

THE WORLD'S FAIR LUMBER AND FORESTRY BUILDING.

The general plan and character of this original piece of architecture have been fully decided upon, the contract for its construction having been let September 24. It is shown in the accompanying engraving. The estimated cost is \$100,000, taking into consideration the fact that a large part of the material and some of the work will be contributed. The size will be 200 × 500 feet, and the central height 60 feet.

The following is stated officially, descriptive of the building: "It will be one of the unique features of the exposition architecture. Its interior appearance will be as natural as unhewn wood can make it. The pillars supporting the roof will constitute the principal feature of its architecture. They will consist of natural tree trunks from 16 to 20 inches in diameter and 25 feet long. Contributions of three trunks from each State and Territory will be used. The sides of the building, between the supporting trunks or pillars, will be filled in with slabs with the bark off. The window frames will be treated in the same rustic manner as the remainder of the building. The main entrance will be elaborately finished in different kinds of wood, the material and workmanship to be contributed by the woodworkers of the world."

The building has been provided for out of appropriations for the agricultural department, with which the department of lumber and forestry was merged, by authority vested in the management. When it was found that no direct appropriation had been made for the lumber and forestry exhibit, and that no special managerial head was to be provided, lumbermen all over the country were greatly disappointed; and finding himself placed in a peculiar and somewhat unfortunate position, without being himself responsible, Chief Buchanan set about to accomplish what he could for the lumber and forestry interests. He first engineered the lumber and forestry building through, and subsequently the sawmill building. The former will contain the entire government exhibit of lumber and forestry, with the exception of those things which may properly or necessarily be displayed in the open air. The exhibit will be general and international in its scope, the States and foreign countries all having space properly assigned for adequate representation.

Of course no complete or accurate idea of the exhibit can be had at this time, but the tentative plans of the world's fair management may be understood from the following official classification:

DEPARTMENT N—FOREST PRODUCTS—FORESTRY.

Class 1.—Logs and sections of trees—Samples of wood and timber of all kinds generally used in construction or manufactures, either in the rough or hewed, sawed or split, including square timber, joists, scantling, plank, and boards of all sizes and kinds commonly sold for building purposes. Also ship timber, as used in shipbuilding, or for masts and spars; piles, timber for fencing, for posts, or for timbering mines. Miscellaneous collection of wood.

Class 2.—Worked timber or lumber, in form of clapboards, shingles, sheathing or flooring, casings, moldings, stair rails, or parts of furniture.

Class 3.—Ornamental wood—Used in decorating and for furniture; veneers of hard and fancy woods; mahogany logs, crotches and veneers; rosewood, satinwood, ebony, bird's eye maple, madrona, black walnut; veneers, and other fancy woods suitable for and used for ornamental purposes.

Class 4.—Timber prepared in various ways to resist decay. (See also Class 118.)

Class 5.—Dyeing, tanning, and coloring—Dye woods, barks, and various vegetable substances in their raw state, used for dyeing and coloring, such as logwood, Brazil wood, peach wood, fustic, sumac. Bark of various kinds, Brazilian, acacia, oak, hemlock, murici, bicida, gordonia. Galls, excrescences, and abnormal woody products. Mosses used for dyeing and coloring.

Class 6.—Cellular substances—Corks and substitutes for corks of vegetable growth; porous woods, for special uses, pith, rice paper, etc.

Class 7.—Lichens, mosses, pulu, ferns, and vegetable substances used for bedding for upholstery, or for mechanical purposes, as teasles, Dutch rushes, scouring grass, etc. "Excelsior."

Class 8.—Gums, resins, vegetable wax, or tallow wax, including caoutchouc, gum senegal, tragacanth, arabic, mesquite gum, myrrh, copal, etc.

Class 9.—Seeds and fruits, for ornamental purposes; vegetable ivory, coquilla nuts, cocoon shells, ganitrus beads, bottle gourds, etc.

Class 10.—Miscellaneous products.

Class 11.—Wood pulp, for making paper and other objects.

Class 12.—Woodenware generally, as pails, tubs, platters, broom corn, brooms, cooper's stock.

Class 13.—Basket industry—Willowware, etc.

Class 14.—Rattan, bamboo, and cane work in part. (For rattan furniture, see also Group 89.)

Class 15.—Forest botany—Distribution of forests, of genera, of species (maps). Wood sections and herbarium specimens of the economically important timber trees. Seed collections—not herbarium—etc. Illustrations of forest growth, typical trees, botanical features. Anatomy and structure of woods. (Veneer sections and photo-micrographs.) Peculiarities of forest growth—Cypress knees, burls. Diseases of forest trees and timber. Injurious insects.

