SCIENCE.

FRIDAY, MAY 29, 1885.

THE MONTEREY PINE AND CYPRESS.

BOTANISTS and tree-lovers have a special interest in Cupressus macrocarpa and Pinus insignis, on account of their very restricted native habitat, and for their value as ornamental trees. The first, the Monterey cypress, is known in the wild state only on the oceanic edge of that notable coniferous grove which extends for a few miles between the Bay of Monterey and the narrow inlet of Carmel; excepting, however, a few trees similarly situated, it is said, near Pescadero, farther north. The large cypress-trees of the Monterey grove, most picturesque in character and in position, are only a dozen or two in number. They are confined to the rocky and wind-beaten headland of the immediate shore. In view of their precarious position, it was gratifying to find, at certain points, that a goodly number of thrifty young trees were successfully competing with the pines for a short distance inland. Yet, hemmed in between the slowly encroaching ocean on one hand, and the forest of pines on the other, the future of this unique habitat is certainly precarious. Its companion, Pinus insignis, seems capable of holding its ground if left to nature. Besides this grove, in which it predominates, the tree naturally occurs here and there for some distance, perhaps on all the hills around Monterey Bay. The oldest and finest specimens I have seen of it are on the eastern side of the little town, accompanied by equally noble live-oaks (Quercus agrifolia), and forming that natural park — now adorned by the landscape-gardener's best art, and kept quite in the finish of an English nobleman's ancestral home — in which stands the noted Hotel del Monte.

It is no part of my object to commend the South Pacific railroad company for the establishment of this attractive resort. Its projectors will doubtless have their reward; but, considering the lavish outlay, one would think that a pecuniary return will be a long time in coming. But I do wish to commend them for an incidental service to botany and dendrology in rendering this habitat of the Monterey pine and cypress reasonably secure. With large and liberal foresight, this company bought the whole grove of Point Pinos and vicinity, supplied it with water from Carmel River, and also with about eighteen miles of drives, around the picturesque bluffs, among the hoary cypresses, and through the beautiful forest in various directions, making of the whole a park appertaining to the hotel, and watchfully caring for its preservation. The grove, fortunately, all belonged to one man, who inherited it: so that its acquisition was practicable, as it certainly was timely; for the trees would probably have been very soon cut away for lumber and firewood, and the ground cut up into building-lots.

Lamentable as the destruction of this grove would have been, yet these two trees would not be lost to California. They are extensively planted everywhere near the coast, especially in the southern part of the state, where they thrive wonderfully and grow rapidly, in situations that no other coniferous trees could well abide. At Monterey and at San Francisco the Monterey pine is most successfully used, in the manner of Pinus maritima in France, for the conversion of sand-dunes into forest. At Monterey many hundreds of trees, taken from the nursery at a foot or two in height, were growing healthfully when planted upon a sea-beach of drifting sand, hardly beyond the reach of winter's spray. At San Francisco this tree has played a conspicuous part in the conversion of a broad tract of shifting sand, which used to flow over into the town, into a beautiful park, already well furnished with trees and shrubs in great variety, as well as with grassy slopes and lawns, — the just pride of the city. Step by step this verdure and

welcome shelter is extending over the remaining sand-hills toward the ocean. The pine is preceded, first by the sand reed-grass (Ammophila), then by the wild lupines, especially by the two shrubby species of the place, — the yellow-flowered Lupinus arboreus, and the silvery-leaved and blue-flowered L. Chamissonis, — which in spring-time are as ornamental as they are useful.

These grounds were most wisely as well as beautifully laid out, the favorable natural configuration of the ground preserved and accentuated, the ample driveways led along easy curves around tree-plantations so placed as to afford very needful shelter from the sea-wind which gives an inclement character to a San Francisco summer. I was sorry to see, that, under a new administration of this park, these good points were not appreciated as they had been, perhaps because they are not apprehended. For changes by no means the better were in progress: the avenues were being widened and straightened to a certain extent, and shelter cut away, seemingly with the object of letting in the harsh west wind, or of facilitating fast driving. Neither of these results could be really desirable.

Although these two handsome trees, the Monterey pine and the Monterey cypress, are wholly unadaptable to the Atlantic United States, as may be said of almost every Californian conifer, it is pleasant to know that they grow fairly well in the warmer parts of England, where they are highly prized. Still the main hope of their perpetuity has respect to their native soil.

There is still another coniferous tree on the Californian coast of equally limited range and precarious destiny; namely, Pinus Torreyana of Parry. According to Dr. Parry (*West-American scientist*, i. 37), this tree "is confined to a coast-line of not more than four miles, and extending scarcely a mile inland," just below San Diego. Dr. Parry makes the timely suggestion that this precious bit of ground should be preserved by the town of San Diego, within the corporate limits of which it lies.

A. Gray.

LETTERS TO THE EDITOR.

A novel snow-slide.

On April 22 and 23 occurred the heaviest snow-fall known at this place. There was but little wind. The temperature was so mild that the flakes were slightly moist as they fell, and hence adhered firmly together. The snow was quite porous at first, but rapidly settled, and became somewhat compact. On tinned roofs and on steep shingled roofs, snow-slides of the common sort were frequent; but, on shingled roofs of moderate slope, I noticed that the snow was slowly moving downwards somewhat like a glacier. The thickness of the snow after settling was about ten inches; and its rate of motion downward varied from one inch to two feet per hour, according to situation. At the eaves it bent downward like a plastic mass, and hung in broad sheets in the air until breaking by its own weight. I have often seen the same thing, but never on so large a scale. In one case, on the north side of a building, the snow-sheet retained the curve which it took as it passed the edge of the roof. It thus bent inward so as to nearly touch the building four feet below the cornice. Measured along the curve, the suspended portion was about five and a half feet long, which certainly shows considerable tenacity of the snow-sheet, considering that it had fallen within thirty-six hours, and that the temperature was such that there was a constant drip of water from the edge of the snow. It should be noted, that, at the last, the whole mass — both the suspended portion and that on the roof — went down in a body, with no breaks anywhere. G. H. Stone.

Colorado Springs, April 25.

A parasitic leech.

In the summer of 1877, at Fort Bridger, Wyoming, while partaking of the hospitality of my friend Dr. J. Van A. Carter, a Shoshone Indian brought to the house a fish to be served for the table. It was caught in the neighboring stream, Black's Fork of Green River, and was known in the locality as the 'Hela' (Gila?), or whitefish. I made it out to be the so-called Colorado pike, Ptychochilus lucius. It was upwards of two feet in length. My attention was directed to it by Dr. Carter, who informed me that the fish was liable to be infested with leeches in the mouth. On examining the specimen, I detected a dozen leeches suspended to the sides of the tongue by their terminal sucker. On disturbance, they became very lively, clinging tightly to their position, alternately elongating and shortening, and projecting and retracting, the head extremity in the usual manner of their allies. They appeared of a translucent blackish hue, with eight longitudinal, equidistant, raw-sienna colored stripes. In the contracted state they were from an inch to an inch and a quarter long by less than half an inch broad, elliptical, and with the head extremity rather abruptly narrowed and more or less prolonged. Elongated, they were up to two and a half inches by about one-third of an inch at the broadest part, and, as represented in the accompanying figure, which is of the natural size, were variably cylindro-clavate, thickest behind, and tapering forward, and more or less constricted at different points. The caudal sucker, by which the leech tightly adhered to its position, was of the usual circular form and proportions. After removing the tongue of the fish, and laying it in a dish of water, in the course of an hour the leeches voluntarily detached themselves, and moved about, or clung to the bottom of the dish. The integument is smooth,