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There are many valves on the market that are more or less valuable assistants in controlling the power of the radiator, and if not neglected give fairly good results, but it is stated on good authority that the K. M. C. valve actually thrives on neglect. As regards to prices, etc., the Kellogg-Mackay-Cameron Company will be pleased to furnish all the desired information upon application to the address given above.

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New Quarry of Serpentine Marble Near Spokane, Wash.

A magnificent new deposit of green serpentine has been opened at the quarries of the United States Marble Company, near Valley, Wash. It is a superb marine green, taking a fine polish. The stone is unrivaled in color and texture by that produced anywhere in the country, and it is equal to the green marble found in the ancient Roman temples taken from quarries which are now lost.

Seven years ago Thomas H. Greenway, a marble worker from England, discovered this deposit of Serpentine marble in Washington. He is now superintendent of the United States Marble Company, which controls the quarries he discovered. The deposit is a steep bluff, 100 feet high, 1,000 feet long, and of great but unknown depth. On the surface the marble is white, and passes through the various shades of yellow and light green until, at a slight depth, the beautiful deep green Serpentine onyx is reached. The quarries have been worked for only four years, but in that time the product has sprung into fame. Mr. George W. White, at 1133 Broadway, New York, is the general Eastern agent of the company, and Mr. C. E. Mitchell, of Spokane, Wash., is the general manager.

The Washington Commissioners at the late Pan-American exhibition, held at Buffalo, N. Y., stated that they believed the quarrying of this beautiful Serpentine marble was destined to become one of the state's great industries. Architects generally speak in the highest praise of it as it is singularly free from fractures, and the green colorings with faint, light mottlings, run entirely through it.

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One of the many practical results of the inventive genius of man which will tend to create a blessing in the household is an automatic air valve, manufactured by the Kellogg-Mackay-Cameron Company, of Chicago, Kansas City, and Minneapolis.

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Among the later mergers incorporating in New Jersey is the United States Realty and Construction Company; capital, $66,000,000 taking in the George A. Fuller Construction Company, which we believe was capitalized at $10,000,000 two years or so since. Three or four realty companies to one construction company is the way the new mixture is proportioned.

Had "L'Art Nouveau" first seen the light in our country, its parentage would have been traced without difficulty to the candy-pull,—even Mr. Sullivan would not have been under suspicion. But in France, whatever its origin, it has shown enough of vitality and action to stretch its sinuous, insincere, and sometimes screechy self out of the prints and to actually have itself frozen into alleged architecture. What the future has in store for it is not hard to guess. Meanwhile things have been built and decorated in the semblance of things on the earth or the air over or the waters under the earth that really look worse than some of the first fruits of the new art.

Some late trials in Boston of the more common fire-proof partitions indicate that those of terra cotta and similar blocks plastered, are far more sound-proof than those of metal laths supported by metal studding and all plastered in solidly. This would be expected. If, however, the steel studs are staggered and considerable "felt" or "quilt" woven between them before metal lathing and plastering the two sides, a partition can be made that is considerably more sound-proof than one with the terra cotta blocks doubled with no felt or quilt between. These fibrous substances might reduce the fire-proof nature of the partition under extreme circumstances unless the well-known sea-weed quilt with asbestos covering were used.

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How the British editor of architectural weeklies learned the art of producing so many acceptable weekly inches of reading matter doesn’t appear. Perhaps they are not. At any rate the only similar venture on this side the Atlantic is not imitated. It is not long since our esteemed weekly contemporary gave any amount of space to a disaster that had happened to a new concrete elevator at Duluth a year or two ago, showing by “figgers” how the builders had put up something hopelessly faulty in design. Meanwhile the break had been repaired and the whole thing used for a year or so as if nothing had happened. Later this yawning weekly space couldn’t be filled outside politics, so we have columns showing how the great coal strike is really a political strike by the toughs who lead the miners’ organization, a proof being found in the fact that a group of eminent and highly approved party politicians failed to induce a settlement. From which conclusion a column or so of argument leads on to the further conclusion that 148,000 workmen are either dupes or roughs. Such things come of a state of mind inseparable from those flamboyant inexorable weekly inches.

The Western Architect is published monthly, at about the middle of the month, and the middle of all of the Western World that amounts to much.

By the way, one way of accounting for the disaster to the elevator is that damp grain in one of the bins sweat and swelled till it “caked” enough to keep its place for such time as allowed considerable grain to be drawn from below the cake, when the mass that was suspended, fell; and between the falling grain and the confined air below it, something had to give way.

While the visitor to Rome may be glad to do as the Romans do, the visitor to remains of outlying Roman grandeur is often made glad by finding that the builders of these provincial cities were not obliged to do as the Romans did. Roman remains, especially of the Eastern empire, show something of freedom from imperial influence, sometimes a little breaking out of that intellectual character which distinguished Greek work. The ruins of Heliopolis, in modern Baalbek, are exciting new interest by reason of the German excavations and explorations now in progress there. It is the good fortune of The Western Architect to have a friend just returned from Syria whose communication in another column describes the German work and discoveries. The Germans do not allow the new discoveries to be photographed by others, for which reason we are able to show only such views of the ruins as appeared above ground before the excavations began. But in some way the Kaiser’s men were less jealous of the tablet mounted in one of the upper niches of the famous wall of the upper temple,—the art and heart memento of the fraternizing of modern imperialism, divine right, and what not, as represented by William and Abdul,—for the tablet is only guarded against kodaks and sling-shots by a wire screen in a wooden frame.

