

to a force of over 1,000 men. The Canadian Electro-Chemical Company on the Canadian side is the first in the Dominion to manufacture caustic soda and bleaching powder. The development of the nickel mines of New Ontario will be another ultimate result. These mines which are about 120 miles distant from the Sault are now capable of yielding 500 tons of ore per day, all of which will be utilized in the reduction works just constructed. These works will produce daily 250 tons of nickel steel, perfectly adapted to the requirements of armor plate manufacturers. It is claimed also that the process to be introduced at Sault Ste. Marie will so reduce the cost of production of nickel steel as to make it available for shafting and all other similar uses where severe strain is encountered. The company has already secured a contract to supply the Krupp plant in Germany. Then there is the general reduction works intended to reduce to the most perfect purity ores of all kinds and at so low a cost as to make of practical value many ores formerly considered useless. A calcium carbide works will be another feature.

The project for the establishment of the power canal at the Sault was proceeded with so quietly that the work was well under way before the general public learned much if anything regarding the scheme. It is now expected that the canal on the American side will be in operation late in the present year, and those persons most thoroughly conversant believe that the Consolidated Lake Superior Company will not be much behind its rival at Niagara Falls in the development of 100,000 horse power.

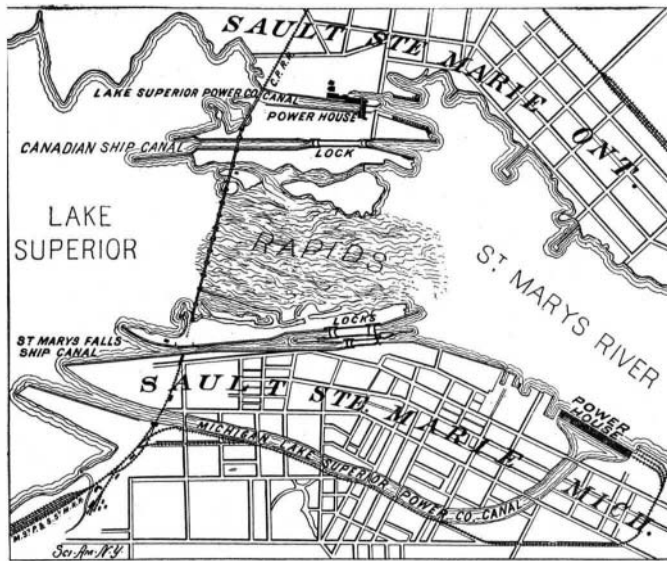
During the early part of the present year the Lake Carriers' Association, comprising in its membership all the principal vessel owners on the great lakes, became aroused lest the power canal project would affect the level of Lake Superior and the ship canal and thus work serious injury to navigation interests on the inland seas. Representatives of the vesselmen's association declared before a committee of the House of Representatives that if the power canal lowered the level of the government ship canal around the rapids at the Sault so much as one inch, it would entail a loss of a million and a quarter dollars to the vessel and iron ore interests every year. Engineering experts have disagreed regarding the influence which the power canal will exert. Just what action will be taken is problematical, but that some legislative limitations will be exacted ultimately seems highly probable. Meanwhile, the excavation of the canal goes actively forward, and upward of fifteen hundred men are engaged in the work.

CURIOSLY CUT YEW TREES.

The yew tree is often called the "melancholy yew," a description which is not altogether unwarranted, having regard to the position it usually occupies. The use of the yew tree in Christmas decorations in England is no new fashion, and several centuries ago the yew was more largely employed in decorations at Easter than at Christmas.

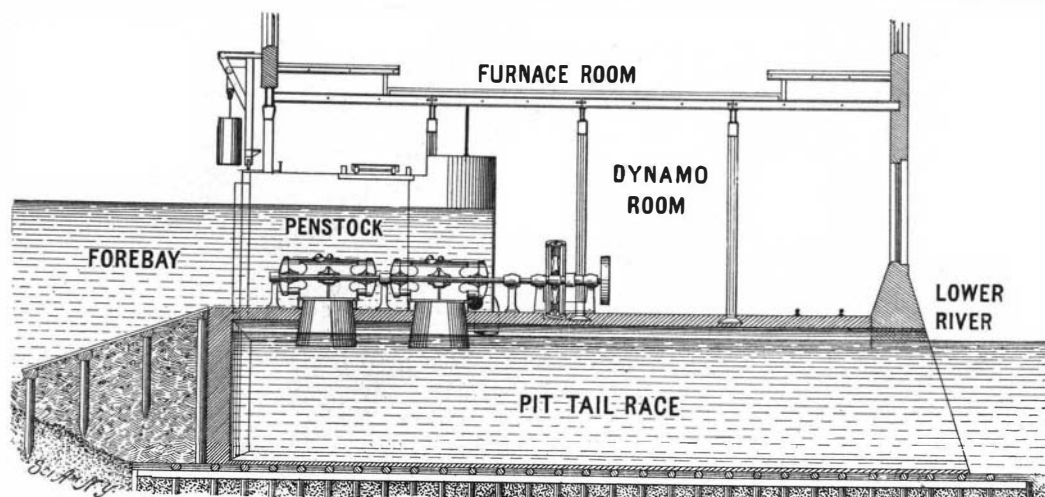
The common yew tree has a wide geographical range.

