

Ready Made Houses.

We have before referred to the large business carried on in some sections of the country by the manufacturing of ready made houses. A correspondent of the *Old Colony Memorial* paid a visit not long ago to Fairfield, Me., where a large establishment is located for the production of these knock down houses, and he says that few have any idea to what extent this business has been carried in Waterville and its neighborhood, or to what perfection it has been brought. In the establishment to which we refer dwelling houses are made, like boots and shoes, in any quantity, and of any size or style, and for any market in the wide world. Not long since this concern received a single order for fifty houses for Cape May, to be delivered speedily and in complete finish.

These houses were to be, not sheds nor shanties, but regularly ordered dwellings; and they were made accordingly and so delivered, and contain hundreds of occupants at this moment. An order will be received for a \$50,000 hotel, or an ornate, French roof cottage, for a fine country estate, and these as easily and expeditiously furnished as an ordinary boarding house for a country village, or a barn for a ranch in Kansas or Colorado. Do not suppose that only a coarse, rough frame is thus sent out, to be trimmed into shape on the spot where it is delivered! On the contrary, the house is complete when it leaves the factory, and as ready to go together as is a musket when it leaves the armory at Springfield, all the parts being found, even to the knobs for the doors, and the screens and shades for the doors and windows, according to specifications. Great trains of freight cars stand waiting about, and are freighted almost daily here. The refuse trimmings and edge cuttings of the lumber are carted off to a neighboring pulp mill, and there speedily turned into material for paper or other products. Machinery for almost every conceivable use in connection with wood is at hand, and house materials, of any kind or size or shape, seem to drop out like meal from a hopper. In a recent instance, where a large building was furnished for a Southern order, the parts were thus made, and when put together in the city where the building is now standing the length of the latter was found to vary not the eighth of an inch from the original specifications, although its length on the front numbered hundreds of feet. Every inch of this building, from the sill to the last shingle, was sent ready prepared from this factory, and "set up" as readily and almost as quickly as a nail cask.

Alaskan Mummies.

Four Alaskan mummies were brought down from Alaska by the schooner *Kodiak*, on her last trip. Three go to Berlin and one to the Smithsonian Institution. The bodies are wonderfully preserved, even the skins in which they are wrapped being intact. One mummy, evidently that of a woman, is now in possession of the Alaska Fur Company, and is in a state of almost perfect preservation.

The mummies were secured by A. Jacobson, who has been over two years in the country collecting for the Royal Museum of Berlin. He is of the opinion that the mummies are at least 200 years old, all evidence obtainable pointing to that fact. The Esquimaux formerly preserved the bodies of their dead shamans, or medicine men, and those of their chiefs and their wives and their children, in this manner. After death the viscera were removed from the interior of the body through the pelvis, and the limbs being pressed close to the body, the legs well up under the chin, were dried and incased in skins, and then placed in some cave or rock shelter which was free from water or moisture. Here they remained for hundreds of years, and were revered by the living. To them were offered part of the results of their fishing and hunting excursions, if they were successful, for they judged success to be due to the spirits of those whose bodies were preserved. The mummies just brought down are in a wonderful state of preservation, considering the rude means employed. In the case of one that has been opened, the skin appears to remain intact, and the limbs are movable.—*San Francisco Bulletin*.

On the New York, New Haven, and Hartford Railroad one of the tests exacted from candidates for passenger train brakemen is the ability to make a distinct announcement to passengers of the names of the several stations. On most of the railways it seems impossible for the average brakeman to speak plainly. Any sort of jabber that happens to come into his mouth he considers to be just as good as the mention of the real name of the station.

SCIENCE IN ANTIQUITY.—CURIO'S PIVOTED THEATERS.

