

Ancient Shacks in Gotham to Come Down at Last



For years visitors in New York have looked curiously at this little old row of frame buildings, hardly more than shanties, on the north side of Fortieth street, just east of Broadway and across from a theater, surrounded by towering skyscrapers and modern hotels, and said: "Thought land was high near Broadway—how do they do it?" The shacks are reputed to be nearly a century old and have been owned by the same estate for years. Recently the land changed hands and now they are to make way for a 25-story building.

Costs Millions for One Battle

British Figures Show \$100,000,000 Spent for Single Fight in World War.

New York.—Everybody knows that the late and still lamented war was not only the biggest but the costliest war in history. It remained for Great Britain to show how rapidly modern warfare runs into money, so that, for instance, the mere setting of the stage for a single battle may cost upward of \$100,000,000.

During the fourteen days from July 17 to July 30, 1917, the British army was getting ready for the third battle of Ypres. Part of this preparation consisted in a thorough bombardment of the German positions, during which the British guns expended 4,283,550 rounds of ammunition. This ammunition cost \$22,211,080.14, or approximately \$107,947,351 at normal exchange, according to "Statistics of the military effort of the British empire during the great war."

This formidable volume, recently published with the sanction of the war office, audits Armageddon and renders a cost accounting of destruction with almost appalling minuteness, as witness the four pence noted in the receipted bill for the preliminary bombardment of Ypres, which is further more itemized to show the different varieties and sizes of shell used. They ranged from 1,000 fired by the giant fifteen inch howitzers to 2,239,608 shrapnel and high explosive from the eighteen-pounders corresponding to our three-inch field gun. Next to these the six-inch howitzers consumed most shell—750,114—and the 4.5-inch gun was a close third with 728,345.

The total cost of this preparation was greater than that of any other indulged in by the British during the war. But the cost per day had mounted to an even higher level six weeks earlier, when, from May 20 to June 6, they were getting set for the battle of Messines. During a period of 17 days their artillery expended 3,561,630 rounds at an approximate cost of \$85,075,502. This averages \$7,734,227 a day, where the longer bombardment at Ypres averaged \$7,710,525.

Nearly 19 Million Shot in Day.

But even Ypres and Messines do not represent the peak load. The heaviest expenditure in any single day by the British armies in France was from noon to noon, September 28-29, 1918, when they pushed off for the final advance in Flanders before the armistice. During these 24 hours 5,938,847 rounds were expended, very nearly 12 shells a second or 720 a minute. The stated approximate cost of this ammunition was \$18,813,000, which amounts to \$783,878 an hour and \$13,064 a minute. Every time a watch ticked off a second that day the equivalent of \$217.77 or more than the monthly income of the average family, went up in smoke.

These figures are for artillery ammunition and for France alone, where the estimated strength of the British forces, all ranks and labor units, on November 1, 1918, was 1,000,727 officers and men. And this was only one of several theaters of war in which British land forces were operating. In Italy, on the same date, their number was 83,630; in Salonica, 193,007; in British East Africa, 115,670; in Egypt, 458,246; in Mesopotamia, 408,138; and at Aden 11,461, giving a grand total of 3,226,879 in the expeditionary forces. To this must be added the estimated strength of British and colonial troops at home, 1,603,384, and in India, Burma and the garrisons of the defended ports. This brings the total estimated strength of British land forces ten days before the armistice to 5,336,943.

To maintain and operate such ar-

mies cost correspondingly great sums. The "Statistics" states that for the period from April 1, 1914, to March 31, 1919, five full fiscal years, the army expenditure proper was equivalent to \$14,118,249,807, of which \$4,008,330,128 was spent in 1918-19 alone. The average yearly expenditure during the period was \$2,823,649,981. The army expenditure for the year April 1, 1913, to March 31, 1914, was \$137,857,256. So the average war time annual expenditure was 2,048 per cent of what it had been, and during 1918-19 was more than 2,900 per cent higher.

And the army expenditure was only one of several war cost items. Another table gives the average daily expenditures at different periods for the army, navy, munitions, shipping, etc., as follows:

1916—October 8 to December 9, \$27,970,040 daily.

1917—April 1 to May 5, when the Germans retreated to the Hindenburg line and the Arras offensive began, \$36,261,020 daily.

