

TRAJAN'S SHIP OF STATE.

The excavations and discoveries made during the last two decades in all parts of what was formerly the civilized world have prepared us for all kinds of surprises, but we certainly could never have expected what has happened. The sea has given up a victim that it has hidden and—we hope—preserved for two thousand years. Near Rome, and not far from Genzano, in a craterlike hollow lies Lake Nemi, whose blue waters have long attracted artists and lovers of nature. The ancients knew how to appreciate the quiet beauty of the place. In a thick grove, near the Spring of Egeria, stood a temple of Diana—now in ruins—and, on account of the placidity of its surface, the lake was called "Diana's Mirror."

According to an old tradition an elegantly fitted ship of either the Emperor Trajan or the Emperor Tiberius was once sunk in this lake, and the tradition seems to be confirmed by the fact that a beam with bronze decorations was found when the lake was being searched for other purposes, in 1535. This beam is still preserved in a museum at Rome. A few weeks ago the hearts of all antiquaries were stirred by the news that these researches which had been suspended for so many years were to be continued by divers who had been set to work at the suggestion of Prince Orsini, the owner

Lamson's Kite—Trial of a Kite Carrying One Hundred and Fifty Pounds.

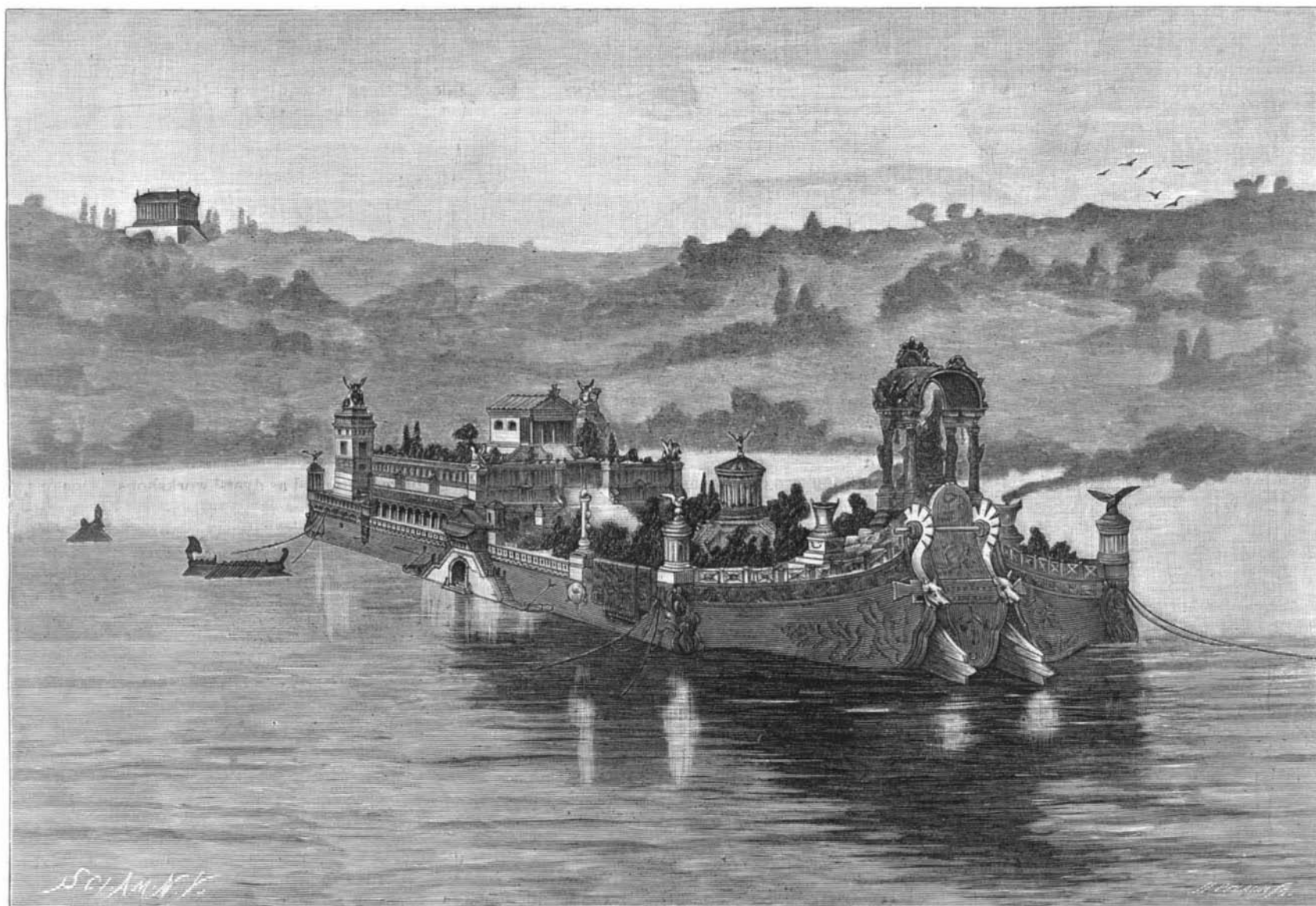
We have in past issues of our journals illustrated various tailless kites. The sport of kite flying has recently been taken up seriously as an adjunct to meteorology and aeronautics. Hargraves, Eddy, Lamson and others have done excellent work, especially at the Blue Hill Observatory, near Boston, Mass. Valuable experiments have been carried on. The SCIENTIFIC AMERICAN, vol 71, No. 11, and volume 74, No. 11, and SCIENTIFIC AMERICAN SUPPLEMENT, 1070, may be referred to for illustrated articles on the subject of advanced kite flying. On August 20, Mr. Charles H. Lamson, using a cellular or box kite built somewhat on the Hargraves model, attained a new and valuable result. He succeeded in lifting with his kite a weight of 150 pounds, designed to represent a man, to a height, as reported, of 600 feet.

