

## PINE NEEDLES INDUSTRY IN OREGON.

BY ENOS BROWN.

The utilization of the pine needles of the yellow Oregon pine, botanically *Pinus Ponderosa*, is becoming an industry of considerable importance on the Pacific coast. Fifty years ago it was discovered that the extracts and products of the long, slender leaves of the pine possessed real efficacy in complaints of a pulmonary character. It is claimed that insomnia yields to the influence of the pungent odor, and asthmatics have found a real relief in partaking of the oil and in sleeping upon pillows stuffed with the elastic and fragrant fiber manufactured from the interior substance of the pine leaves. The illimitable forests of yellow pine abounding in the State of Oregon, with their accessibility to through lines of transportation, suggested to a German from the forests of Turingia the transfer of a lucrative business to the Pacific coast. In Germany the leaves never exceed two inches in length, while in Oregon they often exceed thirty inches, and average twenty. In the former country the forest laws are extremely strict and often prohibitive, obliging the maker of the product to use the dried leaves that have fallen to the ground and thus insuring an inferior and less effective quality of goods. In the Western State denuding the yellow pine of its leaves has been encouraged, the expert of the Forestry Commission having pronounced the process as beneficial. A tally kept of the weight gathered from a certain number of trees indicated that the crop taken in April weighed 650 pounds while that of the same trees in October yielded 775 pounds. Two crops are gathered yearly, the later one being always the largest. The leaves of the young trees are preferred, yielding a better quality of oil, it is said; though this fact is doubted. The leaves are stripped from the trees by women and men, who are hired for the purpose, and who are paid 25 cents a hundred pounds for the needles. Five hundred pounds is regarded as an average day's work. The leaves are picked into sacks and hurriedly sent to the factory. Exposure to the sun causes the leaves to wilt, and impairs the quality of the product. In picking, the thickest bunches of leaves are selected, and the scanty ones neglected. The vast quantity available, so far beyond any present demand, permits the picker to thus discriminate. The factory at which the essences and extracts of the needles are manufactured has a capacity for handling 2,000 pounds of leaves per day; but it is soon to be enlarged to about four times its present size.

In the extraction of pine oil, 2,000 pounds of green leaves are required to produce ten pounds of oil. The process is the ordinary one of distillation. In the manufacture of fiber the leaves pass through a process of steaming, washing, drying, etc., twelve in all, occupying four days. Two qualities are produced, first and second. The first, from which no oil has been distilled, is worth, upon the market, about ten cents per pound. The fiber is elastic, and the staple only little shorter than the green leaf from which it was made, and with strength sufficient to enable it to be spun and woven into fabrics. Mixed with hair, the fiber makes an excellent material for mattresses or pillows, and repose comes quickly when resting upon them. It is also used as a partial filling for cigars, imparting a flavor not the least disagreeable, and calming to the nerves. The oil extracted gives an agreeable flavor to candies. Toilet soaps are made, strongly impregnated with essential oil of pine needles.

The fiber itself, after curing, looks like a slender shaving of some dark wood, retaining its odor indefinitely. Insects abhor it on that account. It is said that the Oregon factory is the only one in the world outside of Germany.

Mr. Quin, the borough electrical engineer of Blackpool, England, has perfected an invention by which all dangers from overhead electric wires are obviated. When a wire breaks, the current is switched off by a switch which is automatically released, and the wire thus rendered harmless. In the experiments which were carried out to prove the efficiency of the invention, three telephone wires were severed and fell upon an overhead electric wire. Instantly the automatic switch operated, and the inventor picked up one end of the broken wire.

## The Age of Mammon.

Money-making is the axis around which the world's activities revolve. This is nothing new, adds Collier's Weekly, but probably it was never so true as it is to-day. On every side we see evidences that the world is in a sort of fever of acquisition. Wealth-getting has become a passion. The public press is filled with gossip about the great money-makers and their methods. Enormously rich men are held up as



PLANT FOR DISTILLING OIL FROM PINE NEEDLES.

models. The acquisition of wealth is set before our eyes every day and every hour as an example of success. The Pierpont Morgans, the Henry C. Fricks, the Schwabs, Carnegies, and Hills are the modern ideals of our youth. Nor is this all. Science and art are becoming more and more the mere hand-maidens of industrialism. Our greatest scientific men are devoting their energies, not to pure science, not to their noble profession in its abstract or elementary form, but to those applications of it which result in some new economy of the world's work and in the formation of more immense stock companies, with bonds and common and preferred shares, dividends, and all the paraphernalia of modern financial operations on a big scale. The men who love science for science's



STRIPPING THE PINE NEEDLES FROM THE TREES.

sake are giving way to the Edisons, Teslas, Triplers, Pupins, Marconis, those wizards who by day and by night seek to wrest from nature some new and commercially profitable service to mankind. The number of patents taken out at Washington steadily increases, notwithstanding the predictions made not long ago that American inventiveness had reached its high tide. This is the age of materialism and of mammon, sure enough.

