SCIENTIFIC AMERICAN

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A WEEKLY JOURNAL OF PRACTICAL INFORMATION, ART, SCIENCE, MECHANICS, CHEMISTRY, AND MANUFACTURES.

Vol. LXIII.—No. 7. ESTABLISHED 1845. | NEW YORK, AUGUST 16, 1890. | $3.00 A YEAR. WEEKLY.

NEW ELEVATED CABLE STREET RAILWAY, JERSEY CITY.

The North Hudson County Railway Company, of New Jersey, started the first elevated cable road in the State about four years ago. Beginning at Hoboken Ferry, it runs in a westerly direction to Jersey City Heights, where the old elevator now stands. From here the company are extending their new road in a southerly direction to the Hudson County Court House, a distance of 1⅛ miles. The foundations for the upright columns are made of brick, 5 ft. in height, 6 ft. square at the base, and tapering up to 3 ft. square at the top. Running through these brick piers at each corner are 1¼ in. bolts, which are fastened on the under side of piers. The bolt is first run through an iron washer 10 inches square, the under side of which has a square sunken socket, which the head of the bolt rests in. The brick work is then built over the upper side of the washers and around the bolts up to the template, which is the height of pier. A 1,550 lb. iron cap is then placed on the pier. The ends of the bolts are left far enough above the brick work to pass through the ends of the cap. This is fastened to the brick work securely by means of heavy nuts. On top of the cap are three narrow openings about 1 ft. in length. The columns are lowered into these openings about 1 ft. and molten lead is poured in, which makes cap and column solid. The iron columns are 12 inches square, and about 13 ft. in height. The width of the road is 20 ft. The distance between each section is 30 ft. The average weight of columns is 1,230 lb. The girders are placed on the columns by means of a steam derrick on top of structure, and bolted securely to a plate on top of the columns. There are four long girders to each section from column to column. Across from one column to another are short girders. These are bolted to the same plate. The two long center girders are bolted to this cross piece at both ends. They are also braced by laterals and buck braces. The average weight of the long girders is 5,000 lb. The short ones, 2,600 lb. Width of girders, 2 ft. 3 in. Across top, 12 in. A six-strand wire cable will be used, 19 wires to the strand. The weight of cable about 25 tons. The cable will run on 24 in. pulleys 12 ft. apart. The cost of cable will be between $4,000 and $5,000. The heart of cable will be of rope. The cost of road will be about $300,000 a mile. Will be run by a Corliss engine, 500 horse power. The cable runs about 10¼ miles an hour. In the busy part of the day they calculate to run from 14 to 18 cars, 2½ minutes apart. The cost of the old and new road will be about $900,000. Length of cable for whole road 4½ miles, weight 51 tons. The Passaic Rolling Mill Company, of Paterson, N. J., furnish the material.

The Electric Light vs. Insects.

Prof. Lintner, State Entomologist, has made a microscopic examination of the insect collections of a single electric light, and estimates that the debris which he inspected represented 33,000 insects. As many of the smaller forms of insect life probably constituted the larger portion of those attracted to destruction by the light, he believes that the average number of insects destroyed in a night by a single electric light is nearly 100,000.

