the terra cotta business. Residence: Mascoutah, Illinois.

GEORGE MANN FISKE, former Treasurer of the Boston Company, was born at Medfield, Massachusetts, 2 May, 1842. Educated at Common Schools. During the Civil War, at the age of twenty, he enlisted, 20 August, 1862, in the United States Army, and served for one year. Member Grand Army of the Republic. In 1870, he entered the employ of James Edmond and Company, and remained in their employ until 1877. He then formed a partnership with Eugene B. Coleman under the firm name of Fiske and Coleman. In 1879 the Boston Fire Brick Works merged with the firm of Edmond and Company, with Fiske and Coleman as Managers. In 1880 the Boston Terra Cotta Company was organized, and a year later, upon the death of Mr. Edmond, Mr, Fiske was elected Treasurer, which position he retained until the Company was sold to the New York and Perth Amboy Companies in 1893 and the business liquidated. He then became General New England Agent of the New York Company under a ten-year contract. Residences: Home Farm at Medfield, Massachusetts, and house at Cliff Island, Maine. Address: Auburndale, Mass.

ARTHUR BENJAMIN FOSSEEN, President and General Manager of the Washington Company, was born at Leland, Illinois, 6 October, 1876. Education: Two years

in Civic Department, University of Minnesota. Member of Beta Theta Pi Society. Six years with Hennepin Lumber Company; three years with Hellusen Lumber Company; nine years with A. B. Fosseen and Company, Yakima, Washington; six months with Washington Brick, Lime and Sewer Pipe Company. Fraternal Orders: Shriner and Elks. Clubs: Spokane City, Spokane Country, Spokane University, Seattle College, Yakima Country. Member of Chamber of Commerce, both of Spokane and Tacoma. Address: 1117 West Tenth Avenue, Spokane, Washington.

HOWARD FROST, President and General Manager of the Los Angeles Company, was born at Chicago, Illinois, 28 August, 1883. Member Masonic Order. Clubs: Jonathan and Los Angeles Athletic. Residence: 1526 Fourth Avenue. Address: Frost Building, 145 South Broadway, Los Angeles, California.

MAJOR EARL GATES, Assistant General Manager of the American Company, was born at Hinsdale, Illinois, 1 April, 1886. Education: Ohio State University, two terms. Fraternal Order: Masonic. Clubs: Woodstock Country, Illinois Athletic. Hobby: Terra Cotta. Residence: Terra Cotta, Illinois.

NEIL HURLBERT GATES, Treasurer of the American Company, was born at Hinsdale, Illinois, 23 November, 1884. Education: Ohio State University (2 terms), University of Illinois, one year. Member Kappa Sigma Fraternity. Clubs: Illinois Athletic, Central Manufacturing District. Residence: Winnetka, Illinois. Address: 1808 Prairie Avenue, Chicago, Illinois.

WILLIAM D. GATES, President and General Manager of the American Company, was born at Ashland, Ohio, 29 July, 1852. Graduated at Wheaton College, A. M., 1875. Admitted to Illinois Bar, 1879. Since 1883, in terra cotta business. Ex-President, National Brick Manufacturers Association; Ex-President, American Ceramic Society. Clubs: Chicago Athletic, Chicago Builders, Chicago Architectural, Cliff Dwellers, Olympian Fields Country. Residence: 5217 Cornell Avenue, Chicago. Address: 1808 Prairie Avenue, Chicago.

WALTER GEER, Chairman of the Board of Directors of the New York Company, was born at Williamstown, Massachusetts, 19 August, 1857. Educated at Greylock Institute, South Williamstown, Massachusetts; Williams College, A. B., 1878, A. M., 1881; National University Law School, Washington, District of Columbia, LL.B., 1881, LL.M. 1882. Assistant Manager of the Walter A. Wood Mowing and Reaping Machine Company, Chicago, 1882 to 1886. President of the New York Architectural Terra-Cotta Company, 1886 to 1919, now Chairman of the Board; Vice-President of the New York Knife Company, and of the Wallkill River Company; Director of the Brunswick Site Company. Author of "Genealogy of the Geer Family in America" (1914). Hobby: History. Member of Sons of the Revolution, Society of Colonial Wars, Phi Beta Kappa Society and Delta Psi Fraternity. Life member of the New York Historical, New York Genealogical and Biographical (Trustee), Saint Nicholas and New England Societies. Sometime member of the Puritan Club (Boston), Art (Philadelphia), Maryland (Baltimore), Metropolitan (Washington), Manhattan, Calumet, Strollers, Saint An-

thony and Lawyers (New York), and Sleepy Hollow Country (Scarboro). Club: University, New York. Residence: 200 West 58th Street, New York City, and "Crow's Nest," Ossining, New York. Address: 401 Vernon Avenue, Long Island City, New York.

WALTER GEER, JUNIOR, Vice-President and Treasurer of the New York Company, was born in New York City, 27 May, 1889. Graduated Sheffield Scientific School, Yale University, Ph.B., 1911. Member Sachem Club. Eight years with the New York Company, starting in factory, and later in office work. Member of Society of Colonial Wars, and Sons of the Revolution. Club: Yale, New York. Hobby: Horses. Served with the 7th Regiment New York Infantry on Texas border 1916. Residence: Ossining, New York. Address: 401 Vernon Avenue, Long Island City, New York.

