smooth and unwrinkled, with a somewhat rigid and coriaceous texture, and with undivided or entire margins. "These characters," observes Mr. Bunbury, " belong to the laurel-type, and indicate a certain analogy between the ancient vegetable remains and the modern forests of Madeira, in which laurels and other evergreens abound, with glossy cori aceous and entire-edged leaves, while below them there is an undergrowth of ferns and other plants."

The lignite above mentioned and the leaf-bed occur at the height of 1000 feet above the level of the sea, and are overlaid by superimposed basalts and scorix, 1100 feet thick, implying the existence of an ancient terrestrial vegetation long before a large part of Madeira had been built up. The nature of the tuffs accompanying the lignite, together with some agglomerates in the vicinity, entitles us to presume that near this spot a series of eruptions ouce broke out. Nor is it improbable that there may have been here the crater of some lateral cone in which the lignite and leaf-bed accumulated; for, although craters aro remarkably rare in Madeira, when we consider how considerable is the number of perfect cones, yet on the mountain called Lagoa, $2 \frac{1}{2}$ miles west of Machico, a crater as perfect as that of Astroni near Naples may be seen.

At the bottom of this circular cavity (fig. 654), which is about 150 feet deep, is a plain about 500 feet in diameter, having a pond in the middle, towards which the plain slopes gently from all sides. Such ponds are often seen in the interior of extinct craters. Except in the middle it is shallow, and supports aquatic plants. Many leaves must also be blown into it from the surrounding heights when high winds prevail, so that a mass of peaty matter convertible into lignite may collect here.

Fig. 654.


Crater of Lanoa, $2 \ell$ milles west of Machico, Madeira
In this cut, taken from a sketch of my own, the depth of the crater many appenr too great, unless it is borne in mind that there are no trees visible, and most of the bushes are of the Madeira whortleberry (Vacciniun Madeirense) five or six feet high. Immediately behind the foreground an artificinl mound is seen thrown up as a fence.

Had streams of lava descending from greater heights entered this Lagoa crater, they would have formed denso masses of compact rock