Pliny states (lib. xxxvi., cap. 15) that toward the year 700 of the founding of Rome, that is to say, a half century before Christ, a very wealthy Roman citizen was desirous of giving, on the occasion of the funeral obsequies of his father, plays that should surpass all those that had been witnessed up to that time. This was a difficult thing to do, since, a short time before, Scarus, the son-in-law of Scylla, and the possessor of a vast fortune derived from the effects of those who had been proscribed, had had constructed, while he was

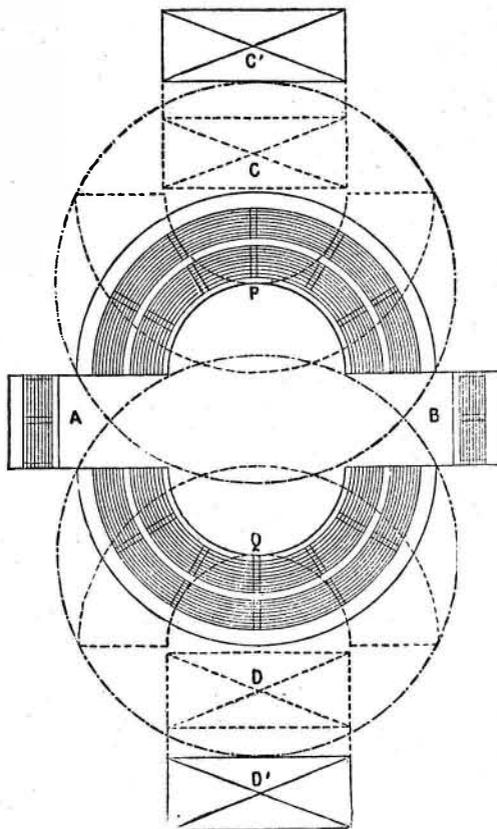


Fig. 2.—PLAN OF CURIO'S PIVOTED THEATER.

edile, a theater capable of holding 80,000 persons. The stage of this theater was ornamented with 360 columns, distributed in three superposed rows. Those of the lower row were of marble, and were 12 meters in height; those of the upper were of gilded wood, and those of the intermediate row were of glass. Between these various columns there were, in all, 3,000 statues.

Curio, not being able to hope to do anything more magnificent, says Pliny, was obliged to substitute ingenuity for extravagance. He therefore had constructed two very large wooden theaters quite near to one another, and each so exactly balanced upon a pivot that it could be revolved. In