JOHN P. GEIB, Secretary of the New York Company, was born in New York, 4 August, 1871. Education: Public School, Evening High School, Pratt Institute, Brooklyn, Alexander Hamilton Institute. He started with the New York Company in 1886 and has been with them ever since, filling successively positions of office boy, estimator, city salesman, Assistant Secretary, and Secretary and General Sales Agent. Member Masonic Order. Clubs: Democratic (local) and Economic. Residence: 415 Willard Avenue, Woodhaven, Long Island, New York. Address: 401 Vernon Avenue, Long Island City, New York.

ALBERT JAMES GLADDING, First Vice-President of Gladding, McBean and Company, was born in Chicago,

Illinois, 8 September, 1858. Education: First year in High School. Commenced in a minor position under his father with Gladding, McBean and Company in June, 1875, and has been with them at the factory ever since. Fraternal Order: Masonry. Address: Lincoln, Placer County, California.

ROBERT FRANKLIN GRADY, Vice-President and Manager of the St. Louis Company, was born at Miami, Missouri, 10 November, 1860. Education: Civil Engineer. United States Assistant Engineer 1886 to 1891; from 1891 to 1898 Superintendent Evens and Howard Fire Brick Company, St. Louis, Missouri. Vice-President and General Manager St. Louis Company from 1898 to date. Fraternal Orders: Royal Arcanum, A. F. and A. M., 32d degree S. R. Residence: 5523 Cobany Avenue, St. Louis, Missouri. Address: 5811 Manchester Avenue, St. Louis, Missouri.

DE FOREST GRANT, President of the Federal Company, was born in New York City, 13 May, 1869. Graduated Yale University, A. B., 1891. Member Psi Upsilon Fraternity. Began business with New York Central Railway Company as assistant to the Vice-President, Walter Webb, where he remained about two years. He then travelled in Europe for several years, and on his return in 1896 took an executive position with the Staten Island Lumber Company. In 1897 he organized The Atlantic Terra Cotta Company, of which he became President and General Manager, and built the plant at Tottenville, Staten Island. When the new Atlantic Company was formed in 1907 he was elected President. In 1909 he withdrew from that Company and organized the Federal Company, of

which he has been President since the start. He is a member of the Society of Colonial Wars, Society of War of 1812, and Legion Medal of Honor. Clubs: Union, Racquet, Tuxedo, Calumet and City. Hobby: Big Game Hunting. Residences: Grindstone Neck, Winter Harbor, Maine, and 70 East 54th Street, New York City. Address: 101 Park Avenue, New York City.

MORRIS E. GREGORY, Proprietor of the Brick, Terra Cotta and Tile Company, was born at Canton, New York, 29 July, 1864. Graduated at Corning Free Academy, 1886. Taught school for four years in New Jersey. Entered the employ of predecessors in business in July, 1890, as bookkeeper. Purchased interest of business in January, 1896. Also manufacturer of Paving and Building Brick. Ex-President of the National Brick Manufacturers Association, and of the New York State Builders Association; President of the Corning Automobile Club for three years, and at present a Director of the State Association. Member Sons of American Revolution. Fraternal Orders: 32d Degree Mason, Knight Templar, Shriner and Elk. Clubs: Corning and Keuka Lake. Residence: 21 East Fourth Street, Corning, New York.

WILLIAM CLAIBORNE HALL, Vice-President of the Atlantic and Atlanta Companies, was born at New Brighton, Staten Island, New York, 10 July, 1881. Graduated Yale A. B. 1904. Delta Kappa Epsilon Society. Clubs: Capital City, Piedmont Driving, Druid Hills Golf, Atlanta, Squadron A, New York. Summer home: Cherokee Dunne, East Hampton, Long Island. Residence: 51 Inman Circle, Atlanta, Georgia. Address: 1170 Broadway, New York City.

JOHN GEORGE HEWITT, Secretary, Treasurer and General Manager of the Winkle Company, was born near York, England, 12 February, 1862. Education: Common School. Was with Laclede-Christy Company, manufacturers clay products, from 1874 to 1889. From 15 October, 1889, in present position. Fraternal Order: Masonic. Club: Rotary. Hobby: Terra Cotta. Residence: 6107 Victoria Avenue, St. Louis, Missouri. Address: Century Building, St. Louis, Missouri.

ADOLPH F. HOTTINGER, Secretary and Treasurer of the Northwestern Company, was born at Chicago, Illinois, in 1872. Education: Public and High School. Private course in Chemistry. Ceramic Chemist for above Company for twenty-three years, and four years as Factory Manager. Club: Illinois Athletic. Residence: 1108 Oakdale Avenue, Chicago, Illinois.

GUSTAV HOTTINGER, President of the Northwestern Company, was born in Vienna, Austria, 24 March, 1848. Education: High Shcool and Academy of Fine Arts. Came to Chicago in 1869, and secured employment as a decorator. Began work as a modeller with the Chicago Terra Cotta Works in 1870. Ten years later he went with the firm of True, Brunkhorst and Company, which, on the death of John Brunkhorst in 1886, became True, Hottinger and Company. When the Northwestern Terra Cotta Company was formed in 1888 he was elected Secretary, and later, in February, 1890, was elected President of the Company, the position which he still occupies. Fraternal Order: Mason. Club: Illinois Athletic. Hobby: Terra Cotta. Residence: 1054 Oakdale Avenue, Chicago, Illinois.

HARRY DAVID HURLBUT, Secretary and Treasurer of the Atlanta Company, was born at Montclair, New Jersey, 26 January, 1877. Education: Chattanooga High School and one year University of Tennessee, Knoxville, Tennessee. Business career: ten years office work, Southern Railway. Three years, building inspector, Southern Railway. Eleven years, Atlanta Terra Cotta Company. Residence: 42 Grady Place, Atlanta, Georgia. Address: East Point, Georgia.

