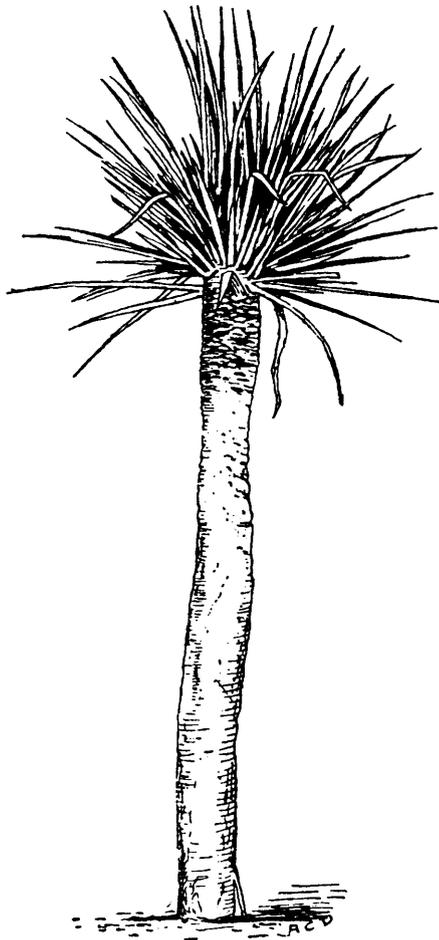


serve the old dead trunk, but without success, and now not a vestige of it remains on the spot where it stood. The proprietor of the ground, however, had raised some seedlings from the old tree, and one of these, an infant of some twenty years, serves to mark the site of its venerable predecessor.

Many pictures of the tree are in existence, but with a single exception they are caricatures such as give no true idea of its habit and appearance. I have not seen the picture given in the "Atlas Pittoresque" of Baron Humboldt, but it is said to be so singularly incorrect as to represent an elm rather than a dragon-tree. His sketch, it seems, was not taken on the spot, but was copied from a drawing by M. Marchais, and



DRAWING OF A YOUNG DRAGON-TREE AT KEW.

that from an un-satisfactory sketch by M. Ozon, which is still preserved in the hydrographical department of France, and each stage of copying seems to have been attended by a further departure from the truth. Fortunately, before the final catastrophe took place, the tree was visited by Professor C. Piazzi Smyth, Astronomer Royal for Scotland, who not only wrote an interesting and accurate account of it in his charming book about Tenerife, but earned the gratitude of all botanists by taking its photograph. It is through his courtesy that a drawing of this unique sun-picture of the oldest tree ever known is included among the illustrations to this article. The tree was certainly in luck, for in the early days of photography it was hardly to be expected that the observant eye of the camera would be opened in so remote a place.

"Sixty feet high above the ground at its southern foot," says the Professor, "forty-eight and a half in circumference at its base, 35.6 at six feet above, and 23.8 at 14.5 feet above, or the place where the branches spring out from the rapidly narrowing conical trunk—this *Dracæna* cannot compare with the real monarchs of the forest for size." High up on the Sierra Nevada of California, in the county of Calaveras, there is a grove of *Wellingtonias* (*Sequoia gigantea*), four of which are over 300 feet in height, and our Australian colonies can show still more enormous individuals among the gum trees. But these monarchs of the forest, mighty as are their dimensions, are centuries younger than the dragon-tree of Orotava. In short, it was its wonderful vitality and its no less eminent slowness of growth rather than its pre-eminent size that made this dragon-tree the wonder of the vegetable world.

"Let us take note," says Professor Piazzi Smyth, "of its characteristics. First, the immense uprearing of long naked root-like branches, and the pyramidal outline of the trunk. The leafage makes no very sensible appearance; there is the typical tuft at the end of each branch or rather stem; but the miniature palm-trees have been growing for ages without bifurcation, extending only in length, nothing in breadth. At the point of junction of two or more a thickening of the lower branch begins, and occasionally may be seen one or two withered radicles hanging loose, for they have failed to enter the bark, and work their way down to the ground."

When the stem of a young oak-tree is sawn across, the interior is seen to consist of a number of concentric rings and it is well-known that the number of these rings indicates the age of the tree in years, for a new ring of wood is formed every year outside the old ones. Hence it was found possible to estimate accurately the age of the mammoth *Sequoias* of Calaveras; for shortly after the discovery of the grove one of the largest trees, the "father of the forest," was cut down, and a clean section made through the trunk at the height of forty feet from the ground. The number of rings, on being carefully counted by experts, was found to amount to 1,255, and to this number we must add about fifty for the time occupied by the plant in reaching the height of forty feet. The age of the tree was therefore somewhere about 1,300 years. But if the trunk of a young *Dracæna* be sawn across, the interior will be found to present an entirely different appearance. No concentric rings will be observed, but a uniform woody or fleshy substance, diversified (like the end of a piece of cane) by numerous little dots. For flowering plants are divided into two classes, formerly distinguished by the names *Exogens* and *Endogens*, or "outward growers" and "inward growers." These names were given because it was known that the growth of *Exogens* was caused by the formation of layers or rings of new wood *outside* the old wood; and it was supposed that the growth of *Endogens* was due to the formation of new wood in the *middle* of the trunk. This latter view has turned out to be not quite accurate, and it is now the fashion to call the two classes *Monocotyledons* and *Dicotyledons* (hard words, but necessary) instead of *Endogens* and *Exogens*. The oak and all other British trees belong to the latter; the former, to which the *Dracæna* and the palm-trees belong, has no larger British representative than the Butcher's Broom.

Now when the little dots with which the cross-section of the stem of an endogen is speckled are examined under the microscope, each of them is found to consist of a bundle of minute fibres encased in a sheath. The bundle runs up through the trunk like the wick through a wax-candle; and just as the wick of the candle terminates in the flame, so the bundle of fibres terminates in a leaf. The purpose of the