It is distributed over Great Britain and the Continent of Europe, its range extending from Norway and Sweden to the shores of the Mediterranean. It is also well represented in America and Asia. The remarkable longevity of the yew, coupled with its power to resist adverse influences, has given rise to the opinion that there is hardly any limit to the period of its existence, and the age of the majority of the more famous trees is greatly overestimated; many of the more noteworthy trees are undoubtedly several centuries old. The famous tree at Buckland, Kent, about a mile from Dover, was men-



MAP OF SAULT STE. MARIE, SHOWING RAPIDS AND LOCATION OF POWER PLANTS.

tioned in the Doomsday Book, and is, therefore, of an age exceeding a thousand years. In 1880 it was removed from one part of the churchyard to another, sixty yards distant, and was undoubtedly the oldest tree that has yet been transplanted. The trunk was split by lightning about the middle of the eighteenth century, during a storm which destroyed the



TRANSVERSE SECTION THROUGH POWER HOUSE, SHOWING FOREBAY, TURBINES AND TAIL RACE.

steeple of the church. In consequence of the injury received, the trunk assumed a horizontal position, and in the process of replanting the tree was restored to a comparatively erect position.

Probably the most curious thing connected with yew trees is the way in which they have been cut to resemble some animal or other object. The ones at Bedfont, shown in our engraving, are most interesting. Bedfont lies near London on the high road and is equidistant between Hounslow and Staines. The