The Mississippi, on its way to St. Anthony Falls, passes many a farm and small town. It brings, among other things, many a pine and cedar log. As it reaches the City by the Falls, part of its waters are pumped through miles of pipes to reservoirs, there to stagnate till drawn through other miles of pipes to supply the city. Those who desired the reservoirs obtained the city’s credit for their building, largely by a plea for pure water. Much was said and written in those times, and since, about a filtering plant, but there are no filters. The credit of the city has been much used since the construction of the reservoirs in connection with and pumping water thereto. There are those who claim all these outlays to have been made in the interest of pure water. Springs are used because believed by some to supply purer water, and distilling plants for the same reason. These distill water only. Wells are patronized for the same reason. The river furnishes water that always differs from what it furnishes at another time. So do the reservoirs, naturally. Springs mostly furnish water that looks clear enough, but which deposits this and that. When a spring-water patron breaks a jug in which delivery is made, he is said to transfer his custom. Wells, unless they pierce the lime-rock which underlies most of the town, and draw their supply from the sand-rock underneath, are in favor with no one who has thought about it. Some wells, supplied by this soft sand-rock and fortified against surface drainage, yield water that is clear for a while, but soon becomes turbid when exposed to light and air, coating the pitcher, not often scorched, with a red-brown deposit. Thousands of people drink these various waters for years, and if made sick by them, are unconscious of it. The question of pure water in this city is not, and never has been, acute,—an issue. It has come handy when “needed improvements” were to be secured. The lime-rock floor on which most of the city rests, has its fissures and even “faults,” where for a space it may not be found at all, unless at a different level from the rim of the fault. Man has pierced it here and there, and the underlying sand rock houses miles of tunnels. The river has gouged a great gorge in and through it, and deep into the soft sand-rock below. Nature has strewn much upon this lime-rock floor, mostly sand. Looking from the river’s gorge, it is only here and there that one may see water running into it from off the lime-rock floor. What has become of most of the rinsings of this town that have run through the sandy cover to this cracked, faulty, and much-pierced lime-rock floor? In
this town a school-house may draw more than a thousand pupils from no great space on this sandy cover. The space need not be sewer'd much, nor paved at all. What kind of a water-supply may be expected from a well in the school-yard, even though it pierce the lime-rock?

If crop reports are true, certain consumers will soon find one item of the cost of buildings less distasteful. Unless the immense flax crop can be so manipulated as to neutralize the general course of supply and demand, linseed oil prices must soon take a downward course. Possibly a shortage in the Russian crop may lead to American shipments to cover a wider area than usual, but otherwise a very great surplus is predicted here. Linseed oil prices have their curious features as affecting the ultimate consumer. It is not easy to see how, with oil ranging from 25c to 80c per gallon at retail in barrel lots within the last three years, retail prices of linoleum, of varnishes, and of good grades of ready-mixed paints have kept the even tenor of their several ways. The retailer is favored by cheap oil, because, as it is sold at many points, he makes nothing any way, and he is naturally grateful for conditions that permit him to make nothing with the least capital. The painter likes to have cheap oil, for it enables him the more easily to compete with the ready-mixed paints. Whoever is shrewd enough to use the mixed paints sold in paste form also gets the benefit of low-priced oil. The fellow who thinks he can paint his own work, but is doubtful as to his ability to mix paints, buys such as are ready mixed, and he would seem to be obliged to buy when the ingredients are dear, in order to get his money's worth. That he ever gets his money's worth is denied by many a painter, who preaches "lead and oil," for the reason that the "ready-mixed" goods tempt so many to dispense with his services. We trust no reader will fail to remark a word about the respective merits of the two great rival paints.

As to building prices in the West generally, it is becoming evident here and there that they have advanced beyond the safety point and are checking enterprise. The cause of this falling off at points seems to be not so much the high prices of materials, noticeably those produced by "combines," as the antics of some contractors and labor unions, or groups. Not that these are more culpable, but they come more directly into contact with the man who wants to build, and the course of some of them is a continual reminder of the ancient owner of the fowl that laid golden eggs. Building activity in the West, it must be remembered, has very little in common with the great "boom" that culminated late in the '80's, when almost any kind of a building could be put up on the faith that some one would be found who would loan the money to pay for it. Compared with that time there is now very little speculative building, and it is idle to expect every one who is thinking of building to be carried off his feet by the current of building activity. Men who build for investment have a habit of counting the cost, and when they run against items that are manifestly absurdly high they wait.

Children, and others, used to be told of the king who boastfully showed his hoard of gold to a sage, who said: "One day shall come a king with more and better iron than thou, and he shall take thy gold from thee." Around the greatest of lakes lies a kingdom with more and better iron in its hills than may be found elsewhere. The people of this kingdom were on a time digging their ores and were making of them iron according to their needs in workshops. They made great beams in a new and better way than others, and they made smaller irons in their shops, according to their needs. Then came the men with golden hoards, and closed these shops and carried these ores a thousand miles and sold to the people of this kingdom such iron as they must have at double price.

