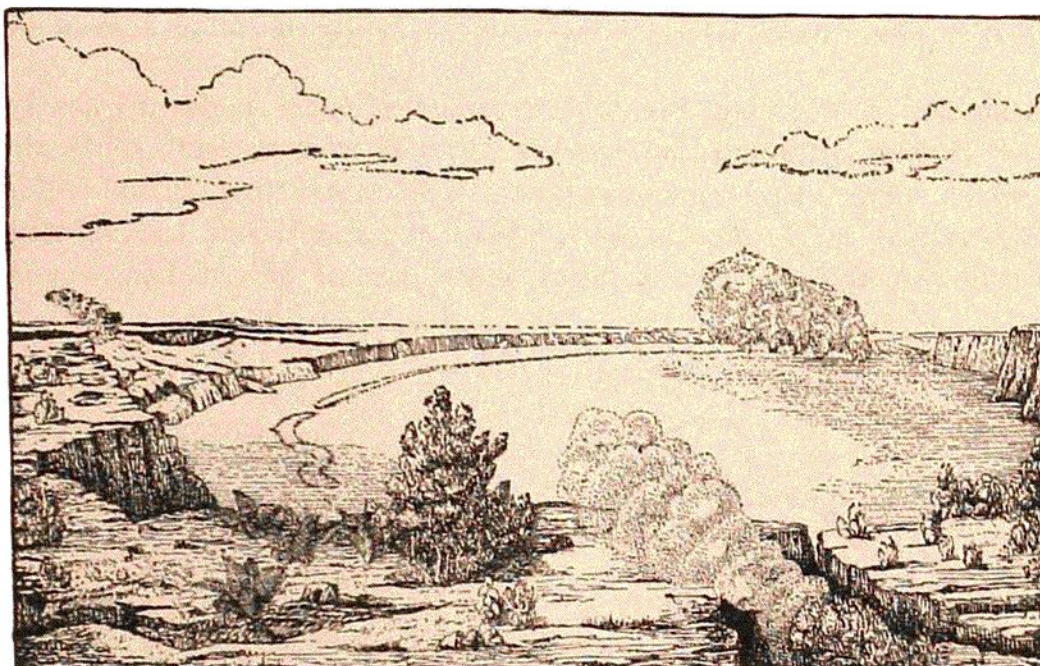


extinct. Fig. 228 represents a nearly north-and-south section of the island through Mount Loa and Mount Kea. The slopes of Mount Loa are 5° to 8° , except over its broad nearly flat summit; of Mount Kea, 5° to 10° ; and the eastern slopes of Kilauea, only 3° . The map of Hawaii shows also, by the dark-dotted areas, the courses of its great lava-streams since 1840.

Figs. 229 and 230 are maps, on a scale of 9000 feet to the inch, of the crater at the summit of Mount Loa (Fig. 229) and that of Kilauea (Fig. 230), after an eruption in 1886.

Fig. 232 is an excellent view of the crater of Kilauea as it appeared in 1864, taken from the north side. It differs little from that of recent years, except in the low ridge over the bottom toward its left side.

232.



Kilauea, from the north, just west of the Volcano House. Perry.

Maui (Fig. 160), the island just northeast of Hawaii, affords, in its eastern half, another good example of a lava-cone; its height is 10,032 feet, and the crater, called Haleakala, is 2500 feet deep.

Cinders, or the material of high projectile discharges, form *cinder-cones* (Fig. 233), having slopes commonly of 35° to 40° , but made somewhat lower after their formation, through the winds, rains, and surface earth-slipping. They have narrow summits and craters.

If the cinders are wet by heavy rains, or otherwise, so as to flow like mud, the cone formed has a broad top, a saucer-like crater, and slopes generally of 15° to 25° , and is a *tufa-cone*. The sides may spread out below at a very small angle. Figs. 234 and 235 are tufa-cones. They show the

233.



Assumption Island, Northern Ladrões.
D. '41.