JOHN FRANCIS KEENAN, General Manager and Secretary of the Denny-Renton Clay and Coal Company, was born in County Dublin, Ireland, 11 November, 1863. Has been connected with this Company for the past 27 years, beginning his work as shipping clerk at the Van Asselt plant of the Company; promoted to Superintendent of the Company's plant located at Taylor, Washington. In 1908, Mr. Keenan made a trip East, inspecting all of the large sewer pipe plants, which resulted in the rebuilding and remodelling of the Taylor plant into one of the largest and best equipped in the country. He has invented several labor saving devices, which include a ring-cutting machine and a sewer-pipe turner, power driven, which will handle any size up to 36 in. by the mere manipulation of a lever. In 1912 he was appointed General Manager of the Company. Clubs: Artic and Engineers. Vice-President of the Manufacturers Association; President of the Northwestern Clay Products Association. Hobby: Driving his "Stutz." Residence: 1147 20th Avenue, North. Address: Seattle, Washington.

ORMAN WESLEY KETCHAM, Proprietor of the O. W. Ketcham Works, was born at Hempstead, Long

Island, 29 January, 1865. Educated Pratt Institute (Architectural). Business career: Began with the Boston Company in the New York office, later to the factory, and back again to New York. In 1893, opened the Philadelphia office for them; at the death of John Evatt took the management of both New York and Philadelphia offices, until they ceased to operate in 1894; then opened his own office in Philadelphia; respresented as agent the Excelsior Company for twelve years, then started his own plant. Clubs: Manufacturers, Old York Country, Franklin Institute, Philadelphia Chamber of Commerce, Pennsylvania Chamber of Commerce, Philadelphia Automobile. Hobby: Golf. Residence: Chestnut Hill, Pennsylvania. Address: Master Builders Exchange, 24 South Seventh Street, Philadelphia, Pennsylvania.

HARRY LEE KING, Assistant Secretary, and Sales Manager of the Federal Company, was born on Staten Island, New York, 3 May, 1882. Business career: One year with Mills and Gibb. In 1898, became assistant to Thomas Van Every. Employed by The Atlantic Terra Cotta Company 1900 to 1906, and by Atlantic Terra Cotta Company 1906 to 1908. With Federal Company since 1909. Club: Rotary. Hobby: Boys' Clubs. Residence: 320 West 84th Street, New York City. Address: 101 Park Avenue, New York City.

VICTOR H. KRIEGSHABER, founder and former President, Atlanta Company, was born at Louisville, Kentucky in 1859. Education: Civil Engineer for four and a half years. Practiced Civil Engineering twelve years. Was Engineer in charge Central Railway of Georgia; then in business at Atlanta since 1891. Organized and

was Chairman first year of War of Atlanta War Camp Community Service. Ex-President of Chamber of Commerce; President, Hebrew Orphan Home. Director, Atlanta Associated Charities; Director, Federation of Jewish Charities and American Jewish Relief Committee. Vice-President, Atlanta Loan and Savings Bank. Fraternal Orders: Mason, Shriner. Clubs: Rotary, Ingleside. Residence: Atlanta, Georgia. Address: 814 Candler Building, Atlanta, Georgia.

GEORGE HARRISON LACEY, General Manager of the Indianapolis Company, was born at Gravesend, County Kent, England, 31 July, 1855. Education: City of London College, London, England. Was articled to an Architect and Surveyor in the City of London in 1872, and continued in that profession until 1884, when he came to America. Went to Idaho and was ranching there until 1888, when in consequence of a bad accident he returned in the East, and became draftsman for Stephens, Armstrong and Conkling at Philadelphia, continuing with them until Fall of 1889. He then went with the Perth Amboy Company, and remained until 1896, when he became Superintendent of the Indianapolis Company, and subsequently General Manager, which position he has retained up till now. Hobby: Photography. Residence: 2545 College Avenue, Indianapolis, Indiana.

HARRY ASHMEAD LEWIS, former Proprietor of the H. A. Lewis Architectural Terra Cotta Works, was born in England in 1854 of American parents; came to America at an early age and settled in Boston. In 1879 he began the manufacture of terra cotta at Boston under the style of Lewis and Wood, which a year later became

Lewis and Lane. July, 1883, he changed the name to the H. A. Lewis Architectural Terra Cotta Works. Four years later, in 1887, he sold his business to the Perth Amboy Company and became their Philadelphia Agent, with office in the Drexel Building. When this Company was consolidated with the Atlantic Company in 1907, he was connected with the latter Company for about a year, and then was with the New York Company for some time. From 1912 to 1914 he was with the Northwestern Company, at Chicago. Since then he has not been interested in the terra cotta business. During the Great War he was attached to the Ordnance Department of the United States Army with rank of Colonel. Club: Rittenhouse, Philadelphia. Address: 1710 Market Street, Philadelphia, Penn.

HARRY J. LUCAS, Vice-President and General Manager of the Northwestern Company, was born at Washington, District of Columbia, 7 February, 1871. Education: High School. Began career in terra cotta business in August, 1890, with the New York Company, as clerk; was successively, stenographer, bookkeeper, Purchasing Agent, assistant to Superintendent, Assistant Treasurer, Vice-President and Sales Manager. Resigned in 1912 to manage National Terra Cotta Society. With that organization until August, 1915, when elected Vice-President and General Manager of the Northwestern Company. Societies: American Ceramic, American Red Cross. Fraternal Orders: Mispah Lodge Free and Accepted Masons (New York); Pentalpha Chapter Number 206, Royal Arch Masons; Coeur De Leon Commandary, Knights Templar. Clubs: Manhattan, New York City, Chicago Motor, Chicago Architectural, and Evanston

Golf, Evanston, Illinois. Hobby: Golf. Residence: Edgewater Beach Hotel, Chicago. Address: 2525 Clybourn Avenue, Chicago, Illinois.