The kite was started from the ground with a length of 400 feet of rope paid out. It then, as released, rose steadily without any jerking until, as the altitude of 600 feet was reached, the rope parted. The kite floated off about half a mile down the wind, and is said to have reached the surface so gently that, had a real man been carried by it, he would not have been injured.

The kite includes a number of features that dis-

are samples and specimens of everything, showing the wide range of Russian industry. There is not much, perhaps, that is new and original in the purely European exhibits, but in respect of things which the West does not produce there is extraordinary diversity and abundance. The peculiarities of Russia's various races and the products of her provinces from the Arctic Circle to Central Asia are admirably displayed.

The exposition covers an area of 200 acres, near the confluence of the rivers Oka and Volga, beyond the Fair. The place is 260 miles east of Moscow, from which city it was expected there would be many visitors at the conclusion of the coronation festivities. With a view to this, numerous immense hotels were erected along the new avenue extending from the railway terminus to the main entrance of the exposition. These palaces, with the floating hotels on the Oka, have failed till very recently to obtain many guests, though the government has made great efforts to render the place attractive to foreigners. The exposition buildings consist of a large number of separate pavilions, interspersed with restaurants, refreshment kiosks, and flower gardens, grouped around a circular gallery, which forms the center. One of the most interesting sections is that of Central Asia. The people, their industries, their residences and mode of life, are fully



TRAJAN'S SHIP FOUND IN LAKE NEMI—A RECONSTRUCTION.

of the lake. The Italian papers announce that the sunken vessel—they fail to state whether the builder of it was Tiberius or Trajan—has been discovered at a depth of 80 or 90 feet, being completely covered with mud. After much trouble the divers succeeded in bringing up a bronze lion, a wolf of the same metal, besides various other objects. The Italian department of education and the learned men of the country have united as much as possible in the attempt to raise the treasure. The result is anxiously watched for.

In its original form the vessel must have been a splendid affair, provided with all the luxuries and comforts to which the rulers of that time were accustomed, and entirely in accord with its idyllic surroundings. The idea of having a little palace on the water was not original with the Romans, but, like much in their art and literature, was merely an echo of the civilization of other nations. The Greek historian Athenæus gives us accounts of the splendors of the vessels of Heron II of Syracuse and Ptolemy IV which show that they must have been very like the Roman one that was lost in Lake Nemi. If Trajan had anything to do with this vessel, it will be safe to assume that it was designed by the renowned architect, Apollodorus of Damascus. The accompanying illustration, for which, with the foregoing particulars, we are indebted to Illustrierte Zeitung, represents a reconstruction, actual size, of Trajan's ship of state, from remains found on Lake Nemi, the work having been done by the architect, Rainero Arcaini.

tinguish it from any other. The relations of the cells to each other can be changed by manipulating a lever, and if a passenger were carried by it, this and other means enable him to materially change the course and the position of the kite and also to direct its descent. The continuation of these experiments will be watched for with much interest. The fact that the kite carrying so large a weight descended gently to the earth is in itself a most valuable result of the experiment.

The Educational Value of Russia's Great Exposition.

The Pan-Russian exposition at Nijni Novgorod, nominally opened by the minister of finance on June 9, is now in full progress, says the New York Sun, and the multitude visiting it is swollen by the crowds of merchants and traders that annually attend the famous fair at the same place. The exposition is a government undertaking, upon which a great deal of money has been lavished, with the object of promoting trade within the empire. It is the 16th industrial exposition of all the Russias since 1829, three having been held in Warsaw, and the others in Moscow and St. Petersburg. The last was in Moscow in 1882. Since that date there has been a remarkable development of Russia's manufactures. It is evidenced by the present exposition in a most convincing way that Russia has ceased to be an exclusively agricultural country, and must be ranked with manufacturing countries of the first class. There

reproduced. The varied productions of Siberia are well displayed. Among the rest, the 197½ tons of gold worth \$140,000,000, obtained in the last 64 years from the mines of the Czar, are represented by two large globes. The exhibit of minerals, furs, etc., is very rich. Photographs of Siberian convicts disclose the queer circumstance that most of them are punished for "concealing their avocation and family origin."

Agriculture makes a poor showing, reflecting, it is supposed, the condition of this industry, which is depressed in Russia as in other parts of the world. The rural and domestic industries, apart from farming, make, however, a large display. Whole villages, it seems, are turning to the manufacture of useful articles to the neglect of agricultural pursuits. Spinning and basket work occupy great numbers. The largest progress in the past 20 years has been in mining and metallurgy, but much has been done in textile fabrics, cotton goods, silks, etc. Electrical contrivances obtain, of course, a marked prominence. The Machinery Hall has 147,000 square feet of space and is a fine affair. The art display is poor. The exposition was brought to Nijni this year, it is said, to revive the prosperity of this trade center, which has been declining. It is hoped that the great Siberian railway, when completed, will produce the same results. Expert opinion is, however, adverse to this view. The increased railway communication must, it is held, tend to develop other distributing centers.