

# CANADIAN PULP MAKING.

A PLANT IN THE ALGOMA DISTRICT, ONTARIO.

BY FRANK C. PERKINS.

At the present time there is great interest in the pulp and paper industry in Canada, where there is available an abundance of water power and an abounding supply of raw material. In the Algoma district of the Province of Ontario, with its vast spruce forests and its extensive water power, many desirable conditions are offered to the manufacturer of pulp and paper.

On account of these advantages a great pulp and paper plant has been established at the little town of Espanola on the Spanish River. This stream, some 200 miles in length, has its source in Lake Biscotasing. It follows a winding course to the shores of the Georgian Bay, many important waterfalls interrupting

its progress, one of the finest of these, as shown in the accompanying illustrations, being in the neighborhood of Espanola, where the plant of the Spanish River Pulp and Paper Company, Ltd., has been located, and from where the pulp is shipped. The present installation has a capacity of 150 tons air-dry weight per day. This pulp mill is equipped with the latest machinery, as indicated in the engravings, and it contains twenty-four grinders, eighteen wet machines, and twelve 450-ton hydraulic presses.

At this Spanish River power plant a head of 62 feet is available, from which 30,000 horse-power can be developed, although only 15,000 horse-power is now being utilized.

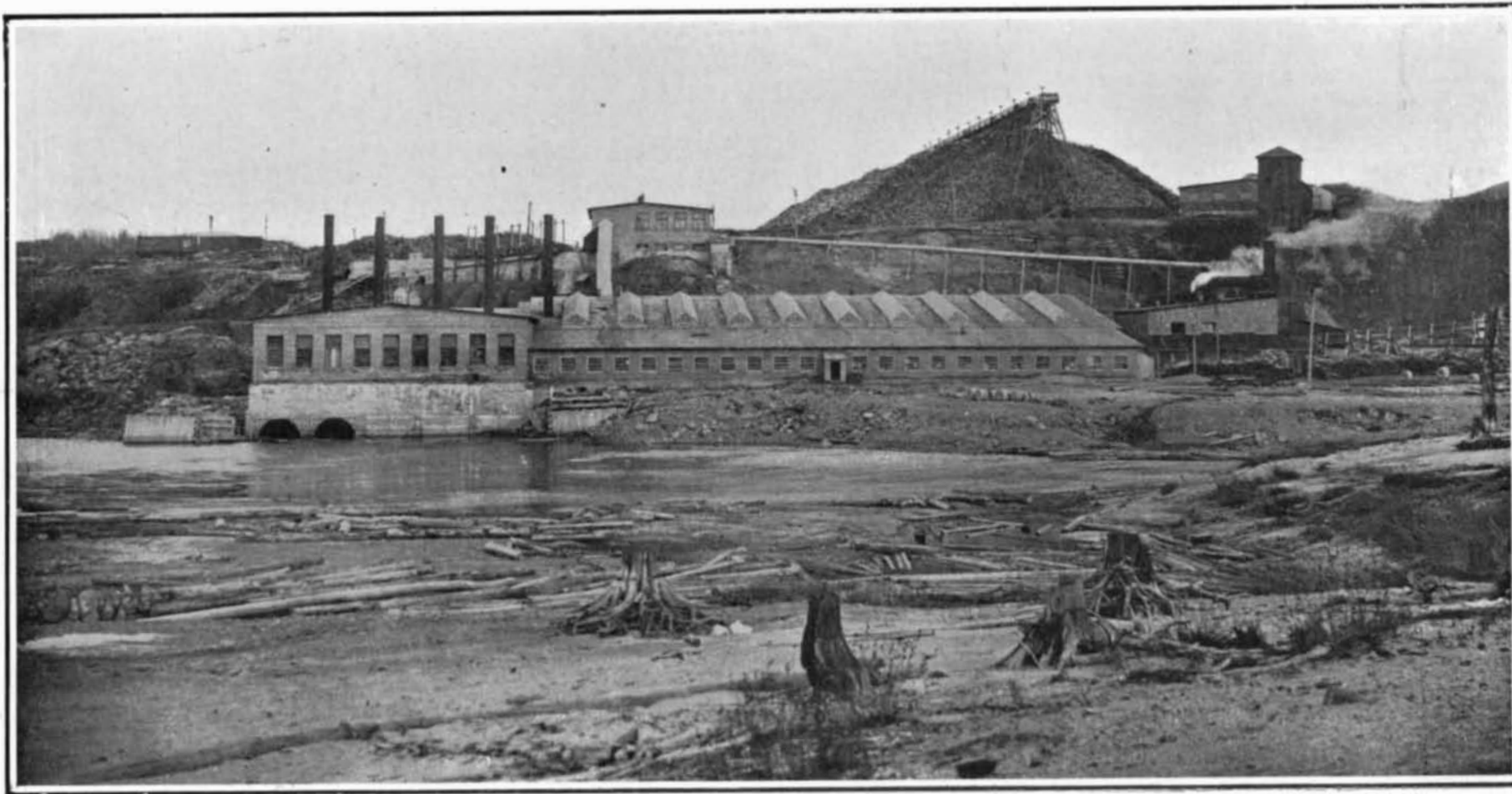
A half a decade ago a number of capitalists, on recognizing the immense possibilities that lay in the establishment of a pulp and paper industry in the Algoma district, secured a concession from the Ontario government and at once proceeded to erect a modern plant at Espanola.