1917—November 1 to January 19, 1918, the period of the peak load, \$36,532,620 daily.

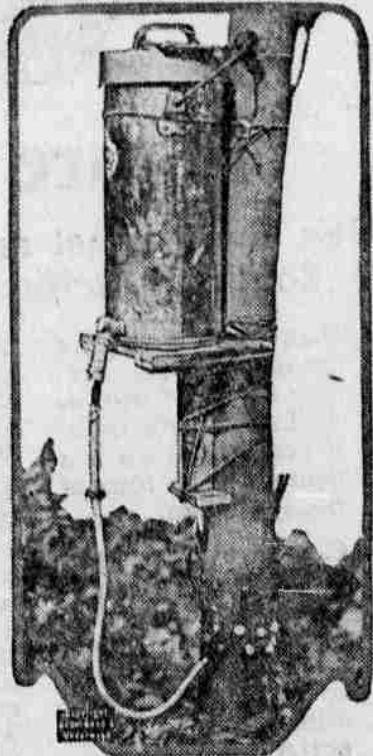
1918—April 1 to November 9, a stretch of more than eight months, \$36,172,980 daily.

To provide for these expenditures parliament granted between August 6, 1914, and November 12, 1918, a series of 25 war votes of credit ranging in amount from £37,000,000 to £700,000,000. The grand total of these credits was £8,742,000,000, equivalent to \$42,486,120,000 at normal exchange for the sovereign.

Great Britain, like the United States and unlike France, adopted the pay as you go policy and raised by taxation the largest feasible amounts of war revenue. Nevertheless her national debt, which on April 1, 1920, was £707,634,110, had on April 1, 1920, six years later, become £7,835,000,000, equivalent to \$34,638,908,225, and an increase of 1,007 per cent.

The total provision of men for the army, all ranks and colors, during the

MAKES COLORED LUMBER



By the remarkable discovery of S. Weinberg, Philadelphia chemist, working with Dr. Herbert Renner, German chemist, the tallest tree can be dyed any desired tint within two days' time, and at the same time cured by a preservative in the dye which obviates the necessity for weathering the lumber for seasoning. The cost of the process is less than a dollar per tree, and Mr. Weinberg is preparing to put his formula to commercial use next spring. The photograph shows the apparatus attached to a tree.

Fossilized Oyster Found in Canada

Winnipeg.—A fossilized oyster, believed by scientists to be a relic of the pre-glacial ages, has been unearthed by A. G. Shearer, plowing the top of a hill at Pope, Manitoba.

Dr. R. C. Wallace, professor of geology at the University of Manitoba, stated that, in all probability, Shearer struck a rock, carried by the ice of the Glacial age and belonging to a period millions of years earlier than the Ice age, as there is now neither river nor lake near Pope.

whole war, was 8,654,467, a contribution of man power, according to the "Statistics," second only to France, though the actual figures of the strength of the French armies are not available for comparison. The third largest contribution was made by the United States in sending approximately 2,000,000 men to France in the A. E. F.

3,000,000 Casualties for Britain.

The number of casualties among British troops in all theaters of war up to November 11, 1918, is given as 3,084,018, or more than 35 per cent of the total man power employed. Of these 659,246 were killed or died of wounds or disease, the greatest proportion of these mortalities, 561,335, occurring among the forces in France. The wounded numbered 2,035,955.

The operations in Mesopotamia created the heaviest wastage of all. There the maximum strength on any date was 447,531, and the total personnel employed during the operations was 889,702, or all but double, largely because of heavy casualties from sickness, there being only 31,758 battle mortalities, 51,156 wounded and 15,350 missing and prisoners.

Another table gives the approximate number of British casualties from the outbreak of war in 1914 to December 31, 1920, as 908,371 soldiers dead in or through the war, and the number of wounds received as 2,090,212. Of the dead 702,410 were natives of the British Isles, 59,330 were Australians, 56,639 were Canadians and 62,056 were Indian natives.

The variations in the length of the line held by British forces in France and Flanders is given in another table. It ranged from 20 miles in September, 1914, following the retreat from Mons and the first battle of Ypres, to a maximum of 123 miles in February and March of 1918, after which it steadily declined until it measured 64 miles at the cessation of hostilities on November 11.