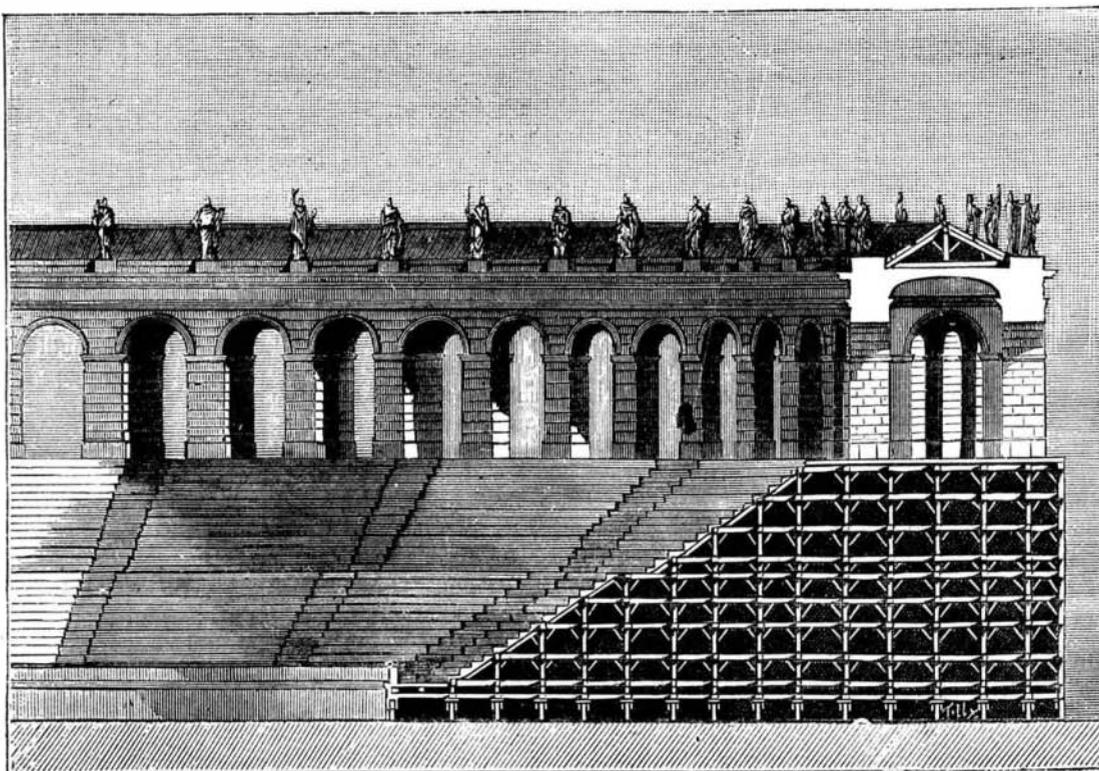


Fig. 1.—SECTION OF CURIO'S PIVOTED THEATER.

the morning plays were put upon the stages of each of these theaters, the latter then being placed back to back, so that the noise from one could not be heard in the other. In the afternoon, a few boards having been removed, the two theaters were all at once revolved so as to make them face each other, the magistrates and the Roman people being carried along with them. It was then only necessary to connect the corners of the two theaters in order to have an amphitheater in which gladiatorial combats might be exhibited. Which should be most admired here, the inventor or the thing invented? He who was bold enough to project the thing, or he who was rash enough to put it into execution? What is

most astonishing is the foolhardiness of the Roman people, which was sufficiently great to allow them to seat themselves in so movable and unstable a machine. These people, the conquerors and masters of the entire world, who, after the example of the gods whose image they were, disposed of kingdoms and nations, were here suspended in a machine applauding the danger by which they were menaced.

On the last day Curio was obliged to change the order of his magnificent entertainments, since the pivots became strained and out of true. The amphitheater form was therefore preserved. Having placed the stages back to back across the whole diameter of the amphitheater, he exhibited combats between athletes, and then all at once removing the stages, he caused all those of his gladiators who had been crowned during the preceding days to appear in the arena.

The mode in which these theaters were constructed has occupied the attention of several learned persons. Cardan, in his book "De Subtilitate," Barbaro, in his "Commentaire sur Vitruve," and the Marquis Maffei, in his "Verona Illustrata," have had a few words to say about them; but the most plausible and the clearest explanation is the one given by Count Caylus in vol. xxiii. of the "Histoire de l'Académie des Inscriptions et Belles-Lettres" (1756).

I shall first observe here, with Count Caylus, that architects had still the habit at this epoch of building wooden theaters, since the first stone one was erected at Rome by Pompey; and then I shall recall the fact that Pliny wrote his history about one hundred and fifty years after the event, so that we need not accept anything but the principal data of his narrative, and may perhaps regard the circular voyage of the Roman people as a simple oratorical embellishment.

We know that such Roman theaters as were designed for the representation of tragedy or comedy, as well as for athletic spectacles, consisted essentially of three parts—the *cavea*, the *orchestra*, and the *stage*.

The *cavea* consisted of a series of seats raised above one another and forming concentric semicircles in which the spectators were seated. The upper tier, which was much the widest, formed a covered promenade. The *stage* was a parallelogram raised above the ground and placed against the diameter that limited the *cavea*.

Finally, the *orchestra* was the part which was situated on a level with the ground, and which extended between the stage and the *cavea*. It was here that the authorities were placed.

As for the amphitheaters that were designed for gladiatorial combats, these were formed of a series of oval tiers of seats inclosing the arena.