It will thus be seen that this great undertaking is of comparatively recent growth. Success, however, was assured from the outset by reason of the sagacity and foresight of its promoters, who secured timber limits comprising an area of about 5,000 square miles in the territory drained by the Spanish River.

A sufficient supply of raw material was thus provided, and recently during a single season 65,000 cords



30,000 CORDS OF PULP WOOD AT THE SPANISH RIVER PULP MILL.



PULP MILL OF THE SPANISH RIVER PULP AND PAPER COMPANY.  
CANADIAN PULP MAKING.

of wood were cut. The annual output of the Spanish River pulp mills is said to be 50,000 tons, and it finds a ready market in the United States, particularly in Illinois, Indiana, Wisconsin, and Michigan.

It is interesting to note that in 1905 the Canadian paper making establishments employed about 5,000 men, the wages being over \$2,000,000, and the product valued at nearly \$10,000,000, the total investment being about \$21,000,000.

In the wood-pulp establishments, the material provided had a value of nearly \$4,000,000. About \$1,000,000 was paid in salaries to 2,456 employees, while the total investment was about \$11,000,000. It is maintained that the past five years have shown a wonderful increase in the output of the Canadian pulp and paper mills, and that the growth is the result of the heavy demand for the raw material being met through the utilization of the country's vast and available water power.

#### IRISH LINEN AND SOME FEATURES OF ITS PRODUCTION.\*

By SIR WILLIAM CRAWFORD.

THE first use of linen as an article of clothing is veiled in the mists of antiquity. Linen is mentioned in the Book of Genesis as already in use for robing the royal princes of Egypt and throughout the Bible it is very frequently referred to in terms of appreciation, and as a symbol of purity and excellence. But it is needless to refer to history in order to prove the ancient use of linen, for considerable quantities of it are actually preserved for us in Egyptian tombs and acknowledged to be of the respectable age of fifty centuries or so. And this Egyptian linen is made of flax which, examined under the microscope, is quite similar in fiber to the flax we use to-day. I may add that some Egyptian linen is marvelously fine, and so thick in proportion to its fineness that nothing similar has been woven in modern times. But the subject I wish to treat of is modern linen of a single locality, and a few special features of its production.

"Irish linen" is of world-wide fame, and perhaps examination of its manufacture may help to explain why it is so. The moist and mild climate of Ireland

\* Journal of the Royal Society of Arts.

is admirably suited for the growth of flax and for the successful carrying on of every process of its manufacture up to and including that of bleaching. The flax plant has a thin wiry stem of about three feet, branched only toward the top to carry the pretty blue