304,000 Court-Martialed.

In regard to discipline 304,262 officers and soldiers were tried by court-martial during the war. Of these, 270,927, almost 90 per cent, were convicted. These courts passed 3,080 death sentences, of which only 346 were carried out, however, three of the culprits being officers, one of them found guilty of murder and the other two of desertion. Desertion, with 266 death penalties inflicted, constituted the chief capital offense. Murder was second, with 37 death penalties inflicted, and cowardice third, with 18 cases.

Between December 16, 1914, and August 5, 1918, Great Britain was exposed to 48 Zeppelin raids of which 12 included London; 59 airplane raids, of which 20 included London, and to 12 bombardments from the sea by German war vessels.

The airship raids killed 556 and wounded 1,357 persons, and the airplanes killed 857 and wounded 2,050, while the bombardments killed 157 and injured 634. The total number of casualties from the three causes was 5,611, of whom all but 752 were civilians. The raids and bombardments killed 411 women and 295 children and injured 1,210 women and 772 children.

The first tanks, a British device in origin, were built during the last half of 1916, 150 of them. During 1917 the output was 1,277 and during 1918 it was 1,391, giving a total output of 2,818 tanks.

Synthetic Rocks Produced in Day

Laboratory Reproductions Equal Earth's Finest Work—Use Nature's Processes.

Washington.—What is claimed to be the latest wonder of modern science is the man-made reproduction of synthetic minerals, to be followed in a few months by synthetic rocks. The reproductions are said to equal mother earth's finest workmanship and to require less than a millionth part of the estimated time needed by her.

They are the fruits of years of patient research and laborious hours in the laboratory; of hazardous experiments with powerful machines capable of exerting pressure of 200,000 pounds to the square inch—all carried to their present stage of success at the geophysical laboratory of the Carnegie institute of Washington.

To manufacture minerals and rocks science is simply duplicating nature's processes, but is accomplishing the same results, on a much smaller scale, of course, in a single working day. Nature took bewildering ages and smelted her wonders in the vast forges of the earth; science is fabricating its copies in a few highly polished and innocent-looking little steel "bombs."

Same Minerals Used.

Mother earth manufactured her minerals and rocks, science has learned, by means of extreme heat and extreme pressure. First the minerals known to be contained in the mineral under experiment are poured into a tiny tube made of pure platinum, one end of which is sealed by solid gold. The opposite end is then sealed and this container placed in the "bomb."

The bomb is made of the finest steel obtainable. Its aperture is small and its walls extremely thick in comparison, all making it capable of withstanding the terrific test it is about to undergo. A small electric furnace made of the same, although impure, constituents of rubies, is placed in the "bomb" and the apparatus sealed. Then it is ready for the ordeal of searing heat and gigantic pressures.

Both are applied gradually, the heat sometimes being permitted to register as high as 2,500 degrees Fahrenheit and the pressure as much as 60,000 pounds to the square inch. Gradually the gauges creep up, and up and up. Suddenly they relax and the pressure drops. The watchful attendants know "something" has happened inside the bomb and the heat and pressure are quickly turned off. When the platinum container is cut open mineral particles or rocks, whichever the case may be, are found inside.

Rocks That Will Bend.

Not only are these minerals the replicas of nature's own products, but in many instances purer—completely free from the discoloring impurities that are found in the natural originals. For instance the jadeite made at the geophysical laboratory of the Carnegie institute is light yellow in color. Natural jade is green. The green coloring, however, is supplied by an impurity, and the synthetic jade readily could be made the same shade by including the impurity in its constituents.

Science has gone nature one better in its experiments. It has discovered that by injecting more water into the rocks it can make them susceptible to bending—gelatin-like. If still more water is forced into them under heat and pressure they are quite readily reduced to liquid—liquid rock, in fact. But when the uninitiated visitor to the laboratory opens his eyes in wonder at such spectacles, the scientists simply laugh and quite learnedly say: "Why, there's nothing so remarkable about that."

Able to Compress Water.

Tests with high pressure have also disproved some old theories. The first is that water cannot be compressed. Science has discovered that water can not only be compressed, but that under

a pressure of 130,000 pounds to the square inch it freezes into a cake of ice so thickly condensed that it sinks like rock in water. Mercury, too—the "unfreezable" mineral used in thermometers—can be frozen under a pressure of 170,000 pounds to the square inch.

