CANADA'S PART IN THE WORLD'S FORESTRY.

OF the Canadian exhibit of lumber at the World's Fair, Mr. F. Howard Annes writes:

"The coolest corner I have been able to find in the White City is the forestry building. Close to the ceaseless lapping of the waves on the shore of Lake Michigan, in the extreme southeastern part of the park, there is always a grateful breeze playing through its piney portals. Beautifully situated, it is one of the most unique and interesting buildings of the World's Fair, both for its style of architecture and the highly attractive exhibit it contains. Rustic in design and detail, the forestry building is probably the most expensive of that particular kind ever erected in America. It cost $100,000. The sides are made of slabs with the bark removed. There is a wide verandah encircling the whole building, the columns of which, supporting the roof, are all of varied tree trunks. They are bunched in groups of three, one of which will be from 16 to 20 inches in diameter, and the other two companions smaller. They are all 25 feet in height and neatly labelled. The dimensions of the building are 528 by 208 feet. Inside are all sorts of wood both in rough and manufactured state from every clime—plain, mountain, sea shore, river bottom, swamp and jungle have all contributed to the display. The central exhibit in the building is a grand pyramid built of specimens of wood from all over the world.

"Verily it is a universal congress of blocks. California's contribution, a cutting 14 feet in diameter of redwood, 475 years old when Columbus landed under the scant shade of the palm trees of San Salvador, forms the base of the pyramid. Around and upon it are grouped ching-chang from Siam, bamboo from Japan, teakwood from India, birchwood from Ontario, and specimens from all other countries. And there is a real sure enough axe in a glass case that figures as a sort of frontispiece to this wonderful wood-grouping in the central exhibit. It is Gladstone's axe, the very axe the Grand Old Man used in cutting out the undergrowth at Harwarden when in training to knock out Salisbury in the political arena. Some of the specimens in the exhibits attract special attention. There is a mammoth redwood plank, 16 feet 5 inches wide, 12 feet 9 inches long, 5 inches thick, cut from a California tree 35 feet in diameter and supposed to be 1,500 years old. A beautiful carved door made of teak wood from British India, is much admired, and a very large birch knot from Peterboro county, Ontario, attracts no end of attention. There are collections of wood from twenty-five of the different states representing numberless varieties of forest growths.

"Sixteen foreign nations and 31 individual exhibitors, domestic and foreign, and among them the province of Ontario, make a very creditable showing and withal a very practical one. The Ontario section is on the main aisle, south of the Dominion court, and occupies a floor space of 1,000 square feet. It is fronted by a Corinthian archway, over which is the sign "Ontario" in gold letters. The whole is surmounted by Canadian flags and emblems. The Ontario exhibit tends to show the splendid forest resources of the province in a manner that arouses the greatest interest, especially amongst the practical lumbermen, builders and cabinet workers. There are 66 exhibits in the log and squared blocks, comprising all the valuable woods such as red pine, spruce, oak, ash, beech, maple, birch, etc. all neatly arranged and relieved at intervals with sample boards, beautifully polished. An attractive feature is a case of polished wood specimens sent by the Hon. A. S. Hardy, commissioner of crown lands, some thirty different kinds of wood being represented. A pyramid of blocks ornamented with carved Indian hunting scenes from D. S. Hill of the Six Nations Indians also attracts much attention. There are particularly fine specimens of black cherry and white pine. Mr. George Harte, of Saltfleet, Ont., is the very efficient and courteous superintendent of this section. Mr. Matthew Goetz, who is here to meet and interest German visitors to the exposition is a valuable acquisition to the staff of the Ontario commission. The other 2,000 feet of space allotted to Canada is divided between Quebec, British Columbia and the Northwest Territories.

"The Dominion has a large collection of photographs of living trees, contributed by the Geological Survey Museum, Ottawa. The photographs are shown in frames made of the wood represented in the picture. Chief Buchanan is said to have expressed the opinion that the exhibit of commercial timber made by Ontario is the best in the building. However that may be, as regards the fir woods, the birch, beech, cherry and other fine hardwoods capable of brilliant polish, cause great admiration. No less than 660 inquiries by letter have already been received as the "first fruits" of this wonderful display of Canadian woods. The value to the Dominion of this advertisement of its forest wealth will presently be appreciated at its true worth."

AN AIR THERMOMETER.

THE air thermometer is the name given to a recent English device for giving warning of a fire. In this apparatus the expansion of air by heat in an air box fitted to the ceiling of the room is made to inflate a thin, hollow India rubber diaphragm. This rises a small terminal rod, bringing it into contact with another terminal, an electric circuit being thus completed, the current ringing an alarm bell and releasing a semaphore, which serves to indicate the location of the outbreak. As thus arranged the apparatus consists of three essential parts, the air box, the pulsator, and the indicator. Heat currents ascending to the ceiling cause the enclosed air in the air box to expand—the force of this expansion being directed to the under side of the India rubber diaphragm of the pulsator—an electrical current is in this way made and the alarm given. The air box and pulsator may be in the same room, or in proximity to each other, but the indicators may be placed in any part of the building or at a remote distance. The sensitiveness of such an apparatus to thermal changes, and the ease with which it can be adjusted over a wide range of temperature, have, it is asserted, been fully determined by numerous experiments.