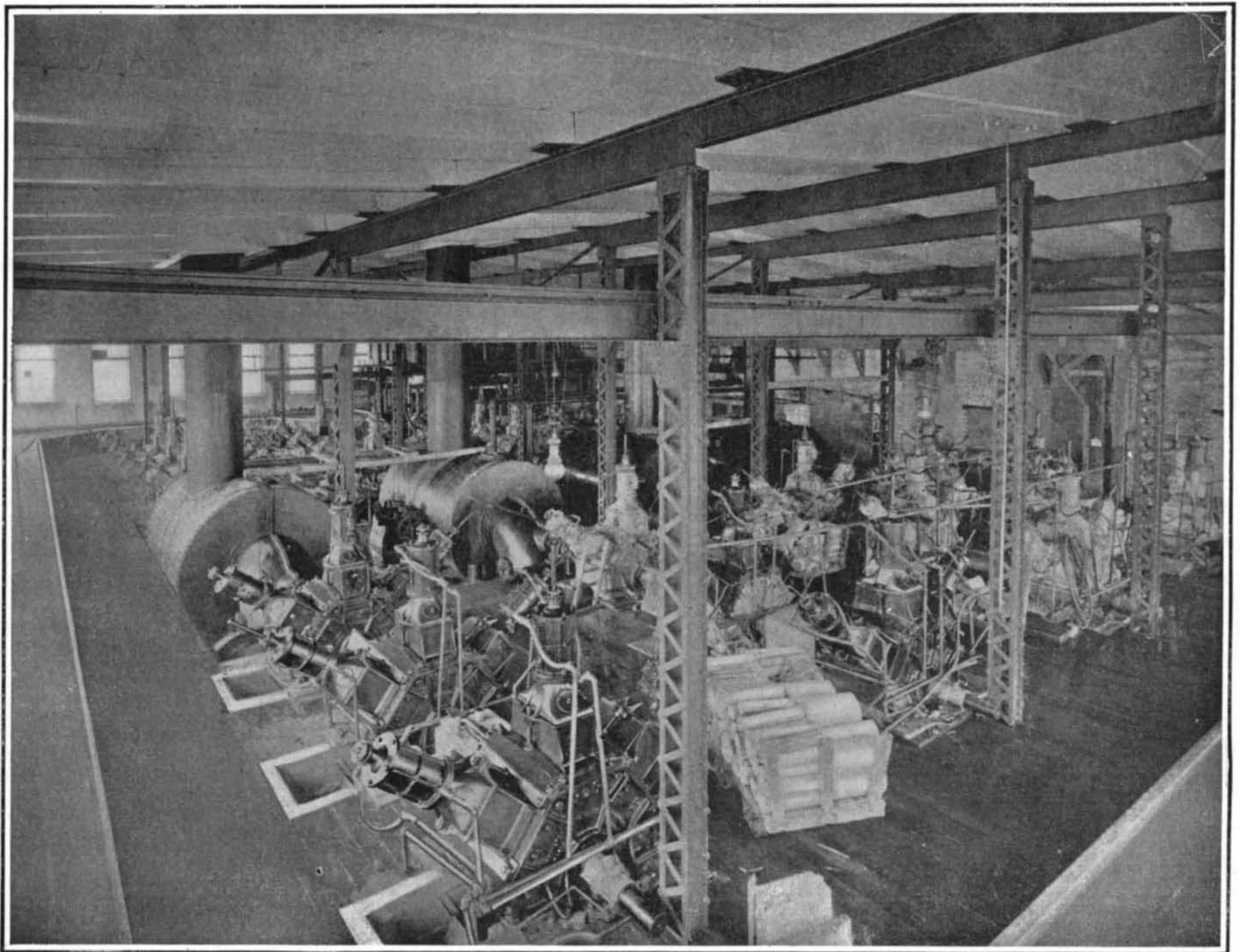
loaded with stones or other heavy material to keep it under water, where retting or fermentation proceeds. The object of retting is to facilitate the separation of the fiber from the skin and woody substance. After ten days or so it is taken from the water, dried,



SPANISH RIVER WATER POWER AT ESPANOLA, ONTARIO, CANADA.

flower and the balled fruit which contains the linseed. The fibers run in strands between the skin of the stem and the woody pith forming the center of the stem. When flax is grown for fiber it is never cut, but is pulled up by the roots soon after the fruit is formed. When pulled at it is at once placed, in sheaves, in three or four feet of water, generally in a slanting position, with the top upward. It is there

and the fiber is separated. To effect this the flax is bruised and scutched, i. e., beaten by revolving blades of wood. The fiber is then taken to the spinning mill. Various flax-producing countries carry out this process with more or less care. Whether flax is to be spun into yarn by hand or by machinery it has to be hackled, that is to say, combed over sharp-pointed pins till the strips of fibers removed from the stalks of the



PULP MACHINERY OF THE SPANISH RIVER MILL AT ESPANOLA, ONTARIO, CANADA.  
CANADIAN PULP MAKING.



# SCIENTIFIC AMERICAN

## SUPPLEMENT. No. 1796

Entered at the Post Office of New York, N. Y., as Second Class Matter.  
Copyright, 1910, by Munn & Co., Inc.

Published weekly by Munn & Co., Inc., at 361 Broadway, New York.

Charles Allen Munn, President, 361 Broadway, New York.  
Frederick Converse Beach, Sec'y and Treas., 361 Broadway, New York.