CHARLES P. LUND, Secretary of the Washington Company, was born at Fargo, North Dakota, 17 March, 1876. Education: University of Michigan, LL. B. Business career: Lawyer; President, Cheney Light and Power Company; Director, Security National Bank; Attorney, Scandinavian American Bank. Clubs: University and Country, Spokane. Hobby: Golf. Residence: 624 West 15th Avenue, Spokane, Washington. Address: 1220 Old National Bank Building, Spokane, Washington.

PETER McGILL McBEAN, President of Gladding, McBean and Company, was born at Lancaster, Ontario, Canada, 14 January, 1844. Secretary of Gladding, McBean and Company from 1886 to 1894; President, from 1894 to date. Clubs: Pacific Union, San Francisco, and Burlingame Country, Burlingame, California. Hobby: Golf. Residence: Winter—Fairmont Hotel, San Francisco, California; Summer—Burlingame, California. Address: Crocker Building, San Francisco, California.

PAUL S. MAC MICHAEL, President of the Northern Clay Company, was born at Newton, Iowa, 28 November, 1874. Education: Common and High School and Blackburn College (partial course). Fraternal Orders: Mason 32nd Degree and Mystic Shriner. Residence: Seattle, Washington.

CHRISTIAN MATHIASEN, President of the South Amboy Company, was born at Aalborg, Denmark, 5 November, 1861. Education: Public Schools, Denmark and

United States. Started in clay industry in 1874 with the A. Hall and Sons Pottery, in Perth Amboy. From 1882 to 1884 was with the Boston Company as model maker. Then came back to Perth Amboy with the newly formed A. Hall Company. From 1885 to 1892 was with the Perth Amboy Company. In 1892, he went with Mathiasen and Hansen, as Superintendent of Plant. With the New Jersey Company until 1903, when the South Amboy Company was formed. President, Mathol Investment Company, Perth Amboy. Governor, Perth Amboy City Hospital. Patriotic Society: New Jersey Militia Reserves. Fraternal Order: Masonic Past Master. Club: Craftsman's. Hobby: Automobiles. Residence: 216 Kearny Avenue, Perth Amboy, New Jersey.

KARL MATHIASEN, President of the New Jersey Company, was born at Thisted, Jutland, Denmark, 18 March, 1860. Began with the old A. Hall Pottery, Perth Amboy, and started work in the pressing department when A. Hall and Sons commenced making terra cotta at Perth Amboy in 1877. Went later on to Boston and worked under James Taylor as Pressing Foreman in the Boston Works. Went with Taylor to Ravenswood, Long Island, when the New York Company was formed in 1886. Began the manufacture of terra cotta in 1887 under firm name of Mathiasen and Hansen, which later was changed to New Jersey Terra Cotta Company. President of the Matawan Tile Company, and Secretary of the Royal Cophenhagen Porcelain and Danish Arts Store, New York City. In 1910, he was decorated by the King of Denmark with the order of "Knight of Danebrog." Club: Danish Royal Yacht, Copenhagen, Denmark. Residence: Keyport, New Jersey. Summer home: Camp Den-

mark, Fourth Lake, Adirondacks. Winter home: Melrose, Florida. Address: Singer Building, New York City.

KARL MATHIASEN, JUNIOR, Secretary of the New Jersey Company, was born at Perth Amboy, New Jersey, 5 July, 1890. Education: Montclair Academy, and Princeton University. Degree: Bachelor of Literature. Private Secretary to American Minister to Denmark, 1913 to 1914. With the New Jersey Company, 1914 to 1919. Patriotic Society: Field Artillery Corps Officers Training School Association. Club: Key and Seal, Princeton. Hobby: Tennis. Residence: Fanwood, New Jersey. Address: 149 Broadway, New York City.

WILLIAM MATHIASEN, Vice-President of the South Amboy Company, was born at Perth Amboy, New Jersey, 18 August, 1875. Education: Public Schools, and School of Architecture, Columbia University. Started as boy in Pressing Department, New Jersey Company, advancing gradually to position of Chief Draftsman. In 1903 became one of the incorporators of the South Amboy Company. Vice-President, Mathol Investment Company, Perth Amboy. Patriotic Society: New Jersey Militia Reserves. Hobby: Automobiles. Residence: 233 High Street, Perth Amboy, New Jersey.

PETER CHRISTIAN OLSEN, Treasurer and General Manager of the South Amboy Company, was born at Copenhagen, Denmark, 17 February, 1881. Received a Grade School education. Came to America in 1890. Three years later, began the study of modelling and drawing with Domingo Mora, a Spanish sculptor who was connected with the Perth Amboy Company. After about five years training, went into the Perth Amboy modelling

shops for a short time. From there he went to the New Jersey Company, then to the Winkle Company at St. Louis, and later to the Northwestern at Chicago, where he remained about a year. While in Chicago he studied sculpture with the evening classes of the Chicago Art Institute. He then returned to New York, where he made models for fine interior decorations. When the South Amboy Company was formed in 1903, he became one of the incorporators, and has been connected with the Company ever since. Member of New Jersey Militia Reserves. Fraternal Order: Elks. Club: Raritan Yacht, of Perth Amboy (Commodore for two terms). Vice-President of Perth Amboy Trust Company; Secretary and Treasurer of Mathol Investment Company; Chairman of Perth Amboy Harbor Commission (two terms). Hobby: Yachting. During the Great War he passed all examinations for a commission as Captain in the Ordnance Department, United States Army, and was so notified the day the Armistice was signed, 11 November, 1918. Has since received commission of Captain in United States Reserves. Residence: 69 Water Street, Perth Amboy, New Jersey. Address: 150 Nassau Street, New York City.