It will be seen that the transformation due to Curio's imagination might have been effected, as Pliny indicates, by a rotation, around the pivots, P and Q, of the two *caveas* whose framework rested upon a series of small wheels (Fig. 1) movable in circular tracks that were probably of metal like the wheels themselves. The stages, C and D (Fig. 2), of the two theaters, which were constructed of light framework, could be taken down and pushed back at C' and D', and allow the two theaters to revolve on their axes so as to come face to face, while leaving between them only the space necessary for the rotary motion. This space was then filled with light and movable pieces of framework, A and B, that formed on the ground floor vast doors for the entrance of the gladiators, and, in the story above, boxes for the Roman magistrates, who, whatever Pliny has said about it, must have been obliged to leave their orchestra stalls during the maneuver.—*La Nature*.

Early History of the Air Pump.

If it is difficult to decide who invented the telephone, one of the most recent inventions, how much more difficult it must be to ascertain the date of the discovery of the air pump more than two centuries ago. Gerlandt contributes a paper on this subject to Wiedemann's *Annalen*, in which he says that only this much can be established with certainty in regard to the date of its discovery, namely, that it was

prior to the middle of August, 1652. Boyle invented the transparent receiver with movable cover; Huyghens, the air pump plate; Huyghens and Papin, the barometer test (manometer for low pressure); Papin, the doubly perforated cock, the use of two barrels, and the valves; but the latter were also used by Sturm.

FRECKLES can be removed, according to Dr. J. V. Shoemaker, by the careful application of a little ointment of the oleate of copper at bed-time. He makes the ointment by dissolving the oleate of copper in sufficient oleo palmitic acid to make a mass.

Salmon Canning in Oregon.

Astoria, at the mouth of the Columbia River, Oregon, was founded by John Jacob Astor as a fur trading post in 1811, and his enterprise, at that day and for many years afterward unique, was celebrated in a volume written by Washington Irving. The location has become the great salmon canning depot of the Pacific coast. The business was begun in 1867, and in the first year 1,000 one pound can cases, containing 48 cans each, were put up for the market. Now, according to a correspondent of the *New York Times*, there was sent east last season 282,000 cases of salmon, which is expected to be increased next year to 300,000 cases, making 11,200 tons, or 1,000 car loads to be sent over the newly opened Northern Pacific Railroad. During the last season 153,600 tons of salmon were packed at Astoria, the larger portion of which went to San Francisco, from thence to be sent to all quarters of the globe, about two-thirds of the total catch going to Europe.

There are thirty-seven canneries in Astoria, employing about 4,000 men to man 2,000 boats, and as many more to dress and can the fish. Chinese are the cannerymen, and Italians, Greeks, and Scandinavians the fishermen. The average weight of the live salmon is 32 pounds each, although fish weighing as high as 80 pounds have been caught. The dressed fish weighs just about one-half less than it does when caught. The "handling" of the fish is an art. The "slitter" has a row of fish ranged on a table with the tails toward him. He walks along the table, and with a rapid movement cutting off tails and fins as he moves. Then the fish are reversed, and with equal celerity he chops off each head with a single motion. Then he slits the fish open and removes the entrails. The dressed fish are cut into slices by revolving knives, and by a compressing machine are packed into cans. A can of salmon is cooked in superheated steam long enough to cause the complete disappearance of the bones, otherwise the contents would spoil.

A Cause of Typhoid Fever.

The theory that the emanations from obstructed foul drains conveying decaying vegetable matter or human excreta is provocative of typhoid diseases, appears to accumulate testimony; and therefore that these drains should always be kept free and occasionally washed or "flushed" would seem to follow. The sanitary superintendent to the Board of Health of New York city has recently reported that an increase of typhoid cases might be expected, one of the reasons for the report being the restricted supply of the Croton water for cleansing purposes. The gist of the report on this subject is the requirement of an abundance of clean water for flushing all water closets, soil pipes, and drains. Dr. John C. Peters says that typhoid fever is caused largely by broken, overfilled, or otherwise defective drains, the latter of which are common in the country, and there typhoid fever is more common, in proportion to the number of inhabitants, in small towns and villages, and even isolated farm houses, than in large, well sewered cities with an abundant water supply. Typhoid fever is largely imported into New York and other cities every fall by visitors returning from so-called health resorts and summer boarding houses, but it generally dies out in the city. This year, however, partly because of the drought, we have not had sufficient water to flush our drains, soil pipes, and sewers.