Scientific American, established 1845.

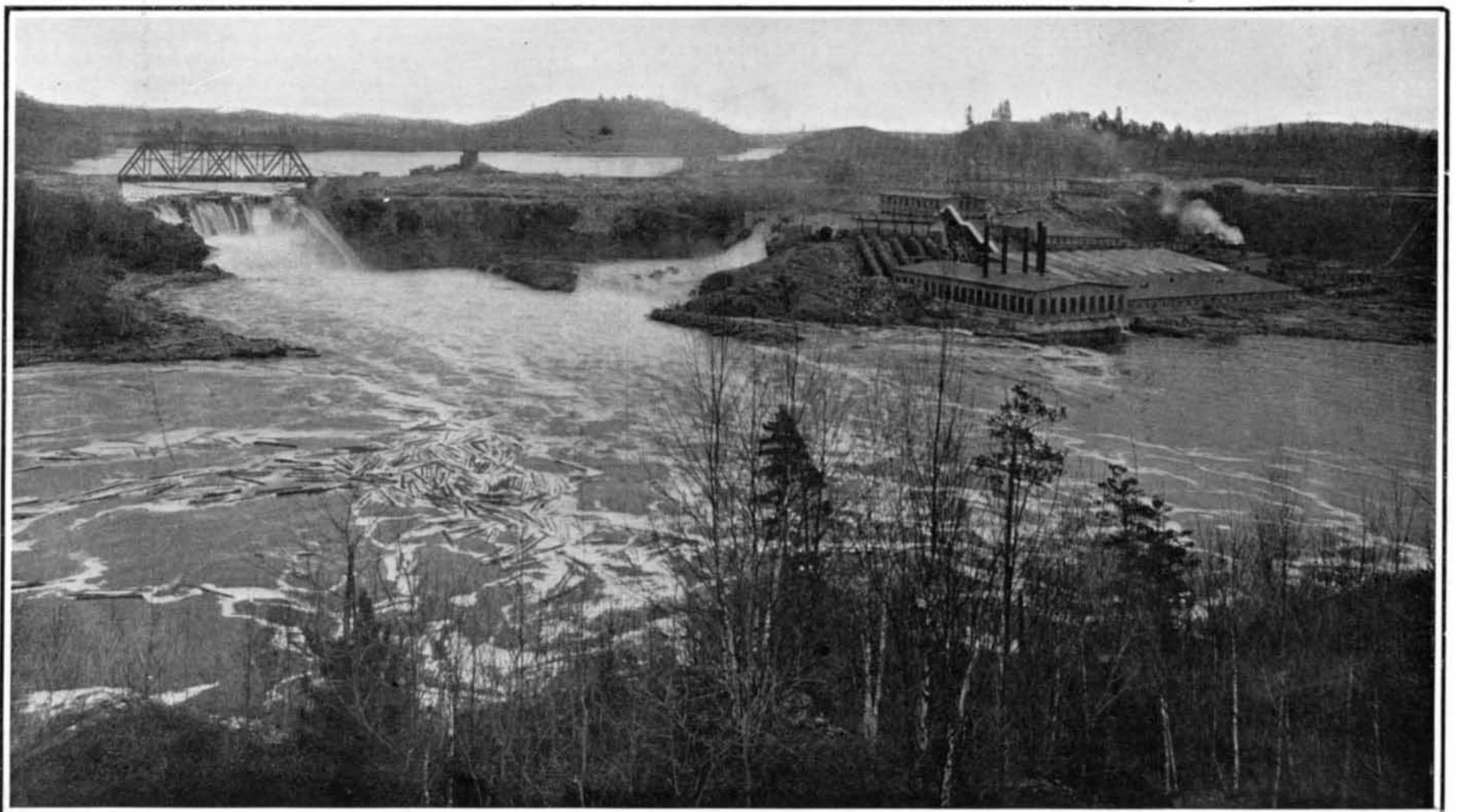
Scientific American Supplement, Vol. LXIX., No. 1796.

NEW YORK, JUNE 4, 1910.

{ Scientific American Supplement, \$5 a year.  
Scientific American and Supplement, \$7 a year.



THE 450-TON HYDRAULIC PRESSES AT SPANISH RIVER PULP MILL.



THE ESPANOLO HYDRAULIC POWER PLANT.

CANADIAN PULP MAKING IN THE ALGOMA DISTRICT ONTARIO.—[SEE PAGE 360.]