**Among the first fruits of the movement culminating in the "Insurance Engineering Experiment Station," promoted by Mr. Edward Atkinson, and in charge of Prof. Charles L. Norton, of the Massachusetts Institute of Technology, are reports of tests of so-called "fire-proofing" processes for treating wood. These tests did not cover a wide range, in fact, were largely confined to woods furnished by three of six leading companies engaged in the treatment of woods to increase their fire-resisting properties. Only one of the six, by the way, is said to have made broad claims as to the absolutely fire-proof character of its goods. The tests were conducted in several ways, so as to be, if not conclusive, at least instructive. As reported by the journals devoted to insurance engineering, which gives much space to these trials, opinions of disinterested people whose judgment is worth considering varied in no great degree. Prof. Norton and Mr. Atkinson not being able to see any great value in the processes, while Prof. Woolson, of Columbia College, was willing to give the several treatments credit for fire-retarding qualities of some value. The three processes tried, one of which, if we remember rightly, is largely used by the government in naval construction, vary somewhat in efficiency; but while the treated woods flame less readily than those not treated, specimens furnished by any of the companies make pretty good fuel, while flaming less they "glow" easily. Small sticks of treated woods supported at ends and subjected to the heat of a Bunsen flame, were destroyed quite easily, although they did not break quite so soon in any case as did the untreated woods. Incidentally it appeared that the treated woods acquired undesirable qualities that might, under some circumstances, more than offset any gain in value from added fire-retarding
brittle, and it was told that saws and other tools used
on them rusted over night. If such corrosion is per-
sistent, what is to become of work dependent upon
nails, anchors, and the like to keep these treated woods
in place?

The reports hint at less thorough trials of processes,
which consisted of simply coating the surface instead
of forcing chemicals into the wood, and these super-
official processes seem to have stood certain tests better
than those receiving the more extended attention. It
is quite possible that continued efforts may bring to
the notice of the Station some process which its man-
agers may recommend. As the case now stands every
is quite possible that continued efforts may bring to
the lay of it in the quarry nor to the way nature threw
it together; but it is the place he wants to split it, that
is all. Well, the big stone is in just about the size
of paving stones while you wait, and he takes a ham-
er and with a trifle of spalling he turns out paving
stones without a mark of face or sides, varying no-
dered dry-rot, but might sufficiently protect the point
from fire.

Some people who read that about good roads have
been at me to know how it was that neither Mr. Boz,
young Martin nor my father mentioned my present
employer. Probably he had run away from home be-
fore they knew old man Pecksniff, in which case nei-
ther the old man nor Merry nor Cherry would have
mentioned him. At any rate I made up my mind to
see how he would stand it himself if I took leave of
him for a day without asking. He took on a lot, it was
unprecedented, and all that; but I wouldn't have
missed seeing the men make paving-stones, let alone
the other work, for twice the fuss he made. For one
thing, it showed me to be true what we hear now and
then,—that it takes more skill to use a hammer right
than any other tool. Channelers and pneumatic drills
and saws and crunchers, if that's what they are called,
are all right in their way, but if a fellow is out to see
something really interesting, let him watch the men
make paving stones.

The most shapeless piece of hard stone is brought to
a man who works only with hammers, not even any-
thing to measure with but the eye. He hits it a few
blows with a sledge sort of a hammer, with a blunt
chiseled edge, turns it over, gives it a thump or two,
and it splits as true as a slate. The odd part is, that
the plane he splits it on seems to have no relation to
the lay of it in the quarry nor to the way nature threw
it together; but it is the place he wants to split it, that
is all. Well, the big stone is in just about the size
of paving stones while you wait, and he takes a ham-
er and with a trifle of spalling he turns out paving
stones without a mark of face or sides, varying no-
dered dry-rot, but might sufficiently protect the point
from fire.

I can see now why it was that the Chicago stone-
cutters made such a row about that stone out in the
southwest corner of the state, and over the line in
South Dakota, that quartzite that is so much harder
than anything Pharaoh had about him. The people
out in those quarries knew well enough that they nev-
er could cut the stone with anything of the nature of
point or chisel for less than two or three times what
other cut stone cost, but they found out what they
could do with hammers and they went about contract-
ing for quarry-faced ashlar where the requirements for
joints were not too strict. Perhaps the making of
paving stones taught them how. When the Chicago
stone-cutters saw what was going on, they said, “Here,
this isn't stone-cutting, this isn't even building, this
is paving. We are not going to work on buildings that
are paved on the sides, and when we quit the other
building trades will quit.” Those were the times when
a declaration of that kind passed at par, too, in Chi-
cago.

Mr. Hayes may have let them “spall” the quartzite
for that big church on Grant street,—I never noticed.
—he did a clever thing at any rate when he trimmed
his openings with a toolable stone.

To go back to Sandstone-on-Kettle-River. We
climbed around in places intended for goats, and if
there had been almost any other kind of stone there
these ways would have to be mended or left to the
goats, but if you have ever seen steps of this stone in
winter in town, you have noticed that they are the kind
that don't let you slip, either the first winter or the
tenth. There is one other stone that is about as good
in this respect, and that grows by the Erie Canal in Western New York, and is known in several states where it is used as Medina stone. If these sand stone people would only exert themselves to get in some down-town sidewalks, there would be plenty of calls for more after the first winter.

