

A GREAT SPRUCE TREE.

An Albany, N.Y., despatch says: Senator Chahoon, of Clinton county, has forwarded to the State Fisheries, Game and Forest Commission, at the capital, the stump of the biggest spruce tree ever found in northern New York and probably in the spruce belt, including Maine, New Hampshire, Vermont and Canada. Superintendent of Forests Fox has been on the lookout for years for the tree which should represent the maximum size of the spruce species, and this stump will be kept as filling the bill. The stump was taken from the forest very near the Adirondack Lodge, in the town of North Elba, Essex county, six miles south of Lake Placid. The tree, which was 121 feet 5 inches in height, was cut for pulp wood by the J. & J. Rogers Company. The average height of big spruce trees is only eighty feet in the woods, there not being more than three in a thousand found to be over 100 feet tall. The length of the shaft was 88 feet and the height of the stump is 41 inches. The circumference of the top of the stump is 10 feet, 10½ inches; the longest diameter is 41 inches; the shortest, 36 inches, and the longest radius 24 inches. The rings on the stump indicate that the tree was a very rapid growth, and that it was probably 350 years old. This monarch of the forest stood in a dense growth, on level ground and dry soil, and at an altitude estimated at 2,100 feet. It was surrounded by hard maples, beeches, and yellow birches, the latter being remarkably large trees of their species.

THE U. S. PENSION SCANDALS.

Hon. J. Sterling Morton, in Forum.

Why should the decade from 1880 to 1890 show more than seven hundred millions paid for pensions, when that from 1870 to 1880 shows less than four hundred millions? Have pension laws sometimes been made the means of converting rolls of honor into lists of mere beneficiaries, regardless of services or disabilities, merely to gain or to perpetuate party power? How shall revenues be devised that can automatically adjust themselves to the ever-expanding extravagance of pension laws which add annually to the rolls more than time and death remove? No good citizen objects to pensions for those real soldiers who incurred genuine disabilities in the service or consequent upon the service. But the thousands of men who draw pensions from the Government of the United States, because by sworn testimony they have proved themselves victims of chronic diseases, and at the same time have policies in life insurance companies to which they have solemnly declared themselves free from all chronic maladies, aggregate a stupendous swindle upon citizens who pay taxes and upon those who carry life insurance. Why should not investigation be made and such cases eliminated from the pension rolls? How can any man, without perjuring himself, have a pension because he has a chronic disorder and a life insurance policy because he has not such an affliction? And how many thousands of such cases now stain the pension rolls can only be ascertained by an investigation, which can be carried on easily and inexpensively, in which the Government and life insurance companies shall co-operate. Why not petition Congress to order such an inquiry? Who can be injured by it? Can honorable, truthful, meritorious veterans suffer from such a cleansing of the pension rolls.

MECHANICAL TESTING OF IRON AND STEEL.

From The Railway and Engineering Review.

A meeting was held at Dudley, Eng., recently, in connection with the South Staffordshire Institute of Iron and Steel Works Managers, when Mr. F. W. Burstall, M.A., A.M.I.C.E. (professor of engineering, Mason College, Birmingham,) read a paper on "The Mechanical Testing of Iron and Steel." In the course of his observations, the author pointed out that the first testing machine, which was made for chain cables, in 1812, was capable of pulling 100 tons. The first really good machine was made in 1829 by Mr. Williams, manager of an iron works in South Wales. In 1831, the Admiralty, not willing to trust to chain makers' tests, put down one of their own machines. This was the parent of all English modern testing machines, and all the older machines con-

tained all the essential points of those of modern construction. The maximum length of German machines was thirty feet, and the Targets testing machine in the world was a Watertown Arsenal, in the United States, which was capable of breaking metal under a stress of 750,000 tons. In all English testing machines, accuracy and sensitiveness were sufficient for scientific testing. In the discussion which followed, Mr. T. Ashton said there was a Lloyd's testing machine at Netherton, which would test up to 300 tons, and he should have liked the opinion of Prof. Burstall as to whether it was a reliable and accurate machine or not. Prof. Burstall, replying to the discussion, said transverse tests in foundries were perfectly satisfactory, and there was no excuse for anyone not testing cast iron. He could not give an opinion on the Netherton testing machine, except that the tests there did not often agree with theirs. Some might look upon the testing machine as a kind of natural enemy, but he thought testing had done a great deal to produce a given material, and that it could be produced at a price to pay.

FOR THE MISSISSIPPI LEVEES.

From Leslie's Weekly.

First, heavy barges are swung out from the banks and securely fastened and anchored, to provide safe moorings for the broad, weighted willow and cable mats, which are designed to regulate and deflect a current of water running from two to four miles an hour. To hold these boats and the mattress as it is woven and sunk into the water from the barges a network of thick wire cables is needed, often extending some thousand feet from the barges to the shore. The mattresses are woven on specially designed weaving barges, from willows and underbrush fastened together by means of poles and wires, much after the manner of giant baskets. After the weaving, the mattresses are stiffened by crib work of willow poles, the top cribbing serving as a support for the heavy layer of stones by means of which the mattresses are sunk into their proper place on the river bed, sometimes eighty feet below the surface. Many of these mats are 300 feet in width, and measure more than 1,200 feet in length, covering areas of from four to eight acres. Additional strength is given by a number of wire cables, and by cross cables holding the so-called mats to the shore. After the mattresses have been sunk, the river banks, which had to be graded down to facilitate the work, have to be riveted with layers of stone rip nearly a foot deep to prevent them from washing away with the next flood. Naturally the construction of each of these mats costs thousands of dollars, for the work can only be done during the low-water season.