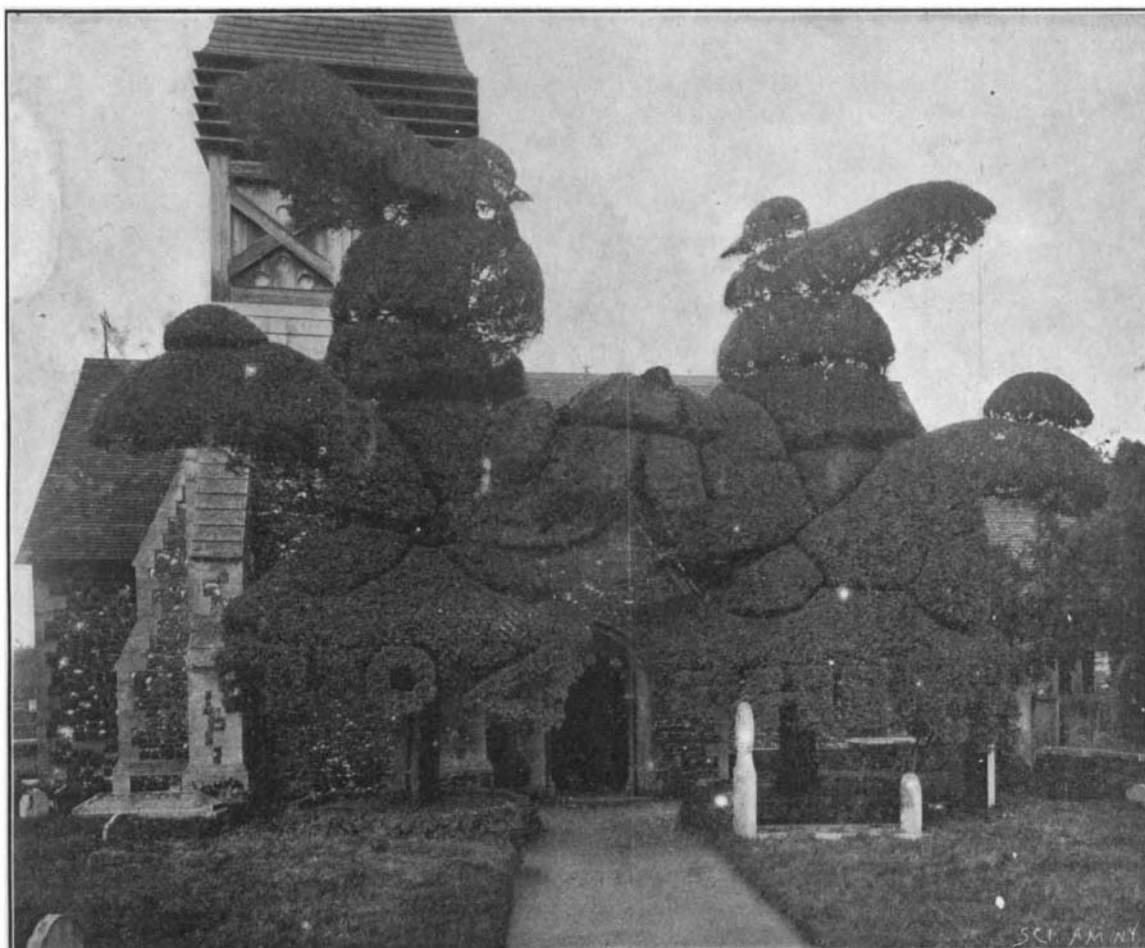
primitive air of the place would hardly lead one to believe that it is within thirteen miles of the great metropolis. The quaintness of its appearance is increased by its little Norman church with its wooden tower and dwarfed steeple and its pair of trim and formal yew trees cut into the shape of peacocks, with the date 1704, and the initials of the church wardens of that time still legible in the cropped foliage. The local tradition is that the peacocks represent satirically two sisters who lived at Bedfont, and who were so very haughty that they both refused the hand of some local magnate, who thus immortalized them as being "as proud as peacocks." This is, however, only a legend and stories of the same kind will be found everywhere in England where there is anything out of the ordinary. The two peacocks have been immortalized by Thomas Hood, who makes them the subject of one of the most serious of his poems. Pope, who must also have seen these quaint artificial ornaments, satirized them in the "Guardian." He gives a list of some fifteen or sixteen subjects cut in evergreens, from Adam and Eve and Noah's Ark down to Queen Elizabeth. Of course, such artificial trimming of the trees is opposed to all rules of good landscape gardening, but they are interesting as curiosities. We are indebted to the courtesy of the editor of The Gardeners' Magazine for obtaining the photograph for us.

Experiments on the Coloring Matters of Plants.

M. Tsvett gives an account to the Academie des Sciences of a series of experiments relating to the coloring matter of plants. When plant leaves are treated with a concentrated aqueous solution of resorcinol, made slightly alkaline by ammonium carbonate, the chloroplasts swell up and agglomerate, and various constituents of the cells are dissolved and liquefied, while the coloring matter collects in large oily drops, which coagulate at once if the resorcinol is washed out by glycerol or water. These green globules are called chloroglobins by the experimenter; they are insoluble in saline solutions, but swell up when treated by carbonate of potassium and other salts, and are altered in character by the former. They are slowly decomposed by dilute acids. Like many of the proteids, the globules absorb and retain color-

ing matters such as methyl blue, magenta, etc. Chloroglobin swells up in solutions of the alkaline hypochlorites and is decolorized, the bleached substance giving indefinite results with the ordinary reactions for proteids. It dissolves in strong alcohol, and if the solution is agitated with benzine a green coloring matter, which is not affected by resorcinol, passes into the latter, and a yellow substance, which is liquefied by resorcinol, remains in the alcohol. In physico-chemical properties, chloroglobins resembles the proteids; its solubility in ether, carbon disulphide, etc., seems to be due to the chromophoric nucleus of the molecule. The chlorophyll and carotin (xanthophyll) are probably loosely associated with the proteid nucleus. Chloroglobin can be obtained in a very pure condition by extracting suitable leaves in strong alcohol, diluting to 20° and collecting the very fine precipitate by filtering through porcelain.

"WHERE the Day Changes" is an interesting article in the current SUPPLEMENT. It deals with the various day lines which have been proposed as the line of demarcation between the American day and the Asiatic day. The position of the day line in the Pacific Ocean differs, according to the various authorities, and they differ from the 180th meridian. The day line is not a straight line, but makes a number of turns at different places. The article contains a map showing positions assigned to day lines by different geographers.



YEW TREES CUT INTO THE SHAPE OF PEACOCKS, AT BEDFONT, ENG.—THE TREES BEAR THE DATE 1704.