FRED BENSON ORTMAN, Ceramic Engineer, Northwestern Company, was born at New Salem, Ohio, 5 January, 1888. Degree of Ceramic Engineer from Ohio State University. Member of Kappa Sigma Fraternity. Business career: One year, Kiln Burner, Alton Brick Company. Two years, Chief Ceramist, New York Company; three years, Assistant General Manager, in charge of Production and, one year, Secretary, in charge of Sales and Production. Two years, Ceramic Engineer, Northwestern

Company. Chairman Terra Cotta Division of American Ceramic Society. Residence: 1709 Ridge Avenue, Evanston, Illinois. Address: 2525 Clybourn Avenue, Chicago, Illinois.

JAMES RICHARD OWENS, Assistant Treasurer of the New York Company, was born in old Greenwich Village, New York City, 19 February, 1847. Received a Public School education. During the Civil War, he enlisted April, 1864, at the age of seventeen, in the 53rd Regiment New York State Veteran Volunteers, and served fifteen months, until mustered out in July, 1865. From 1869 to 1888 he was General Manager of the Howe Machine Company for New York, Vermont and Pennsylvania. Since June, 1888, he has been connected with the New York Company. Residence: Mansion House, Brooklyn, New York. Address: 401 Vernon Avenue, Long Island City, New York.

GEORGE PARSONS, Assistant Treasurer of the Atlantic Company, was born at Fazeley, England, 22 July, 1860. He began his business career as bookkeeper with George Shey and Company, Ltd., Tamworth, England. Has since been connected with the Perth Amboy, Boston and Indianapolis Companies. Clubs: West End Gun, Huguenot, Staten Island; Perth Amboy Gun, Perth Amboy, New Jersey, and Metuchen Rod and Gun, Metuchen, New Jersey. Hobby: Clay Pigeon Trap Shooting. Residence: 155 Kearny Avenue, Perth Amboy, New Jersey. Address: Perth Amboy, New Jersey.

VICTOR E. PIOLLET, Vice-President and General Sales Manager of the Washington Company, was born at

Wysox, Pennsylvania, 8 February, 1886. Education: High School, with two years at Cornell University, Ithaca, New York. Raised on a farm; one year in real estate; nine years with Washington Brick, Lime and Sewer Pipe Company. Patriotic Society: Constitutional Government League. Fraternal Order: Elks. Clubs: Spokane City, Spokane Country, Spokane Athletic, Spokane University and Spokane Chamber of Commerce. Hobby: Golf. Residence: 924 Lincoln Street, Spokane, Washington. Address: Care of Washington Brick, Lime and Sewer Pipe Company.

WILLIAM HENRY POWELL, President of the Atlantic Company, was born at Brooklyn, New York, 27 November, 1870. Education: Public School and High School, Brooklyn. With Perth Amboy Company, 1885 to 1892; General Manager, Partridge, Powell and Storer Company, 1892 to 1894; Treasurer and Manager, Excelsior Company, 1894 to 1905, and President, 1905 to 1907; Vice-President, Atlantic Company, 1907 to 1909, and President, 1909 to date. Clubs: Manhattan and Railroad, New York City, and Nassau, of Princeton. Director, Perth Amboy Trust Company, Perth Amboy, New Jersey; President, Atlanta Terra Cotta Company, Atlanta, Georgia; President, National Terra Cotta Society, 1917 and 1918; President, Eastern Terra Cotta Association. Residence: The Wellsmore, Broadway and 77th Street, New York City. Address: 1170 Broadway, New York City.

GEORGE PALMER PUTNAM, Treasurer of the Atlantic Company, was born at Buffalo, New York, 6 December, 1842. Educated at Private Schools. In 1865,

he became Cashier of the Buffalo Water Works. In 1868, he went into the leather business with William H. Gardner. He was Trustee of the General Hospital, Buffalo, and Trustee and Treasurer of the Calvary Presbyterian Church. From 1881 to 1907, he was Secretary and Treasurer of the Perth Amboy Company, and since 1907 has held the same position with the Atlantic Company. Clubs: Manhattan and City, New York City, and Prouts Neck Country, Maine. Residence: 16 Bayview Avenue, New Rochelle, New York. Address: 1170 Broadway, New York City.

CARL PHILIP SCHWALB, Secretary and Treasurer of the Denver Company, was born at Mascoutah, Illinois, 26 April, 1877. Education: Denver, Colorado, Public Schools. Director of P. H. Postel Milling Company, Mascoutah, Illinois; Director of Merchants Bank, Denver; President and Treasurer of the Denver Clay Products Company. Fraternal Orders: Various Masonic Bodies. Clubs: Denver Athletic and Denver Motor (Director). Hobby: Automobiles (one of the pioneers in motoring in Colorado). Residence: Denver, Colorado.