—Mr. Pinch, Jr.

The structure which will shelter examples of various industries at the Louisiana Purchase Exposition, to be held in St. Louis in 1904, will cover an area of 14 acres and will be executed in the Italian Renaissance style of architecture. It will contain two interior courts, embracing together an area of 121,000 square feet, so that the net area of building under roof will be 448,000 square feet, or slightly over 10 acres. The north front of the building is formed by two straight lines, each 600 feet in length, meeting at the center of the building in a projecting angle of 150 degrees. The south front is parallel to the north one and is of two lengths of about 460 feet each. The exterior of the structure shows a continuous colonnade, with the exception of the west front and west half of the north front. The architectural features of the building include corner pavilions, monumental entrances at the east and west fronts, smaller turrets flanking the main tower and dome, which is to be 350 feet in height, a portico in front of the main tower and an open colonnaded screen of segmental circular design in front of the dome.

An Eastern Architect and a Western Building.

The following article recently appeared in one of our leading exchanges, and although there may have been a time when some western town would do such disgraceful thing as indicated in this item, that period has passed, and we now seriously doubt whether there is a single place in the entire west where this fraudulent kind of work would be even thought of:

"I happened to be out west," said a Pittsburg architect, "when a certain town decided to erect a city-hall. Architects were invited to send in plans and specifications, and, although I hadn't fully decided to compete, I dropped in on a boss alderman one day to secure some information. I had been told that he was at the head of a ring, and it didn't take me long to discover that such information was correct. We had scarcely passed a dozen words, when he said:

"Mr. Blank, this building is to cost $800,000."  
"Yes."

"And there must be at least $200,000 to divide up among the pickings."
"Yes."
"Can you plan an $800,000 building which will yield $200,000 worth of pickings?"
"I have never done so."
"Then don't begin here. You'd not only muddle your own plans and specifications, but you'd tempt us to steal your whack of the stealings, and we want to get out of it with a little honor left to tackle some other job with. Try a railroad, water job or something easy, and good morning to you."

Romanesque Churches.

At the commencement of the Christian era, the city of Rome was the capital of the civilized world. All of those portions of the three continents of Europe, Asia, and Africa bordering on the Mediterranean, and even the barabrous island of Britain in the far west beyond the province of Gaul, and the kingdoms beyond Jerusalem in the remote east, were subject to her dominion. She levied upon these vast territories the tribute of their arms, treasure, and harvests; and in return gave them her laws, letters, and discipline.

At that time all that was potent in the advancement of the human race either emanated from or gravitated towards Rome. The early struggles and vicissitudes of the Christian sect took place mainly within the Roman dominions. It was alien to the institution of paganism, and it would be in the natural course of events that, in order to supplant the influence of the pagan belief, it would seek to establish itself firmly and permanently in the great center of paganism, from which all enlightening influences radiated.

It was natural that the early Christians should make their greatest efforts and suffer their greatest sacrifices in the city of Rome, where the population was at once the most advanced in the culture of the age, and the most debauched in the degrading rites of paganism. It was natural that in their inspired zeal for the saving of their fellow men, they should bear to be hunted like wild animals and compelled to hide in the caverns under the city, when they might have worshipped with greater security elsewhere.

If the imperial sanction could be gained for the practice of the new faith in Rome, the Christians would obtain a point of departure for the promulgation of the faith, which no other vantage ground could as speedily accomplish.

The early Christians of Rome were no doubt, principally Romans by descent, by birth, and by training. They spoke the same language, and had the same manners, the same habits of thought, and the same ideals outside of their religious belief, as their pagan fellows.

Upon receiving official recognition and emerging from the seclusion in which they had been forced by the hatred of existing institutions, they would select from among the public buildings then in common use, those best adapted for the performance of their reli-
The religious ceremonies. There were no buildings in Rome which could be found more suited to their purpose than the basilicas or halls of justice. As Ferguson says: "The bishops naturally took the place previously occupied by the praetor or quaestor, the presbyters those of the assessors. The altar in front of the apse, where the pious heathens poured out libations at the commencement and conclusion of all important business, served equally for the celebration of Christian rites, and with the fewest possible changes, either in the form of the ceremonies or in the nature of the business transacted therein, the basilica of the heathen became the ecclesia or place of assembly of the early Christian community."

Thus it happened that the buildings erected later expressly for the purpose of Christian worship had their prototypes in the Roman basilicas.

In the early centuries of the Christian era, before the settlement of the Gothic barbarians in southern Europe, the church architecture of Spain, southern France, and Italy, where the Latin racial characteristics predominated, was the lineal descendant of the Roman basilica. It was lacking in the studied refinements of its pagan prototypes, but the boldness and vigor and freedom of its treatment of mass indicated the transition which was taking place in thought and feeling from the old ideals to the new.