Foreign capitalists have just bought a large tract of timber land in southeastern Arkansas, said to contain 460,000,000 feet of timber.

JAVANESE BOATS AT THE INTERNATIONAL COLONIAL EXHIBITION AT AMSTERDAM.

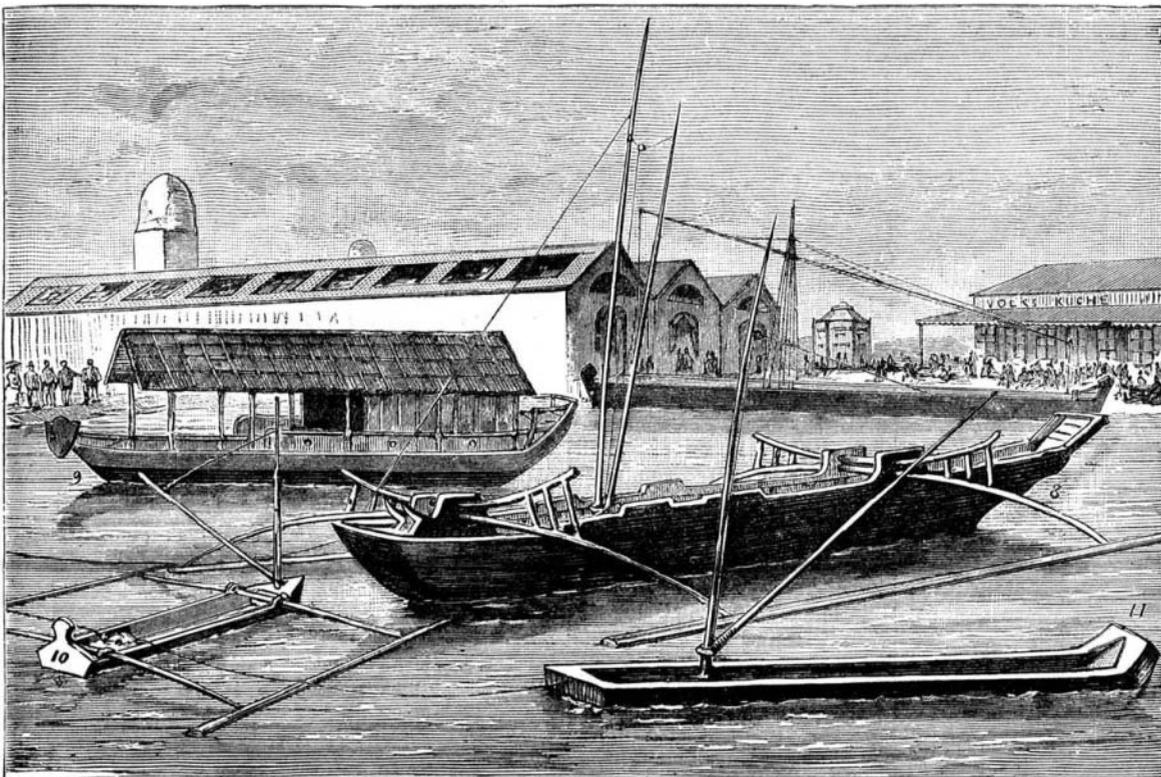
The industries of the Javanese are in a comparatively high state of perfection. Their arms, chased and inlaid swords, or "kris," their beautiful jewelry and fine works in silver filigree, carvings in ivory and ebony, fabrics, etc., are all made with very good taste, very strong and durable, and with the most primitive means. The Javanese are also very expert in building ships, although surpassed in this branch of industry by their neighbors, the Malays. In the exhibi-

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tion there are hundreds of models of their ships, from the Sultan's ship of state to the Chinese proa, thousands of which annually cross the ocean between Canton and Batavia.