ALBERT HENRY SHEFFIELD, Secretary of the American Company, was born at Worcester, Massachusetts, 8 December, 1876. Graduated at Brown University, Ph. B. Member Delta Upsilon Fraternity. Business career: Building Construction, Granite, Limestone, Terra Cotta. Patriotic Society: American Legion. Fraternal Orders: Masonic Bodies. Clubs: Chicago Press, Minneapolis Athletic. Residence: 953 Foster Avenue, Chicago, Illinois. Address: 1808 Prairie Avenue, Chicago, Illinois.

OSWALD SPEIR, Manager Southern District, Gladding, McBean and Company, was born at New Orleans, Louisiana, 18 August, 1864. Special course in Architecture, Brooklyn Institute Arts and Sciences. Entered employ of Perth Amboy Company in the Fall of 1879 as office boy. Elected Director 1890, serving until early part of year 1905. General Sales Agent for some years in New York City. In 1893, became Assistant General Manager in charge of plant operation, continuing as Sales Manager. From 1905 to 1907, Sales Manager, Richey, Browne and Donald, Ornamental Iron. Since 1908 with Gladding, McBean and Company, of San Francisco. From 1913 to 1919, Vice-President Lavensaler-Speir Corporation, Commercial Minerals. In 1918 and 1919, Vice-President, Pacific Marine and Construction Company of San Diego, California, construction of concrete ships under United States Shipping Board Emergency Fleet Corporation. Patriotic Society: American Red Cross. Technical Societies: American Institute of Architects; New York Academy of Sciences; American Ceramic Society. Clubs: Faculty, University of California; Jonathan, Los Angeles, Cuyamaca, San Diego. Hobby: Art. Residence: Los Angeles, California. Address: Trust and Savings Building, Los Angeles, California.

GEORGE FRANK STEPHENS, founder of Stephens, Armstrong and Conkling, Sculptor and Lecturer, was born at Rahway, New Jersey, 28 December, 1859. Graduate of Rutgers College and Pennsylvania Academy of Fine Arts. Worked several years on sculpture of new City Hall, Philadelphia. Has since been Secretary and Treasurer of Stephens, Cooper and Company, architectural decorations and stone carving. Treasurer of New

York Company, 1894. Instructor in modelling in several art schools. Instructor in Drexel Institute. Lecturer on Economics, Henry George Lecture Association, also for University Extension, and New York Board of Education. Wrote "Money and Currency" pamphlet on the Money Question from Single Tax standpoint. Member Pennsylvania Academy of Fine Arts, Single Tax Society, Philadelphia. Clubs: Philadelphia Sketch, Art, Fellowship of Pennsylvania, Academy of Fine Arts, Philadelphia; National Arts, New York. Founder with the architect, Will Price, of the Single Tax village, "Arden Home," Arden, Delaware.

HARRY G. STEPHENS, former partner of Stephens, Armstrong and Conkling, was born at Elizabeth, New Jersey in 1862. Education: Preparatory School and Rutgers College. Manager of Sales of Stephens, Armstrong and Conkling, later Stephens and Company; also partner and Manager of Sales, Stephens, Cooper and Company, ornamental plaster, and stone carving. Later, Eastern Manager, Republic Creosoting Company, of Indianapolis, Indiana. Clubs: National Arts and Manhattan, New York; Art, Philadelphia; Westmoreland, Richmond, Virginia; Merion Cricket; Academy of Fine Arts and Single Tax. Residence: 523 Hansberry Street, Germantown. Address: Transportation Building, Philadelphia.

DWIGHT W. TAYLOR, Secretary and Assistant Treasurer of the Federal Company, was born in New York City, 25 October, 1869. Graduated Columbia, A. B., 1891, A. M., 1893. Member Alpha Delta Phi Fraternity. With Delaware, Lackawanna and Western Railroad Com-

pany, 1892 to 1897. Assistant Treasurer, The Atlantic Company, 1898 to 1907. Secretary and Assistant Treasurer, Atlantic Company, 1907 to 1909. Secretary and Assistant Treasurer, Federal Company, 1909 to date. Clubs: University and New York Athletic. Residence: 500 Madison Avenue, New York City. Address: 101 Park Avenue, New York City.

WILLIAM TIMMERMAN, President of the Western Company, was born at Chicago, Illinois, 6 November, 1867. Educated in Private School. Charter member Clifton Heights A. F. & A. M. 520 (St. Louis). Residence: 2215 North 5th Street, Kansas City, Kansas.

WALTER T. TIMMERMAN, Vice-President of the Western Company, was born at Chicago, Illinois, 4 November, 1880. He is a Ceramic Chemist by profession.

FERDINAND C. TOWNSEND, Vice-President of the New York Company, was born at Edgewater, New Jersey, 23 January, 1869. Educated at Brooklyn Polytechnic Institute, 1886, B. A., New York University School of Accounting, 1894, C. P. A. In business as Public Accountant from 1886 to date, the present firm name being Townsend, Dix and Pogson. Member of Assembly from Richmond County, 1900 to 1901. President Stapleton National Bank, 1901 to 1907. Vice-President, New York Company since 1907. Commissioned as Captain in United States Air Service 18 October, 1917, and was sixteen months with A. E. F. in France; discharged as Major in same service in February, 1919. Member New York State Society C. P. A. and American Institute of Accounting; Society Officers of the Great War. Clubs: Manhattan, New York City; Richmond County Country, Staten

Island, and Hope, Providence. Residence: Arrochar, Staten Island. Address: 45 Nassau Street, New York.

EDGAR CRATON VAN BRUNDT, Treasurer of the Washington Company, was born at Champaign, Illinois, 23 October, 1874. Five years in banking; five years, Armour and Company; five years, mining; ten years, fruit ranching. Fraternal Orders: Elks and Masonic Mystic Shrine. Clubs: Spokane City, Spokane Country, Yakima Country, Snipes Gun. Hobby: Golf. Residence, 1206 East Eighth Avenue, Spokane, Washington. Address: Washington and Pacific Avenues, Spokane, Washington.