It was essentially a physical expression in constructional form. The horizontal lines of the classical styles still predominated, but without the refining touch of antique culture. If the early church builders felt the inspiration of the new ideals of life, they had not yet found an intelligible medium through which to give it expression. They still endeavored to convey their thoughts in the language they knew, but their vocabulary was lacking. It was impossible that a medium of expression which had gradually developed and crystallized in the atmosphere of a mythology and an art which dealt mainly with the physical and intellectual aspects of nature and human existence, should express the great devotional ecstasy that subordinated the flesh and all its manifestations in any form, to an exalted spirituality.

It might be said that the style of the early Christian or Romanesque church was a provincial dialect of the magnificent and sumptuous diction of the Roman and classical age; a language whose utmost power could only depict the attributes of the pagan gods, whose characteristics were essentially physical and human. It was a language of form confined in its expression to the classical ideals of life; a style of architecture in which the horizontal lines predominated, and which could not extend above the horizon, which joins the intellectual and physical in art expression.

Judged from the classical standpoint, the Romanesque churches of southern Europe represent the decadence of a style which found its fitting expression in the magnificent public buildings and temples of Rome; a style expressive of power, weight, pressure, and necessarily unable to express the purely spiritual emotions of the new life. It was a fugitive remnant of a style which had eminently served its purpose as a medium of expression of a civilization which was slowly crumbling to decay, and whose form-language was inadequate for a society whose moral and religious ideals had become so totally different.

While the Romanesque builders still involuntarily planned and constructed in accordance with pagan tradition, yet the absence of the old forms of studied conventional ornament, and the presence of a growing profusion of crude naturalistic forms of animals and plants, drawn fresh from the earth, which is the original source of all form symbolism, was the unmistakable indication of the budding germs of a new flora of art, which was later to develop into the perfect and distinct devotional form expression of the middle ages.

The designs for the Mining and Metallurgy building for the St. Louis World's Fair, by Theodore C. Link, architect, has been completed. The building is to be the same size as the Liberal Arts building, 750 wide by 525 feet long.
A RESIDENCE AT PASADENA, CAL.
Supplement to
THE WESTERN ARCHITECT.

A COTTAGE AT PASADENA, CAL.

October 1902

Supplement to
THE WESTERN ARCHITECT.

A RESIDENCE AT LOS ANGELES, CAL.

October 1902
A RESIDENCE AT LOS ANGELES CAL.
Red Wing Produces One-Half of Minnesota's Clay Products.

According to the government census reports on clay products and manufactures, Red Wing enjoys the distinction of producing fully one-half of the output of the state of Minnesota.

An unsatisfactory condition is shown in clay working, not only in Minnesota, but throughout the United States as a whole, the capital invested in 1900 and the output being several per cent less than in the year 1890, but this, the census report explains, was due to the hard times of 1893, which closed the brick yards. The brick industry, according to the census report, is the first to feel the effect of hard times and the last to recover.

But Red Wing has not been affected by the general decline. While the remainder of the state has been going backward, Red Wing has more than doubled its clay manufactures, a fact which is indicated in the figures of the report.

The big falling off in clay-working in ten years has been in the manufacture of common brick, which has decreased from a value of $1,089,468 in 1890 to $753,825 in 1900. The manufacture of pressed and fancy brick shows increase in quantity, though a decrease in value. The manufacture of sewer pipe has come up from practically nothing in 1890 to nearly $200,000 in 1900, and here is where Red Wing helps out the state at large in keeping up its reputation among clay producers.

The increase in the amount of business of the potteries of the state is not shown, but the product for 1900 is given at $206,300. The number of men employed in all clay industries in the state is 1,276 in 1900, against 2,238 in 1890. The falling off is explained as largely due to the introduction of machinery.

Besides making appropriations for the erection of 185 new government buildings, Uncle Sam has decided to enlarge and repair some fifty-eight old buildings, and congress has consented to increase the cost of several others now under construction, this being necessary because of the increased cost of materials and labor. Some of the new buildings are to be models in their way; notably the new postoffice for the city of St. Louis, which is to be completed in time for the coming exposition. Extensive enlargement and repairs are to be made on the old government building at Richmond, Va., which was occupied by Jefferson Davis and the confederate secretary of the treasury during the civil war. In Cleveland the site for a new government building has been changed in order to harmonize with a plan for grouping all the public structures between the lake and the square. The city is to build a new court-house, a city hall, an art gallery, an auditorium and a public library, and congress has consented to change the location of the federal building so as to conform to the system of the group. Supervising Architect Taylor has recently been in Minneapolis to plan repairs for our antiquated and out-grown building.

German Excavations at Baalbek.

By George C. Doolittle.

Every traveler in the Holy Land visits, if possible, the vast ruins of the ancient Roman city of Heliopolis. It is situated at Baalbek, a small modern Syrian town, usurper of the former dignity and grandeur of its ruined predecessor. In the autumn of 1898 came a royal tourist, the emperor of Germany, whose immense retinue and equipment for tent life filled the town with splendor and unwonted activity, almost a repetition of old Roman days. Among other ceremonies was the unveiling of a tablet inside the Temple of Jupiter, commemorative of his visit. On one-half the marble slab are sentiments in German with the royal German crest. In the parallel column is the same in Arabic, but surmounted by the Sultan's monogram. Queer combination,—Jupiter, Abdul Hamid, and William!
the operations is immense, but this does not daunt German persistence. Plots of ground surrounding the ruins have been purchased and filled with debris—earth and stones. Temporary tracks for moving the dump-carts have been laid in all directions, and so great is the amount of rubbish removed that it has entirely changed the contour of the surrounding district and panorama.