Class 16.—Timber culture—Plant material—Conifers, seedlings, and transplants. Broad leaved trees—Seedlings, transplants of various

sizes, cuttings. Seed collections and means for storing seed. Means employed in gathering and preparing seed and other plant material for market and seed testing.

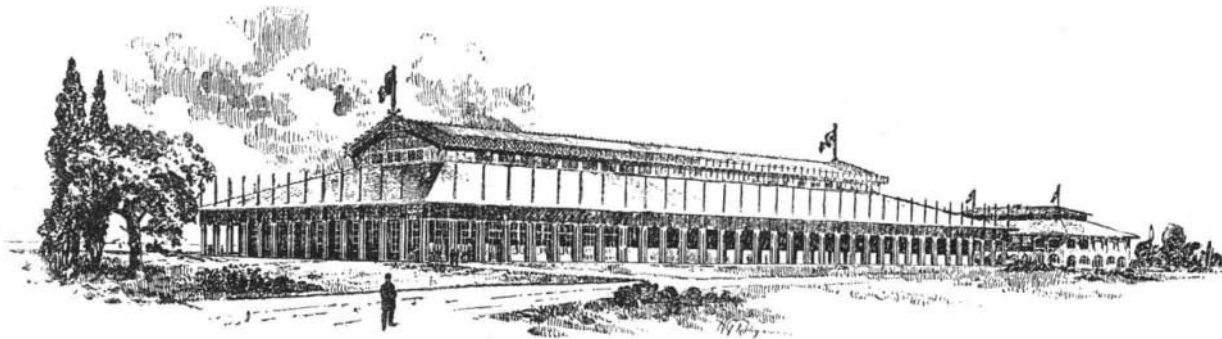
Class 17.—Timber culture and cultivation—Implements for the cultivation of the soil. Special adaptations. Sowing machines and tools. Implements and machines used for planting. Implements used in after-culture. Means of protection against insects, animals, climate. Seed beds and other graphic illustrations of nursery practice.

Class 18.—Forest management—Maps, plans, illustrations, calculations, illustrating forest management. Instruments for measuring standing timber. Growth of different ages and soils. Graphic or other illustrations showing influence of various managements on tree growth. Statistics of lumber trade and of forestry. Exhibits showing relation of forests to climate. Literature and educational means.

Class 19.—Lumbering and harvesting of forest products—The lumbering industry—Logging and transportation—Implements, machines, plans, drawings, and statistical material. Loggers' tools—Stump-pulling devices, marking devices, measuring tools. Loading devices—Sleds, flumes, slides, rope tramways, railroads, methods of water transportation, rafts, booms, etc. The tan bark industry. Other barks. The turpentine industry. The charcoal industry.

Class 20.—Preparation and manipulation of lumber—Dressing, shaping, and preparation of wood. Hewing of logs, spars, etc. Shaping of knees. Sawing and milling. Drying and seasoning of wood by use of antisepsics, etc.

The rustic colonnade, which will set off the building, was decided upon a few months ago, and solicitations for tree trunks were early sent out to the different States and Territories. It was stated that the building would occupy a commanding position on the lake shore, and that it would be designed to illustrate in its construction and arrangement the forest wealth of the world. The architecture should be of a rustic character to produce a beautiful and appropriate effect. A prominent feature would be a wide colonnade along the front of the building, facing the lake, and across either end. The supporting columns were to be trunks of trees with the bark on, representing the characteristic woods of the various States and Territories, thus adding to the unique beauty of the structure, creating general interest throughout the country and furnishing an opportunity for each State and Territory to exhibit specimens of its forest trees, and add character and attractiveness to the forestry exhibit. The trunks were to be from 16 to 20 in. in diameter at the base, tapering gradually, and 25 ft. long. Each column



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should have attached to it by the exposition a tablet on which should be engraved the name of the State or Territory furnishing it, the name of the tree, and an estimate, if furnished, of the approximate quantity of such timber in the State or Territory. Each State board of agriculture was asked to send on the three desired representative tree trunks.

Up to the present time a large number of the requests have received assurance of compliance, and while some of the State world's fair boards have not yet been organized, it is known that the rustic columns will be forthcoming in probably every instance.

The original plan has been somewhat changed, however. The trunks called for in the letter of solicitation referred to above will constitute the centers of each column, which will be completed by the addition of two smaller trunks, placed one on each side. The colonnade will also be extended along the fourth side of the building, in all probability. Thus the States will be called upon for more than an average of three trunks each.