GEORGE W. VAN CLEAVE, Assistant Sales Manager of the Northwestern Company, was born at Crawfordsville, Indiana, 30 March, 1879. Education: High School and Normal School. From 1896 to 1902, teacher in District Schools, Montgomery County, Indiana, and Graded Schools, Wingate, Indiana, employing school vacation periods as farmer, carpenter, mason, draftsman and general contractor; from 1903 to 1905, manager grain elevators at Wingate and Linden, Indiana; from 1905 to 1919, in employ of Northwestern Company, serving in various positions: draftsman, estimator, Manager Estimating and Cost Departments, and Assistant Sales Manager. Fraternal Order: Knights of Pythias. Club: Chicago Sales Managers Association. Hobby: Reading. Residence: 1456 Edgewater Avenue, Chicago, Illinois. Address: 2525 Clybourn Avenue, Chicago, Illinois.

CARL L. H. WAGNER, Secretary of the Central Terra Cotta Association, was born at Saginaw, Michigan, 28 February, 1881. Education: Purdue University, Bach-

elor of Science, School of Mechanical Engineering. Business career: 1907 and 1908, Assistant Foreman, pressing floor, Northwestern Company; 1909 to 1915, Assistant to Vice-President, and Secretary; 1916, Assistant Secretary Central Division National Terra Cotta Society; 1917 to 1919, Secretary Central Terra Cotta Association. Hobby: Sailing. Residence: 536 Roscoe Street, Chicago, Illinois. Address: Lumber Exchange Building, 11 South La Salle Street, Chicago, Illinois.

FRITZ WAGNER, former Vice-President and General Manager of the Northwestern Company, was born in Bavaria, Germany, in 1857. Education: Commercial Technical Schools in Germany. Came to the United States in 1876 and settled at Saginaw, Michigan. Was naturalized in 1881. Practiced as architect and general contractor. In 1881 was engaged by the Northwestern Company as outside superintendent. In 1886, upon the death of John Brunkhorst, he took up the work formerly done by Mr. Brunkhorst, and was the point of contact between the Company and architects and customers. In 1890, he became financially interested in the Company and was elected an officer. Later he became Vice-President and General Manager, having charge of estimates, sales and production. He resigned in 1915, and sold his stock in 1918, and has since devoted himself to his books and music. He was President of the National Terra Cotta Society from its organization in December, 1911, until January, 1917, and is now an Honorary Life Member. Fraternal Orders: Mason, National Union. Clubs: Press, Architectural and Lincoln, Chicago. Hobby: Outdoor Life. Address: 1049 Oakdale Avenue, Chicago, Illinois.

EDWARD E. WALL, Secretary of the St. Louis Company, was born at Cambridge, Missouri, 15 August, 1860. Education: University of Missouri, Civil Engineer, class of 1884. Civil Engineer on Government and Railroad surveys and construction, 1884 to 1890. Engineer and contractor, 1890 to 1892. Municipal engineering 1892 to date, on sewer and design; and on design, construction and operation of St. Louis Water Works, having been Water Commissioner from 1911 to date. Was one of the original incorporators of St. Louis Company in 1898. Fraternal Orders: A. F. & A. M. Clubs: Engineers, Noonday, City, Riverview; Member of American Public Health Association, American Water Works Association, Director of American Society of Civil Engineers. Residence: 5361 Pershing Avenue, St. Louis, Missouri.

FRED OTTO WANKA, Manager Terra Cotta Department, Los Angeles Pressed Brick Company, was born at Los Angeles, California, 31 July, 1887. Education: two years, or a short course, in Ceramics, Ohio State University. Business career: Washington Brick, Lime and Sewer Pipe Company, six years; Denny-Renton, one and a half years; Stockton Fire and Enamel Brick Company, Superintendent and later Manager, total time two years; Gladding-McBean and Company, one and a half years; Los Angeles Pressed Brick Company, two years. Fraternal order: Masonic. Residence: 845 North Bunker Hill Avenue. Address: Los Angeles, California.

HAROLD BERNARD WEY, Vice-President and General Manager of the Atlanta Company, was born at Hiawatha, Kansas, 7 February, 1883. Education: Atlanta Grammar Schools, Peacock's Preparatory School, Geor-

gia School of Technology, degree B. S. in M. E. With Bridgeport Brass Company for four years, followed by approximately two years in general civil engineering work in office of C. Leroy Richardson. Eleven years in general offices of Southern Group of Bell Telephone Company, as Fundamental Plan Engineer on immediate staff of Chief Engineer. Entered terra cotta industry in October, 1919. Patriotic Society: American Legion. From May 19, 1917, to March 26, 1919, in United States Army, as First-Lieutenant and Captain Signal Corps. Residence: 287 Myrtle Street, Atlanta. Address: Third National Bank Building, Atlanta, Georgia.

In Memoriam

NEHEMIAH CLARK, founder of N. Clark and Sons, was born in Delaware, 4 April, 1828, died in April, 1897. He was taught the pottery business in Zanesville, Ohio, in the year 1848. Engaged in the clay business in Texas in 1849, from which State he migrated to California in 1850, being one of the Pioneers. For fourteen years he was engaged in mining and cattle raising. In 1864, he started a pottery at Sacramento for the manufacture of stone-ware, to which he added a sewer pipe plant two years later. In 1882, he organized the firm of N. Clark and Sons, taking his two sons, George D. and Albert V. Clark, into partnership with himself. In 1889, the business was incorporated under the name of N. Clark and Sons. Mr. Clark was a pioneer in the clay business on the Pacific Coast.