Science has yet to learn, however, to duplicate the wonders of nature at the same cost before it can compete with her in the commercial world. Mother earth can do her work so vastly cheaper in that respect. For instance, if you were determined to have a synthetic tombstone, science could probably make you a granite one—but it would cost something like a billion dollars. Fortunes spent in research and past experiments must of course be figured in "cost production." The important fact, however, is that man can now make granite.

Of far greater value for the present are the laboratory's contributions to the study of seismology. Its experiments have resulted in scientists being able to determine accurately the flexibility of the various kinds of rocks and hence the speed with which earthquake waves pass through each kind. Thus, by timing the passage of an earthquake wave at different stations it is now possible for the experts to say with assurance of accuracy just what kind of rocks lie buried far beyond the reach of man in the respective areas.

HUNDREDS DIED HERE



Remains of a 12-story tower in a Tokyo amusement park which collapsed in the earthquake, killing about 700 persons.

Civil War Vet Has 77

Great-Grandchildren

Syracuse.—Perry Soles Cobb, of Ly-sander, Onondaga county, celebrated his ninety-sixth birthday at his home at Adams recently, at a party given by his daughter to his 151 descendants. Mr. Cobb, the oldest Civil war veteran living in Jefferson county, boasts of 11 children, 63 grandchildren, 71 great-grandchildren and six great-great-grandchildren.

U. S. Savants Win Calendar Row

Earliest Date in the New World History Is August 6, 613 B. C.

Cambridge, Mass.—The earliest dates in New World history are August 6, 613 B. C., and December 10, 580 B. C., by the present system of marking time, the Peabody Museum of Harvard university announced in making public the final solution of the chronology of Mayan dates.

This solution, made possible by the studies of Dr. H. J. Shinden of the museum, is hailed as a distinct victory for the American school of research in the records of the ancient inhabitants of Central America, since it follows the lines of approach laid down by several scientists of the United States in contradistinction to the basic theories of the German, French and Spanish savants.

"These positive and perfectly defined points in chronology probably fell within the working years of one of the world's first scientists, the unknown mathematical and astronomical genius who invented the Central American calendar and established the Mayan era," the museum's announcement says.

Spaniards Destroyed Books.

"Actually the numerous dates on the monuments of the great Mayan civilization in Yucatan and adjacent territory are counted from a beginning day which corresponds to October 14, 3373 B. C., but this beginning day was reached by putting seven cycles of 144,000 days each for the past of the world before the historical first day of the numerical count.

"This historical first day was August 6, 613 B. C. At this time a numerical record of elapsed days was begun, and in the years that followed various astronomical events were put down as they happened, a procedure which soon gave a picture of time adequate for the perfection of a calendar machine.

Fights Railroads and Routs a Mayor



Miss Helen Schultz, twenty-four, of Mason City, Iowa, who operates 24 bus lines, is fighting single-handed the efforts of four powerful railroads to have her license revoked. In an altercation with the mayor of Cedar Falls, Iowa, over a local permit, she called the latter an "old fool," and then obtained a \$1,500 judgment against him for false arrest.

Told Farmer What to Do.

"The most dramatic proof is the discovery that a series of monuments at Copan deal with an ancient congress of astronomy in 503 A. D.," the report says. "It appears that in 392 A. D., two monuments were set up on hills on either side of the valley of Copan, the western one showing clearly on the skyline.

"These monuments are between four and five miles apart and a person standing before the eastern one, or at some spot in the city on the line connecting the two monuments, would see the sun set directly behind the western monument two times in the course of the year, namely, April 9 and September 2 in the average Gregorian year.

"Both of these dates are recorded at Copan on various monuments and they appear prominently at other cities. They are connected with calculations leading directly to the days of the equinoxes and solstices. The astronomical congress at Copan celebrated a common acceptance of certain features of the calendar and a shift in the base line which involved a concept of relativity too complicated for easy explanation.

"The Mayan year was of 365 days, and, while the Mayas did not interpolate leap year days, they knew just how many to allow for the accumulating differences for any given number of years."