In the annexed cuts we have shown the principal forms and shapes of the vessels used along the coast. Not only the models are exhibited at Amsterdam, but also full size vessels, which are sailed on the canal flowing through the exhibition grounds.

The vessel marked 1 in the upper cut shows a proa from Makassar, on the island of Celebes. Vessels of this kind have room for two men only, but are used in traffic between the island of Celebes and Java, and remain out at sea for several days. This vessel, as well as those marked 4 and 5, is provided with means for preventing its capsizing. A transverse bamboo rod, or other piece of wood, extends over

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the vessel at each end and projects from its sides, and to the ends of the said transverse rods longitudinal rods are fastened in the manner shown. This frame prevents the capsizing of the vessel even in the greatest storms; but at the same time the boat offers greater resistance to the waves which dash over it with much force, and thus the danger of being washed overboard from these vessels is increased. Furthermore, it is very difficult to steer vessels provided with this contrivance, and they require much space in harbors. If this safety device were constructed with hinges, so that it

could be raised in the harbors, some of the difficulties would certainly be removed and the advantages still retained.

There is a good chance for an inventor to provide some ingenious contrivance by means of which these frames can be used on all small vessels in such a manner as not to be cumbersome and present too many difficulties. Every day we hear of drowning accidents caused by the capsizing of small vessels, and there is no reason why these safety frames cannot be used on the smaller vessels in our waters as well as on the Javanese vessels. In the vessels marked 6, 7, and 9

the safety frames are not provided, as these vessels are used for traffic on rivers.

No. 8 represents a Malay pirate vessel, in which a very ingenious device is provided for pressing the safety frames on the water, two rods being used at each end of the vessel instead of one, the rods crossing each other and struts being placed between the crossed ends of the rods, so that the upper end of one cross rod presses the outer end of the other upon the water.—*Illustrirte Zeitung*.

Toy Torpedoes.—How Made.

A reporter connected with the *N. Y. Sun* recently made a tour among the pyrotechnic manufacturers with the result of showing how the annoying torpedoes are made—those which children throw on the pavement with the result of startling staid men and women, and sometimes starting horses into unusual activity. The reporter that investigated found that silver was made into a fulminate by means of nitric acid, and charged into quills—goose quills—and this mixture of silver and mercury, with pebbles to give the proper amount of friction or percussion, comprehended all there was of the toy torpedo, which is entirely innocuous and only startling. The reporter says: "On the top floor of the house he visited a number of other children were seen working as rapidly as those on the floor below. In the middle of the floor was a huge pile of small pebbles or grit. A stalwart and motherly looking forewoman had the children in charge. A batch of five or six little ones sat on low stools on the floor under the skylight. Each held in her lap a board about two feet long by one foot wide. In this board, as in those seen below, were a number of indentures about a quarter of an inch wide and of the same depth. Each child was also supplied

with pieces of tissue paper about an inch and a half square. These sheets of tissue paper rested in their laps, while the board was on their knees. They would put a piece of tissue paper over one of the indentures in the board, and then with a rounded stick would push down the middle of the paper into the hole. This made a bag of the little square of tissue paper. When every hole in the board had been filled with these bits of tissue paper punched into the form of bags, the board was handed over to the next little girl, who had a long quill filled with the fulminate. Into each of the little paper bags she dropped some of the fulminate, and then passed the board over to another little girl. This one sat near the pile of pebbles, from which she filled up every one of the tissue paper bags. Then she handed the board to a fourth little girl, who had at her side a little pot of paste. This one constantly touched her finger to the paste and then twisted the tops of the tissue paper bags together. When the little tissue paper bags were pulled out, they were perfect torpedoes of the regulation Fourth of July pattern.

GERMANY has 500 mills for the manufacture of wood pulp, and such a degree of perfection has been reached in its manufacture that even for the better qualities of paper it is a complete substitute for rags. Wood pulp constitutes 75 per cent of the paper stock used in that country.