THE SENSATIONS PRODUCED BY A HEAVY ELECTRICAL CURRENT.

EDISON'S Orange laboratory, despite its pastoral surroundings and the pacific nature of its habitues, has been the scene of some gruesome experiments. When the new law was passed, enlisting electricity as an agent of death, Mr. Edison was consulted as to the best method of applying that mysterious and deadly fluid, and in the experiments made by him to test the comparative action of different currents at various intensities, many painful animal executions were necessary. Mr. Edison's most valuable friend and assistant, Charles Bachelor barely evaded the distinction of officiating as a sacrifice on the altar of experimental science. He was mending some defective apparatus in connection with a lamp, and, as it seemed to him at the time, had taken all imaginary precautions against an accident. He supposes, however, from the presence of a burn afterward found on one of his fingers, that he must unconsciously have established a circuit by holding a wire in each hand. No sooner had he made contact than he staggered back to a stool, with the awful memory of soul and body wrenched violently asunder, with such pangs as the Mohamedan death angels wreak on the awakening spirits of the damned. He describes it as resembling the sensations of an immense rough file thrust through the quivering fibres of the body, a shuddering, rasping pang, grinding its way through lungs and heart. For over fifteen minutes he sat motionless, bathed in an icy and death-like sweat, and nervously unstrung from head to foot. Yet, strange to say, the shock passed away in a day or two, leaving no visible injury except in the memory of the victim.—From "The Life and Inventions of Edison" in Cassier's Magazine for November.

CONDUCTIVITY OF WOOD.

IN some experiments performed by Delarive and De Candolle on prisms of different kinds of wood to ascertain their power of conducting heat, they found that the direction of the fibres materially interfered with their conducting power. Thus it appeared that the obstruction to the passage of caloric was greater when the current was at right angles to the woody fibre than when it flowed longitudinally in the direction of the fibres. This difference also appeared to increase in proportion as the wood was a bad conductor of heat. The conducting powers in the two directions may be represented very nearly by the following numbers: If longitudinally nutwood, oak and fir are each taken as 5, across the fibres they are respectively 3·46, 2·83, and 2·05. Hutchinson found in his researches on the conducting power for heat of building materials, that taking the conducting power of firewood as 100, beechwood was 83·19, and oakwood 134·10. But if the woods were compared with slate as 100, their conducting power would be as follows: Firwood 27·72, oakwood, 37·17, beechwood, 23·06. The cooling power of these woods is another important point, and this is not at all in relation to their conducting power. Thus firwood being 100, the cooling power of oakwood is only 30·38, whilst that of beechwood is 120·2. Compared with slate as 100, the cooling power of the woods are as follows: Oakwood, 55·60, firwood 69·16, beechwood 83.19. Another important point of inquiry with regard to the physical properties of wood, as to its value in building, etc., is its relation to moisture. If the specific gravity of woody fibre is 1·50, we should expect that the less the specific gravity of the wood the greater would be its capacity for moisture, and Hutchinson found, on immersing 500 grains of each of the following woods for nineteen hours in water, that such was the result, for they had gained as follows: Firwood 622·75 grains, oakwood 224·75 grains, beechwood 185·5 grains, Moulmein teak 82.50 grains.

A NEW LATHE ATTACHMENT.

A MOST ingenious lathe attachment has been contrived, adapted to any lathe within a certain limit of size, and with which the lathe can be turned into a pipe threading machine in a few minutes and pipe of any length threaded very rapidly and very correctly. The mechanism consists of a die-carrying head, attached to a spindle like a chuck, an adjustable self-centring vise attached to the carriage, and an adjustable pipe rest attixed to the bed of the lathe to support long lengths of pipe. The latter is held securely by the vise on the carriage and fed to the revolving dies by moving the carriage with the hand, or this can be done automatically by using the lead screw of the lathe set to the number of threads corresponding to the standard of thread to be cut. When the thread is cut to the length required the dies may be opened by turning the face plate, and the pipe be taken out without running back. All the dies are made adjustable to any variation of the fittings, and adjust from one size of pipe to another, so that each set of dies will thread several sizes of pipe without changing. To fit this attachment to any make or size of lathe no machine work is necessary except on the flange.

HIS AUTHORITY FOR IT.

A REVEREND gentleman who has charge of the advertising of a prominent religious weekly was recently asked what scriptural authority he could find for his occupation. "Oh," he replied, "that is easy enough. Advertising not only has scriptural authority, but it is of very respectable antiquity as well. If you will look in Numbers xxiv., 14, you will find Balaam saying 'Come now, and I will advertise,' and Boaz says, in Ruth iv., 4, 'And I thought to advertise.' Advertising is no modern thing."

AN exchange says that the art of paper making has reached the point where it is possible to cut down a growing tree and convert it into paper suitable for printing purposes within the short space of twenty-four hours.

GEORGE W. CHILDS, the veteran newspaper man and editor of the Philadelphia Ledger, was so pleased with the working model of the Michigan logging camp at the World's Fair, that he has purchased it and will remove it to his country home near Philadelphia.