The following list of trees has been suggested by Chief Fernow of the government forestry division, as leaders in a monographic display by different States:

Maine, white pine.
New Hampshire, yellow birch.
Vermont, sugar maple.
Massachusetts, elm.
Rhode Island, sassafras.
Connecticut, butternut.
New York, black spruce.
Pennsylvania, hemlock.
New Jersey, pitch pine.
Delaware, soft maple.
Maryland, chestnut.
West Virginia, black cherry.
Virginia, loblolly pine.
North Carolina, short leaf pine.
South Carolina, cypress.
Georgia, long leaf pine.
Florida, red cedar.
Alabama, chestnut oak.
Mississippi, sweet gum.
Louisiana, Bull bay magnolia.
Texas, pecan.
Arkansas, red oak.
Indian Territory, bois d'arc.
Tennessee, whitewood.

Kentucky, hickory.
Ohio, ash.
Indiana, black walnut.
Illinois, white oak.
Michigan, beech.
Wisconsin, red pine.
Minnesota, basswood.
Iowa, post oak.
Missouri, sycamore.
North Dakota, canoe birch.
South Dakota, box elder.
Nebraska, black locust.
Kansas, catalpa.
Montana, mountain white pine.
Wyoming, lodge pole pine.
Colorado, Engelmann spruce.
New Mexico, cottonwood.
Arizona, bull pine.
Utah, Utah white pine.
Nevada, mountain mahogany.
Idaho, Douglas spruce.
Washington, canoe cedar.
Oregon, sugar pine.
California, redwood.

The selection of representative trees is a matter of considerable care. Mr. Fernow has evidently undertaken to avoid repetition as much as possible, and when a wood might be chosen by several States as a representative one he has sought to determine which State was pre-eminently entitled to be represented by it, as for example the allotting of white pine to Maine, the former white pine State.

Some of the closer details of the building have not been fully worked out, and it has been suggested that each of the several entrances might be finished artistically to represent the woods of a State or region, similarly to the plan decided upon as to the main entrance. Several lumber associations have made inquiry on this subject, and it is believed that each entrance could be very tastefully and appropriately made to represent different lumber sections or interests.

With regard to the colonnade fronting the lake, it is thought probable that it will be utilized for an elegant cafe, and made to form one of the most attractive resorts on the grounds.

The statement has been published that the roof of the building would consist of a thatch of straw. On the contrary it will be thatched with tanbark or other similarly appropriate articles.

Other rustic exterior details will be fittingly worked out.

The procession of flag staffs surmounting the outward portion of the roof suggests a tentative plan to have the woods of all countries indicated by the flags thereof. Each staff will probably fly a national streamer, accompanied by state emblems or foreign colors, the whole constituting a very pretty and suggestive display.

The frontage of the building, as shown in the engraving, is that facing the lake, the structure at the north end being the dairy building.—N. W. Lumberman.

A Steel Lake Tunnel.

At Cleveland, O., R. Powell has submitted to the Board of Control his plans for the construction of a

steel tunnel for a water-works intake, to extend 2½ miles out into the lake. According to the local papers he proposes to build it of ½ inch plates, in sections 1,000 feet in length and 8½ feet in diameter. Bulkheads would be put in at each joint. Each section would be filled with air and could be floated out to the place where it is necessary to sink it. All the sections would be joined together before they were sunk by men working on rafts. The entire length of 2½ miles would be sunk in a solid piece by opening the manholes and pulling out the bulkheads. The manholes would then be closed by a mechanical contrivance. The cost is put at about 50 per cent of that of a brick tunnel, and Mr. Powell claims that he could have pure water flowing through his tunnel to the city within four months. He estimates the duration of the work at fifty years.

The Destruction of Mosquitoes.

A correspondent of *Nature* says: I was told a few years ago by an English gentleman who has a most beautiful place on the Riviera that he had freed his property from this pest.

The property in question is a peninsula, and for that reason is exceptionally open to separate treatment. On the Riviera, as many of your readers will know, fresh water is a somewhat rare commodity, and all of it that the inhabitants can lay hold of is stored for future use in tanks or small receptacles.

The larva of the mosquito lives, as I understand, only in fresh water. Consequently, on the Riviera he is found in the tanks I have named.

The carp is, I am told, passionately fond of the larva of the mosquito, and the Englishman I refer to had extirpated the insect by putting a pair of the fish in every tank.

The plan is not one that could be adopted everywhere, but it is worth bringing under the notice of those whose circumstances are like those of the Riviera.

DR. ELKIN, the astronomer of Yale University, and formerly of the Cape of Good Hope, has, by a long series of observations on the parallax of the star Arcturus, arrived at the conclusion that it moves with the inconceivable velocity of 381 miles a second. that is to say, it would traverse the distance from London to Edinburgh between two ticks of a watch. This is twenty-one times faster than the speed of the earth in its orbit round the sun. Dr. Elkin also finds that Arcturus is so far away from us that his light, traveling 190,000 miles a second, takes 181 years to reach us.