Sometimes the next flood destroys it all. Sometimes, though left unharmed by the flood, which passes over it, it rots away in its stagnant water; sometimes it actually deflects the swift currents of the water. In that case it lasts some four years, when the strain proves too much, and immediate repairs have to be undertaken to save what has already been accomplished from sure destruction.

GAMBLERS IN COMMERCE.

From Bradstreets.

Developments connected with the failure of a bucket shop that runs upon other establishments of the same kind have served not only to exhibit the extensive ramifications of such swindles, but to direct attention to the skillful way in which bait is laid for the victims. In the instance referred to a system of alleged syndicates or blind pools were formed ostensibly to operate in the grain and stock markets upon a so-called "safe system," with surprising, if mythical, dividends or profits in sight. By this means it would seem that a surprisingly large number of people, especially in smaller cities and towns, have been relieved of their cash. Indeed, it is pointed out, with probable accuracy, that not a little of the disfavor with which what is termed "Wall street" is regarded throughout the country is the result of experiences with bucket shops and so-called syndicates, and the absence of actual knowledge as to what the legitimate stock market really is. The remedy which it has been suggested the Stock Exchange can apply to the evil of bucket-shopping, namely, closely restricting the distribution of quotations, seems manifestly inad-

quate. The concerns which have been under notice this week were so organized that quotations were not necessary for their success. The true remedy would still seem to lie in the enforcement of criminal law and of the powers of the police to break up gambling. Indeed, it is satisfactory to notice that the New York police this week took such steps in regard to one concern of the kind. It may also be mentioned that there were numerous prospective victims of the bucket shops and blind pools who availed themselves of the facilities of The Bradstreet Company for obtaining information concerning them. All such obtained an array of facts as to the methods and antecedents of this class of concerns and their promoters, so that none were deceived. It would seem as if no one was at fault for the losses sustained but the losers, when such opportunities exist for learning the facts as to the credit and standing of business concerns.

MANAGEMENT OF DEPARTMENT STORES IN FRANCE.

From New York Sun.

The great department stores in Paris, such as the Bon Marché, the Louvre, and the Printemps, carry the organization of their employees to a point not dreamed of here, and have in operation extensive and costly plans for stimulating the interest and energy of the help in the business to the highest degree. The new employee receives at the start a salary of 400 francs, or about \$80 a year, besides being lodged and fed, and in addition a commission of from 2 to 5 per cent. upon his sales, so that the lowest salesman rarely makes less than \$160 a year. A head of department or buyer, as he is known here, may easily make from \$2,500 to \$3,000 a year, and some of them exceed \$5,000. While these figures are low compared with the \$10,000 and \$20,000 salaries paid in New York, they seem high when measured by the scale of salaries that prevails in France. Thus the best paid among higher employees receive larger salaries than the presidents of sections in the Council of State and generals of division. The average pay of an experienced salesman is about 4,000 francs, or \$800 a year.

The total number of employees at the Bon Marche and the Louvre is about 3,000 each, among whom are only about 400 women. In the Bon Marche and the Louvre lodging in the buildings provided by the establishment is optional for employees of both sexes less than twenty-one years old; in the Printemps it is obligatory. The Louvre has, on the Avenue Rapp, a great building accommodating 250 male employees, and not far from it another where 100 young girls are lodged. The Bon Marche furnishes similar accommodations. All these establishments are conducted under peculiarly stringent rules. The girls have a parlor, where entertainments are organized on Sundays and certain evenings of the week, but from which the other sex is excluded utterly. Not even a father or a brother may be received there. All the employees receive their meals in the stores, except the highest; and these are permitted to eat outside, and receive an allowance of 800 francs a year in the way of rations. Furthermore, married employees are allowed to dine at home, and receive a commutation of one franc a day.

—A Russian engineer, Col. Micklachevski, has invented a new signalling lantern for use at sea by which signals have been read at a distance of 34 nautical miles. With the help of reflecting lanterns it is expected that a distance of upward of 50 miles will be covered. The Baltic squadron has tried it with complete success in their manoeuvres. The lantern is compact and small, weighing seven pounds, and costs 100 rubles. It is worked by means of a certain spirit with two powders, one green and the other red, which are of secret composition. There are two tubes, at the end of each of which is a pear-shaped ball, and by exerting pressure upon these brilliant red and green flashes are produced at will.

—A lady stepped into a bicycle emporium the other day and asked one of the salesmen to tell her the best way to clean the chain of her bicycle. "Just wash it with coal oil," said he. "I had thought of that," the lady retorted, "but I fear to use coal oil because there might be danger of the chain catching fire when I scorch." Then she went out.