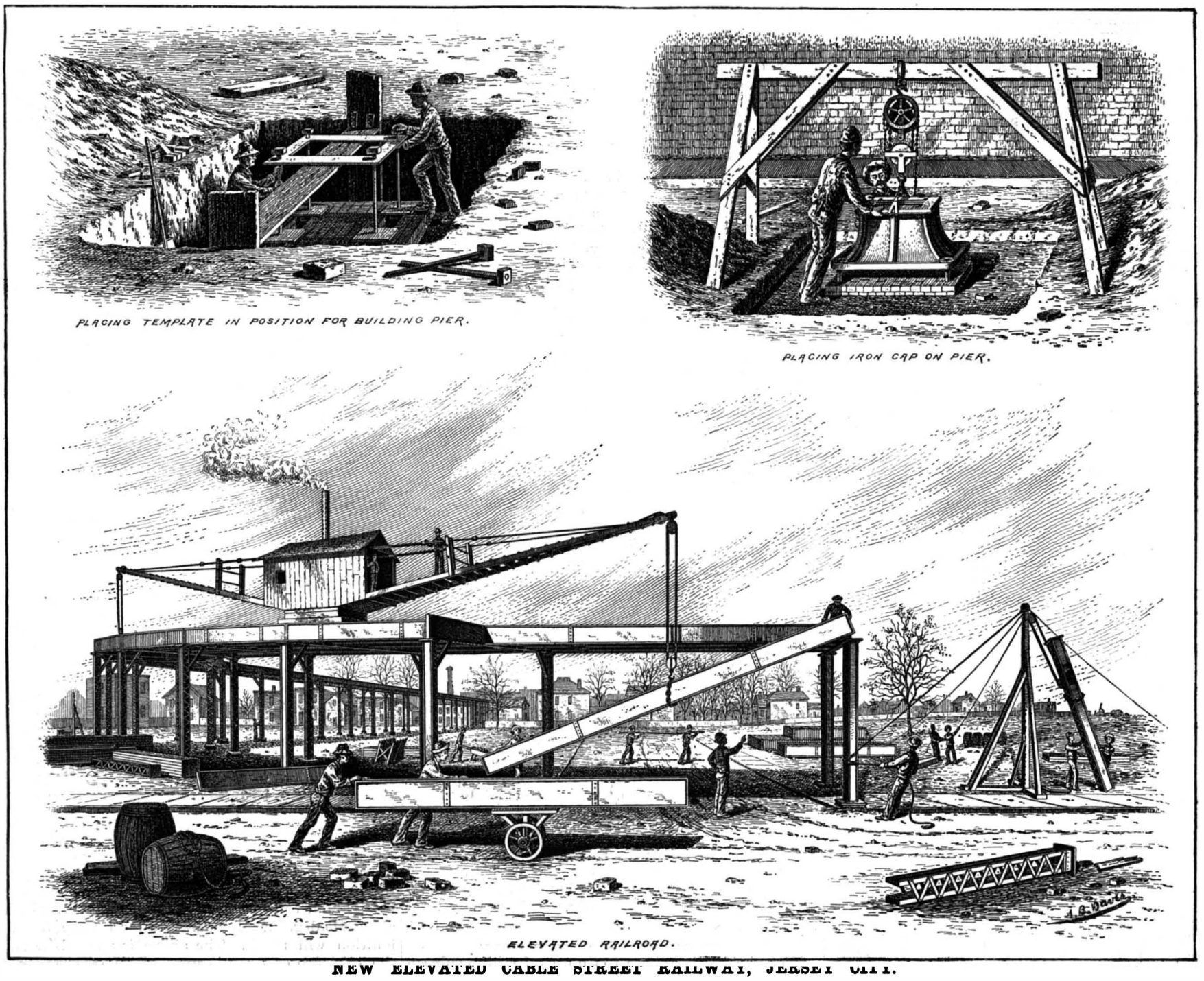
The larger portion of Prof. Lintner's specimen collection from one light consisted of minute gnats, midges, crane flies, and similar small two-winged insects. No mosquitoes were discovered among the victims, as they are not attracted to the lights. There were, however, large numbers of plant bugs, which are injurious to vegetation, particularly of one small species of a handsome green gassid, which feeds upon our grasses. A number of the moths, and one of the leaf rollers which have made such havoc in our fruit trees this season, were found, as well as other species of the same family. Prof. Lintner in speaking of his examination said:

"I was sorry to see quite a number of the beautiful gauze wings among the heaps of the slain, as their larvæ are the aphis lions, which aid in keeping down phides or plant lice."

"The electric light," to quote Prof. Lintner, "will undoubtedly prove an active agent in the reduction of insect pests, and also furnish entomologists with many rare specimens and with many species never before seen."

Shrinkage of Castings.

In locomotive cylinder, one-tenth of an inch in a foot; pipes, one-third of an inch in a foot; girders, beams, etc., one-third of an inch in fifteen inches; engine beams, connecting rods, etc., one-third of an inch in sixteen inches; large cylinders, say seventy inches diameter, ten feet stroke, the contraction of diameter, three-eighths of an inch at top; ditto, one-half inch at bottom; ditto, in length, one-third of an inch in sixteen inches; thin brass, one-third of an inch in eight inches; thick brass, one-third of an inch in ten inches; zinc, five-sixteenths of an inch in a foot; lead, the same; copper, three-sixteenths of an inch in a foot; bismuth, five-thirty-seconds of an inch in a foot; tin, one-quarter of an inch in a foot.



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