## ALCOHOL AS FUEL FOR MOTOR CARRIAGES.

The champions of the alcohol motor scored another triumph in the Paris-Roubaix races, held on the 7th and 8th of April. The route passed through Pontoise, Beauvais, Amiens, Arras, to Roubaix, or a total distance of 167 miles. The competitors were divided into two parties; the first of these started from Paris and made the trip in two stages, with a stop at Amiens (89 miles), while the second party covered the whole distance in a single stage. The machines were divided into six classes, from quadricycles and voiturettes up to the heavy machines. The first party started from Paris on the 8th, commencing at 9 o'clock, from the Automobile Club building, on the Place de la Concorde, where a great crowd had assembled. The commission, including Messrs. Jeantaud and Forestier, gaged the reservoirs and took samples of the alcohol for analysis. The liquid was divided into three classes, pure alcohol, carbureted alcohol containing 75 per cent of alcohol, and carbureted alcohol at 50 per cent. The 50 per cent alcohol was used for the most part. On the first day there were 29 starters in the different classes. A similar start was made the next morning by the single-trip party (22 starters). The supply of alcohol could be renewed at Amiens, if necessary, and this was checked by a second commission. The following list gives an idea of the time and some of the best figures for consumption of alcohol: Class A, quadricycles, average weight 770 pounds—Osmond (De Dion machine), time 5h. 54m., consumption 5.85 gallons (50 per cent alcohol); Cousin (Werner machine), time 11h. 20m., consumption 2.73 gallons (50 per cent); Cormier (De Dion), 14h. 46m., consumption 1.89 gallons (50 per cent). Class C, Voiturettes, average weight 1,200 pounds—Theodore (Darracq machine), time 7h. 55m., alcohol (50 per cent), 4.68 gallons; Declercq (Renault machine), time 20h. 53m., alcohol (75 per cent), 5.93 gallons.

Class D, light vehicles, average weight 1,450 pounds—Uhlmann (Decauville machine), time 6h. 38m., alcohol (75 per cent), 16.79 gallons; E. Brierre (Brierre), time 10h. 9m., alcohol (50 per cent), 7.85 gallons; Perez (Begot & Cail), time 12h. 8m., alcohol (pure), 8.57 gallons. Class E, vehicles, average weight 2,000 pounds—Girardot (Panhard & Levassor), time 7h. 12m., alcohol (50 per cent), 8.06 gallons; Manechal (Brouhot), time 10h. 25m., alcohol (50 per cent), 8.97 gallons; Le Blond (Gillet & Forest), time 12h. 40m., alcohol (pure), 10.01 gallons. Class F, heavy vehicles, average weight 2,800 pounds—Aristide (Panhard & Levassor), time 7h. 7m., alcohol (50 per cent), 8.25 gallons; Loysel (Bollée), time 7h. 45m., alcohol (50 per cent), 12.60 gallons. Class G, Industrial vehicles—

Rost (Bardon machine, weight 3,170 pounds), time 15h. 33m., alcohol (pure), 12.74 gallons; Letellier (Richard machine, 4,830 pounds), time 16h. 24m., alcohol (75 per cent), 18.20 gallons. The weights given include the load carried by the machine. In spite of the bad condition of the roads, 48 of the 51 starters were able to finish the trip. The results obtained in the contest give an interesting series of data on the performance of the alcohol motor. The motor tests which are shortly to be made by the Automobile Club will throw additional light upon the subject. The performance of the Bardon, Gillet-Forest, Peugeot and Begot-Cail machines shows that pure alcohol may be used with success; the greater number of competitors used 50 per cent alcohol, however, and this seems to be in favor at present.

## German Prize for Cooling Beer.

Consul-General Guenther, of Frankfort, March 21, 1901, informs the State Department that the German Brewers' Association has offered a first prize of \$375 and a second prize of \$125 for the best mixture for cooling beer. The composition must not be injurious to health nor cost more than 6d.

(12 cents) for a cooling capacity

equal to that of 100 pounds of ice, and must maintain the beer at a temperature of 45 deg. to 47 deg. F. Formulas should be sent to Mr. Johann G. Heinrich, Neue Zeil No. 68, Frankfort, Germany.

President Loubet and two of his Ministers made a trip in the "Gustave Zede" submarine boat at Toulon. They remained in the boat for an hour and a half, which moved along the surface and below the water.