IRA LEWIS CONKLING, former President of the Conkling-Armstrong Company, was born at Manahawken, New Jersey, 21 November, 1859; died at Philadelphia, 20 September, 1915. In 1871, his family moved to Perth Amboy, where, three years later, he began work in the pottery of A. Hall and Sons. He continued with the A. Hall works until the organization of the Perth Amboy Company in 1879, of which he was one of the first employés. In 1880, when the Boston Company was started, he went there and remained about a year. When Alfred Hall founded the A. Hall Company in 1883, he returned to Perth Amboy and was with the new Company for several years. In 1887, he became a partner in the firm of Stephens and Leach, manufacturers of architectural terra cotta, at Philadelphia. At this time, the name was changed to Stephens, Leach and Conkling. The following year, the interest of Mr. Leach was purchased by Conkling's brother-in-law, Thomas F. Armstrong, and the firm name became Stephens, Armstrong and Conkling. In January, 1894, he became the Superintendent of the New York Company, where he remained for one year. In 1895, with Armstrong, he organized the Conkling-Armstrong Terra Cotta Company, of which he was President until his death in 1915.

CHARLES GLADDING, former President (1886 to 1894) Gladding, McBean and Company, was born in Erie County, New York, 28 April, 1828; died 17 January, 1894. Education: Country School. Contractor in Chicago, 1856 to 1875. In 1875, formed the firm of Gladding, McBean and Company, with which he was identified till his death. Patriotic Societies: Grand Army of the Republic and Loyal Legion. Fraternal Order: Masonic.

IN MEMORIAM

ALFRED HALL, founder of the Perth Amboy Company, was born at Meriden, Connecticut, 22 May, 1803; died at Perth Amboy, New Jersey, in April, 1887. About 1826, he moved to Cleveland, Ohio, and began the manufacture of bricks. In 1842, he invented a brick machine which was quite generally adopted throughout the country. In 1845, he visited England and remained about a year securing patents on his machine. On his return he located at Perth Amboy on account of the clay mines in that vicinity, and spent the remainder of his life there. He founded the A. Hall and Sons Fire Brick Works, about the year 1846. In 1877, he began the manufacture of architectural terra cotta at his plant, and two years later he organized the Perth Amboy Company, of which he was President until he resigned in January, 1881. Two years later he organized the A. Hall Company, of which he was President until his death in 1887.

EDWARD JULIUS HALL, former President of the Perth Amboy Company, was born at Perth Amboy, New Jersey, 31 March, 1853; died at Morristown, 17 September, 1914. Graduated at Sheffield Scientific School, Yale, 1873, degree Ph. B. He was a member of the Delta Psi Fraternity. From 1873 to 1875, he studied to be a Blast Furnace Engineer. From 1875 to 1879, he was Manager of the Hall and Sons Works at Black Rock (Buffalo). In 1879, he organized the Bell Telephone Company of Buffalo, of which he was elected Vice-President and General Manager. In February, 1882, he resigned and went to New York to take up the active management of the Perth Amboy Company, which he retained for three years. From 1885, until his death in 1914, he was Vice-President and General Manager of the American Tele-

phone and Telegraph Company . Clubs: University, Marion County Golf, Larchmont Yacht. His residence was Morristown, N. J.

WILLIAM CORNELIUS HALL, former Vice-President and General Manager of the Perth Amboy Company, was born at New Orleans, Louisiana, 23 January, 1855; died at 52 West 9th Street, New York, 6 June, 1911. He graduated at Sheffield Scientific School, Yale, in 1875, degree B. S. He was a member of the Delta Psi Fraternity. Member of the New York Sculptors, and Municipal Art Societies, New York. Clubs: University, Saint Anthony, Strollers, National Arts, Lambs, New York Yacht and Larchmont Yacht. His residence was New York City.

JAMES TAYLOR, "the Father of Terra Cotta in America," was born in England in 1839; died at Port Monmouth, New Jersey, 24 December, 1898. As a young man he began work at Stamford, England, in the plant of J. M. Blashfield, the well-known manufacturer of architectural terra cotta. Here he rose to the position of Superintendent. In 1870, he emigrated to America, and became Superintendent of the Chicago Works. In 1878, when a large contract was taken in Boston, Taylor, who had retired and gone to New Jersey the year before, was engaged to come to Boston and superintend the manufacture. A year later, when this contract had been finished, Harry A. Lewis leased part of the same plant and began the manufacture of terra cotta with Taylor as Superintendent. When the Boston Company was founded in October, 1880, Taylor became Superintendent, and remained there until January, 1886, when he went

to New York to take the same position with the New York Company, which he retained until 1893. He then retired to his farm in New Jersey where he passed the remainder of his days.

BENJAMIN D. WALCOTT, former President of the Indianapolis Company, was born at New York Mills, Oneida County, New York, 3 June, 1851; died at Indianapolis, 20 February, 1916. Graduate of Whitestown Seminary, Whitestown, New York. About 1875 he moved to Indianapolis and became Teller in the Citizens National Bank. Organized National Bank of Greenfield, Indiana. Engaged in General Insurance and Real Estate. Formed firm of Walcott and Wright for sale of yellow pine lumber. Purchased interest in Indianapolis Company in 1895. Clubs: Columbia, Country, and German House of Indianapolis. Hobby: Fly fishing.