ANTIQUITY OF STEAM-HEATING.

That steam-heating is not new, says the *Safety Valve*, appears from remarks made by George H. Babcock before the American Society of Mechanical Engineers some time ago. Mr. Babcock cited the fact that when at Pompeii he found that the old Roman baths there were heated by steam, and heated in a better and more scientific manner than is practised at the present time. The walls were double, and the steam, of course, not above atmospheric pressure, was carried up through these walls all around the room. The walls were thus heated to a temperature approximating to that of steam, and the occupants of the room were exposed to a radiation from all directions. This, Mr. Babcock held, is the true theory of heating, and the system of steam-heating by indirect radiation, or heating the enveloping air only, is unscientific, expensive and uncomfortable. It is of interest to add here that the late Joseph Harrison, Jr., of Philadelphia, in delivering a lecture before the Franklin Institute several years ago, said that he had seen in the museum at Naples a boiler substantially of the same construction as the modern vertical, tubular boiler. This boiler was found at Pompeii, and was made of copper.

CURIOUS UPHEAVAL OF BRIDGE FOUNDATIONS IN HOLLAND.

In building a three-span railway skew arch bridge over the Poldewaart, in Kettrel, Holland, J. Wuckelback writes in the London *Architect*, the proceedings were commenced in the usual manner, with the intention of having separate foundations for each pier. This was by shooting in large quantities of sand, to form dams within which, when pumped dry, the foundations would have been excavated. After a length of about 70 feet of sand-dam, 10 feet deep, had been filled in without exhibiting any signs of sinking, a heavy thunderstorm occurred, during which the whole mass was suddenly engulfed to a depth of 29 feet, while there arose simultaneously, at a short distance down the canal, to above the water level, a mass of bog earth of an area of 4,489 square feet. This mass increased at subsequent periods of the proceedings to the area of 9,628 square feet, and there was reason to fear for the safety of the adjacent dykes and other works. Piles 70 feet in length, when driven and tied together by waling pieces, severed bodily from their position and became useless. Fascines equally failed in producing stability. The engineer, therefore, after directing the canal water into a side cut, surrounded the site of the intended foundation with mounds of sand, and the foundation pit was pumped dry. It then became necessary to remove all the bog earth from within the space for the foundation, which was accomplished by digging out spaces of a yard square and filling them in with sand as they proceeded, until, by commencing at the exterior and working inwards to the centre, all the bog earth was removed and a bed of sand had been formed in its place. The piles for the ordinary foundation used in Holland were then driven through the made ground, and the structure was completed with perfect success, the sand dam and the masses of upraised bog earth outside being subsequently dredged up in the ordinary manner to restore the canal to its original bed. The sudden rising of the bog earth during a thunderstorm is of frequent occurrence in Holland, and it would appear as if the adhesion of the mass of bog earth to the bottom was so slight that the vibration communicated to the water by the thunder sufficed to destroy the equilibrium, and the bog turf, which from its slight specific gravity will float even when wet, instantly rose to the surface.

USEFUL HINTS.

Recent experiments to test the strength of brick resulted in demonstrating a crushing resistance of from 5,000 to 22,000 pounds per square inch, according to the quality of the brick. The average of ten varieties was 7,150 pounds. As the standard strength given by the engineering text-books is only from 500 to 4,200 pounds, it is evident that great improvement has been made in the manufacture of brick since those books were compiled.

A correspondent of the *American Artisan* gives the tinsmiths a rule to find circumferences as follows: "This rule is of interest to those who do not know what we call the five magic figures to get the circumference of a pipe without a tapeline or a square. Take the figures following: 3, 16, 63, and multiply by 8, which means 8-inches in diameter; the correct size of the pipe without the edges will be 25-inches and 30-100 parts of an inch. Always use 31,936. If one of the tinmen know a better way I will be pleased to hear it. This is intended for an 8-inch stack."

PASTE FOR PAPER-HANGERS.—Beat up 2 lbs. of white flour into a stiffish paste with cold water. Use a good spatula to crush out all lumps, and then add 1½ ounces of crushed alum. This done, pour on the mixture about 2 gallons of boiling water and stir up the batter whilst adding this. If the water is boiling and the batter be effectually stirred whilst this is added, at first slowly, and then rapidly as the paste thickens, the result ought to be a bucket of good paste entirely free from lumps and strongly adhesive. It is well after the paste is made to pour on the top a pint of cold water. This course will prevent a skin from forming over the paste. The alum serves a double purpose in paper-hanger's paste; it prevents it from turning sour and makes it both thicker and stronger. In hot weather paste without alum would soon be in a state of putrification. But it is not advisable to use alum for paste which is intended to fix gold papers, for alum has a tendency to discolor and turn black all papers which have a metallic lustre. To prevent the often sickening odor that pervades a newly-papered room for some time, add to the paste a little oil of cloves, salicylic or carbolic acid. These things are cheap, and further are sure remedies for the nauseous and unhealthy odor of sour paste.

Prices of Building Materials.

LUMBER.

CAR OR CARGO LOTS.