View of principal ruins of Baalbek. The smaller and foremost Temple of which the cella and portions of the peristyle remain standing is 228 feet long.

The change within the ruins is commensurate with the labor bestowed. The great temples originally stood upon this vast area. The larger, the Temple of the Sun, consists of four distinct sections of varying size, from east to west. The first is the grand portico, reached by a broad flight of steps. It is a rectangle, originally with twelve columns in front; the whole portico is now filled with debris. Two Latin inscriptions announce that this great temple was erected and dedicated by Antoninus Pius and Julia Domna (hence about 190 A. D.). Excavations in this portico are now in progress, though so recently begun that no results can be tabulated. Behind this, and connected by a triple doorway whose portals are, respectively, 10, 23, and 10 feet wide, is the hexagonal court, where the engineers have done some excellent work. They have uncovered a large hexagonal paved floor, several feet lower than the other level, surrounded by steps (also preserving the hexagonal outline). Several stone altars were found among the rubbish, their bases so cut as to fit exactly over the edge of the highest step. On all sides of this court, except the western, which was open to the next division, were shell-shaped niches and lateral chambers. Passing eastward to the immense square entrance court of the temple proper, the observer is in an area 450 feet long by 360 feet wide. Here the excavations have brought to light the original Roman altar, upon which sacrifices were offered before the entrance to the Temple of the Sun. The Christian emperor, Theodosius (about 285 A. D.), thought to efface this heathen altar by building upon it a large basilica. The foundations of the church have been carefully traced by the Germans, though they were largely removed in uncovering the altar area and the grand series of wide steps leading up to the temple level. This mighty edifice was surrounded by a peristyle of nineteen columns on each side and ten at the ends of these; but only six now remain, the glory of Baalbek. Sixty feet high, with Corinthian capitals, surmounted by their entablature, these great pillars tower above all else.

Surrounding the temple and its peristyle, on the north, west, and south, is a strange enclosing wall, made of the giant stones which have rendered Baalbek famous. These walls on the north and west are fully exposed. But the south wall lies buried under a vast pile of debris. To prove the theory of this surrounding wall the Germans have excavated at a distance of 20 feet from the peristyle, and have come upon just such gigantic blocks as form the wall upon the other two sides.
Much smaller than the mighty sun temple, although itself 228 feet long, it was roofed over, and had a peristyle all about it. This consisted originally of fifteen columns on the north and south sides, and eight at the rear towards the west, and also eight at the front. The portal was guarded by a double row of columns, each ending in one beautifully fluted. This work was Corinthian in style, very elaborate and beautiful. The ceiling between the surrounding peristyle and the cella was elaborately enriched with a paneling containing the figures of gods and emperors, alternating. These panels were contrived to fill in a beautiful geometrical framework all profusely carved.

The engineers have removed the rubbish from this peristyle, have strengthened some of the columns, and secured from falling the famous leaning column on the south side of the temple. Work at the great portal of the temple has wrought marked changes. For many years the central stone of the lintel over this

A stone 70 feet long, 14 feet thick, and 13 feet wide cannot be easily hid. This vast temple area from east to west, with its portico, two courts and temple proper, was open to the sky, and worshippers standing under the great central doorway at the eastern portico could look clear across to the resplendent Temple of the Sun.

Operations before the portal of the smaller temple—the Temple of Jupiter—have brought to light a vast double series of steps and platforms, reaching from the great portal far before it alongside the walls of the Temple of the Sun. For centuries this great plaza has been buried under rubbish, a wall built across it in one place, and a Turkish fortification jutting over and upon it. The Temple of Jupiter is one of the most beautiful of archeological remains in all Syria.
Jupiter shall have been entirely cleared of debris, and, they designed to make antiquities. A dim, bewildered and planned with the most exclusive regard to permanence, says one of the London architectural papers. They have found that the floor is nearly as far below the ground level as is the top of the walls above it. Thus the great portal assumes its original magnificent proportions. The only thing to suffer by this mighty transformation is the memorial tablet of the Emperor and Sultan. It now reminds one of Baron Munchausen's horse tied during a great blizzard on the under side is the figure of an eagle with outstretched wings, holding in its talons a staff, and in its beak long garlands, held at the other ends by cupids or genii. This great portal is flanked by piers or wall masses large enough to incline stairways leading to the top of the walls and originally to the roof.

The interior walls of the temple are ornamented with fluted half-columns surmounted by exquisite Corinthian capitals, and the interstices occupied by a double arrangement of niches. The Germans are attempting the Herculean task of clearing out the interior of the temple. They have found that the floor is nearly as far below the ground level as is the top of the walls above it. Thus the great portal assumes its original magnificent proportions. The only thing to suffer by this mighty transformation is the memorial tablet of the Emperor and Sultan. It now reminds one of Baron Munchausen's horse tied during a great blizzard on the under side is the figure of an eagle with outstretched wings, holding in its talons a staff, and in its beak long garlands, held at the other ends by cupids or genii. This great portal is flanked by piers or wall masses large enough to incline stairways leading to the top of the walls and originally to the roof.

The Egyptians of all nations seemed to have built with the most exclusive regard to permanence, says one of the London architectural papers. They designed to make antiquities. A dim, bewildered instinct, a yearning after immortality, was the primum mobile of all their undertakings. They preferred an unconscious existence in the form of hideous mummies to utter dissolution; they feared that the bodiless spirit might lose its personal identity, and expected, or wished, after the expiration of the great cycle, to find all that they had left exactly as they left it—the same bodies, the same buildings, the same obelisks pointing at the same stars. Strange faith—that the soul, after a furnace. It is not necessary that a furnace should do not meet this condition than for any other one reason. Nothing connected with a heating-plant is more important than the proper location of the furnace and warm-air registers, and the size and arrangement of the air-supply.

Fourth.—The fourth essential to successful furnace heating is the size of the heater. This should be ample large for the work it has to do, and the result will be economy of fuel and greater durability of the furnace. It is not necessary that a furnace should be several sizes larger than required; indeed, this is a positive disadvantage, but it is easier to get along with a furnace which is much too large than one a little too small, just as a man with a No. 7 foot would be more comfortable in No. 9 shoes than a man with a No. 9 foot would be in No. 7 shoes.
Aside from churches, where furnaces are almost universally used and where their superiority to other systems is not questioned, the largest sphere of the warm-air furnace is in residence heating, and here it is that mistakes are, perhaps, most often made. More skill and judgment are required to install a warm-air furnace properly than to put in a steam or hot-water plant, because with the latter the circulation of heat is positive, and if the pipes are properly graded there is no serious danger of failure, while the circulation of the warm air depends upon numerous conditions not always thoroughly understood by the average heating contractor. It is a comparatively easy matter for an experienced engineer to change over a defective warm-air plant, and effect a saving of from 33 1/3 to 50 per cent in the amount of fuel consumed. Another point to be considered is convenience of operation. There are some furnaces good enough as far as heating capacity is concerned that would try the patience of Job, because they are made without any reference to convenience in starting fires, feeding, shaking, dumping, regulating, etc.

The accompanying cut shows a very simple arrangement whereby the coil for heating a kitchen tank is located in an off-set at one side of the feed-door, where it is entirely out of the way and avoids the necessity of drilling or otherwise weakening the heater. Every furnace should be provided with a direct draft-damper to give an immediate outlet for smoke and gas when starting or replenishing fires, and when this damper is closed the smoke products should be compelled to circulate far enough and in such a direction that every bit of available heat will be utilized.

When such a furnace as I have endeavored to describe, has been properly placed in a building adapted to furnace heating, there is nothing in the line of heating apparatus more satisfactory or more economical.

In comparison with other systems the warm-air furnace has the following advantages: The cost of installation is less, and the expense of maintenance is as small, as, if not less than, with other systems; there is no danger of pipes freezing or of expensive repairs of any kind becoming necessary. Furnace heat is also more sanitary, because pure air is supplied to the building and more perfect ventilation can be obtained. Warm-air registers, and particularly the new sidewall registers, are usually less objectionable than radiators, on account of the space occupied by the latter and the difficulty in sweeping under them.

Furnaces also transmit the heat to rooms with which they are connected much more quickly than either hot-water or steam boilers, and this is a great convenience in mild weather when a few sticks of wood will do in a few moments what would require hours and considerable fuel to do with a hot-water plant.

To offset these advantages there is the trouble sometimes experienced in heating remote rooms, or such parts of the building as are exposed to prevailing winds, but this can usually be obviated by locating the furnace so as to favor such rooms or by arranging for a circulation that will draw the warm air over to the colder parts of the building.

When houses are not conveniently arranged for warm-air heat, a combination of warm air and hot water is often a great advantage over warm air alone, and this style of heating has rapidly grown in favor during the past few years. It combines the advantages of both warm air and hot water without the disadvantages of either, and is in many respects the ideal system of heating.

In placing a combination plant the same general rules apply as with furnaces, but, in addition, the shape, size, and location of the boiler must be considered. It is a very common mistake to load down a furnace with more hot-water radiation than it can carry successfully, and as a result the warm air part is rendered inefficient.
It is sometimes contended that the demand for furnaces will decrease as people get better able to afford more expensive plants, but we consider this a mistake. It is probably no exaggeration to say that the sale of warm-air furnaces and combination heaters throughout the northwest has doubled during the past year, and we believe that the demand for this apparatus will continue to grow in popularity as architects and the public generally become better acquainted with the proper methods of installation, and the style of plant which is best suited to one’s needs.

Painting a Floor.

Very frequently a painter may be asked to paint a floor, and in many cases is instructed as to the color, and other little matters. In the case of the floor being one that is to be done with oil paint, and to have much wear, the painter should select such coloring substances of certain earthy matters only, because the use of white lead for such a purpose is an error that should be avoided.

Many will advocate the use of lead in painting floors because of its supreme density and body, under the mistaken idea that density adds to its wearing quality. As a matter of fact no oil paint will stand less wear than white lead or colors composed largely of white lead. It simply covers the surface, and is one of the best paints employed to protect woodwork where there is no great wear.