1¼ and thicker clear picks, Am. ins..	$30 00@	32 00
1¼ and thicker, three uppers, Am ins.		37 00
1¼ and thicker, pickings, Am ins...		27 00
1 x 10 and 12 dressing and better......	18 00	20 00
1 x 10 and 12 mill run..................	13 00	14 00
1 x 10 and 12 dressing........ ...	14 00	16 00
1 x 10 and 12 common..	12 00	13 00
1 x 10 and 12 spruce culls......	10 00	11 00
1 x 10 and 12 maple culls...		9 00
1 inch clear and picks..	28 00	30 00
1 inch dressing and better.............	18 00	20 00
1 inch siding, mill run.................	14 00	16 00
1 inch siding, common	11 00	12 00
1 inch siding, ship culls......... ...	$10 00	$11 00
1 inch siding, mill culls...............	8 00	9 00
Cull scantling.........................	8 00	9 00
1½ and thicker cutting up plank	22 00	25 00
1 inch strips, 4 in. to 8 in. mill run....	14 00	15 00
1 inch strips, common................	11 00	12 00
1¼ inch flooring......................	14 00	15 00
1½ inch flooring	14 00	16 00
XXX shingles, sawn..................	2 30 @	2 35
XX shingles, sawn....................	1 30	1 35
Eastlake galvanized steel shingles, 24 W. G., per square..................		6 00
Eastlake galvanized steel shingles, 26 W. G., per square..................		50
Eastlake painted steel shingles, per sq.		4 00
Round pointed galvanized steel shingles, per sq..................		6 00
Round pointed painted steel shingles,		4 25
Round pointed, unpainted, Terne tin shingles..........................		4 00
Manitoba galvanized, steel siding, per square.........................		5 00
Manitoba painted steel siding, per sq.		3 50
Painted sheet steel pressed brick......		3 50
Painted crimped steel sheeting........		3 40

Price of Copper shingles according to weight

YARD QUOTATIONS.

Mill cull boards and scantling........		10 00
Shipping cull boards, promiscuous widths..........................		13 00
Shipping cull boards, stocks..		14 00
Hemlock cantling and joist up to 16 ft.	11 00	12 00
" " " 18 "	12 00	13 00
" " " 20 "	13 00	14 00
Scantling and joist, up to 16 ft.......		14 00
" " 18 ft		15 00
" " 20 ft.......		17 00
" " 22 ft.......		19 00
" " 24 ft.......		21 00
" " 26 ft.......		23 00
" " 28 ft.......		25 00
" " 30 ft.......		27 00
" " 32 ft..		27 00
" " 34 ft......		29 50
" " 36 ft.......		31 00
" " 38 ft.......		33 00
" " 40 to 44 ft..		36 00
Cutting up planks, 1¼ and thicker, dry	25 00	26 00
" " board,	18 00	22 00
Cedar for block paving, per cord...		5 00
Cedar for Kerbing, 4 x 14, per M....		14 00

B. M.

1½ inch flooring, dressed, F. M.....	28 00	31 00
1½ inch flooring rough, B. M........	18 00	22 00
1¼ " dressed, F. M.	25 00	28 00
" undressed, B. M...	18 00	19 00
" dressed............	18 00	22 00
" undressed	12 00	15 00
Beaded sheeting, dressed	22 00	35 00
Clapboarding, dressed................		12 00
XXX sawn shingles, per M, 16 in....	2 65	2 75
Sawn lath...........................	2 00	2 20
Red oak.............................	30 00	40 00
White...............................	35 00	45 00
Basswood, No. 1 and 2	18 00	20 00
Cherry, No. 1 and 2.......	70 00	70 00
White ash, No. 1 and 2...	25 00	25 00
Black ash, No. 1 and 2...............	20 00	30 00
Dressing stocks.	16 00	22 00
Picks, American inspection....		40 00
Three uppers, American inspection....		50 00

BRICK—℔ M

Common Walling......................		$7 50
Good Facing		9 00
Sewer.	8 50	9 00

Pressed Brick:

Plain brick, f. o. b. at Milton, per M...		$17 00
" " 2nd quality, per M		13 00
" " 3rd " "		10 00
Hard Building....		8 00
Moulded and Ornamental, per 100 .. .	$3 10	10 00
First quality, f.o.b. at Campbellville, per M		15 00
2nd " " " "		13 00
3rd " " " "		10 00
Hard Building.........................		8 00
Ornamental, per 100...	$3 10	10 00
Tiles..		24 00

Stone:

Common Rubble, Per Toise, delivered		14 00
Large flat " " "		18 00
Foundation Blocks, " Cubic Foot..		.35

Slate: Roofing (℔ *square*).

" red......................		16 00
" purple.......		9 00
" unfading green.		9 00
" black slate..........		7 50
Terra Cotta Tile, per sq...............		25 00
Ornamental Black Slate Roofing . .		8 00

Sand:

Per Load of 1½ Cubic Yards..........		1 25

PAINTS. (*In oil,* ℔ *lb.*)

White lead, Can.......................	6 25	6 50
" zinc, Can .	6½	7 50
Red lead, Eng...	5½	6½
" venetian........................	1 60	1 75
" vermillion.....................	90	1 00
" Indian, Eng....	10	12
Yellow ochre..	5	10
Yellow chrome........................	15	20
Green, chrome.	7	12
" Paris.........	25	40
Black, lamp.........................	15	25
Blue, ultramarine....	15	25
Oil, linseed, raw (℔ *Imp. gallon*)	68	70
" " boiled "	72	75
" " refined, "	78	80
Putty	2½	2½
Whiting, dry	75	1 00
Paris white Eng., dry...............	90	1 25
Litharge, Am.........................	6½	8
Sienna, burnt	15	20
Umber, "	8¼	12

CEMENT, LIME, etc.

Lime, Per Barrel of 2 bushels, Grey..		40
" " " White		55
Plaster, Calcined, New Brunswick..		2 00
" " Nova Scotia.. .		2 00
Hair, Plasterers', per bag..........		1 00
Cement, Portland, per bbl..........	2 80	3 00
" Thorold, "		1 50
" Queenston, "		1 50
" Napanee, "		1 50
" Hull, "		1 50