Ochres make the best wearing paints, and they may be applied in several ways. They may be mixed with the oil, and applied with a brush in the usual manner, or they may be applied when mixed with hot stale beer and glue water, and when dry two coats of oil may be laid on thinly with a good strong brush, and, if properly done, the work will be lasting and satisfactory.

Care must be taken that the floor is perfectly clean and dry before the color is applied, and if the latter is mixed with oil, the floor should receive two coats, both of which should be well brushed in.

With new floors certain stains may be applied, and give satisfactory results without any sizing. When water stains are used they can be allowed to thoroughly sink in, and should then be varnished.

As a guide to the decorator who may be uncertain as to his ability to properly contrast colors, the following is offered as a guide in his decorative work: Black and warm brown; violet and pale green; violet and light rose; deep blue and golden brown; chocolate and bright blue; deep red and gray; maroon and warm green; deep blue and pink; chocolate and pea green.

The superficial area of floor space is found by taking the measurements of each room separately from wall to wall, squaring, and adding together. The walls are not taken account of. Measurement of a building “per square” for rough pricing is, however, obtained by taking the dimensions from out to out of the walls at the ground level, so as to include any projection of the plinth or other set-off. The cubical contents of a building are usually found by taking the dimensions from out to out of walls and from half the depth of footings to half-way up the roof.

Architect Cass Gilbert, of St. Paul and New York, has been commissioned to make plans providing for a new 20-story building on the present site of the Continental National Bank building in Chicago, besides adding ten stories to the Rand-McNally building, which adjoins on the west. It is said that this new enterprise in Chicago building operations will involve an expenditure of over $4,000,000.

The Construction News, of that city, says that “It is possible that Mr. Gilbert will give his brother practitioners in Chicago some ideas worth cultivating and broaden their view as to office building architecture.”

A large number of good things emanate from the west, and we will no doubt be pardoned in mentioning The Western Architect as one of them.

Cement and Building Material.

Grand Rapids (Mich.) bricklayers and masons have taken a stand against the use of cement for walls of buildings. To them this innovation seems harmful to their trade. Doubtless it may prove so, as cement is coming into use more and more as a building material. Thus far it may be considered to be only in the infancy of its development. Perhaps it will be just as well to have some understanding reached without bad feeling. If cement is to be the coming building material, however, it will be idle for masons to attempt to prevent its use. By becoming adepts in the handling of this material these tradesmen can continue to find profitable employment. By fighting its use and permitting others to become experts, bricklayers may eventually find the demand for their labor greatly reduced. It is worse than useless for these workers to attempt to get in the way of progress.—Exchange.

On the 14th the detached bell tower of St. Mark’s cathedral, in Venice, the tower known as the Campa¬nile, fell with a great crash in a pile of ruins 100 feet high. The height of the tower was 327 feet. It was erected in 888, restored in 1329, topped with marble in 1417, and crowned with the statue of an angel in 1517.

The cause of the collapse will not be made clear until the debris is cleared away for the restoration, which it is most gratifying to learn, has been promptly arranged for, a prominent New York banker of Venetian birth being numbered among the liberal subscribers.

Newspaper accounts give causes in every degree of plausibility—damage from a stroke of lightning being among the foremost. Another suggestion is made that the piling upon which most of Venetian buildings are supposed to stand may have given out. Meanwhile every street corner has its “I-told-you-so.”
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327 NICOLLET AVENUE, MINNEAPOLIS, MINN.
The Milwaukee will enlarge its freight depot in St. Paul. The addition will be 200 feet long and will be completed this fall.

The Minneapolis & St. Louis will build a new freight house at Fort Dodge, Iowa, and possibly a passenger station. The expenditure will be $25,000.

The Union Depot Company of St. Paul will build a $50,000 engine house and shops at the end of Third street. It will build also a turntable in the station yards.

A party of Milwaukee officials, including A. T. Earling, president, H. R. Williams, general manager, and many of the board of directors, including William Rockefeller, were in Minneapolis recently on the annual inspection tour. They went west on the Hastings & Dakota division.

The beautiful booklet issued by the Oregon Railroad and Navigation Company descriptive of Oregon, Washington and Idaho, contains much of interest to the prospective settler and many are turning their eyes toward that section of the union. The booklet is nicely illustrated and gives attention to the many industries in these states. Send six cents in stamps to A. L. Craig, General Passenger Agent, Oregon Railroad and Navigation Company, at Portland, Oregon, and receive one of these beautiful booklets.

Not in one train but in many. The North-Western Limited and Badger State Express trains to Chicago, the Twin City- Omaha Express, the Twin City- Omaha Limited, and the Twilight Limited are away ahead of any other trains. In fact the North Western line over which these trains run was the first line in the west to establish this high class of service and to the North Western Line belongs all the credit there may be of giving to the people of the Twin Cities the best equipped trains in the world. Others may imitate but have not equalled.

$32.90 to California and Arizona points via the Chicago Great Western railway. Tickets on sale daily during September and October. Five-day stop-overs allowed at certain California points. Through tourist cars. For further information inquire of L. C. Rains, agent corner Nicollet avenue and Fifth street, Minneapolis.

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