

## Up Under the Equator

BY JOHN THOMAS HOWELL

IT was not until years after I had stood on the highest point of Indefatigable Island in the Galápagos Archipelago that a fellow Sierran exclaimed, "Why, you made a first ascent!" Yes, I had to admit, I was party to a first ascent and a notable one; but, as my mind went back to that day in 1932, I was hesitant to accept the honor of a first ascent, that distinction so sought after by mountaineers. For, as botanist on the Templeton Crocker Expedition of the California Academy of Sciences, had I not leisurely and with a minimum of physical effort literally botanized my way to the 2300-foot summit of Indefatigable Island along a route opened for Crocker and the rest of his party? Moreover, during the course of the expedition we never spoke of *ascending* the volcano in the center of Indefatigable, always we *penetrated* Indefatigable. The problem was not one of delicate mountaineering technique, and certainly, at so low an elevation less than a degree below the Equator, it wasn't a question of skill on ice or snow; it was a matter of perseverance and endurance in traversing the thorny scrub of desert lowlands, in climbing through tangled jungles of upland rain forests, and in crossing the rough and uncertain terrain on the side of a great volcano.

It was a problem of penetration. Others had attempted it and had failed: the early explorers, the California Academy of Sciences Expedition in 1905-06, William Beebe in 1923, and Vincent Astor in 1930. The terrain, the cactus thickets, the rain forest, or the upland brush, singly or combined, presented obstacles that had been unsurmountable. Until Indefatigable was penetrated in 1932, little had been known of the middle of the island; maps showed a mammoth volcano which rose gradually and symmetrically on all sides from the nearly circular shoreline of the island. Rumor had it that in the crater was a lake that discharged great floods of water upon the desert lowlands in times of exceptionally heavy rainfall. Actual conditions were found to be quite different. After ten years, as I look back on the Templeton Crocker Expedition, I regard the penetration of Indefatigable Island—the ascent of Mount Crocker—the most important single accomplishment of the expedition.

On May 1, 1932, after sailing for two weeks among the southern

islands in the Galápagos Archipelago, the *Zaca* anchored in the picturesque harbor of Academy Bay on the south side of Indefatigable Island. To the southwest, bold lava escarpments rose about fifty feet from the tropic-blue water of the bay or from dense thickets of dark green mangroves, and the mesalike skyline was crowned by a most extraordinary cactus forest with trees twenty to thirty feet tall. To the east, giant swells that rolled northward under the constant pressure of the southeast trade winds broke in a magnificent and booming surf on steep white beaches and jagged fingers of black lava. The innermost reaches of the bay extended to the west and north, where there was a small group of buildings belonging to Ecuadorian and Scandinavian fishermen; and beyond and above all rose the great central mountain of the island.

Immediately after our arrival, Crocker formulated plans for the trip to the top of the island, and he engaged an Icelander named Finsen to prospect a route through the forests and upland brush. One great advantage that we had was a trail about three and a half miles long which traversed the very rough terrain and thorn thickets of the lowlands and extended from Academy Bay inland to a plantation known as Fortuna, in the wet zone of the island. And beyond Fortuna we were again in luck. A stream course, which rose high up on the island and which was usually impossible to follow because of junglelike tangles that choked it, had been swept clear of obstacles by phenomenally high water earlier in the season; it lay an open route through the dense masses of underbrush of the forest belt. Beyond the head of the stream a trail had to be opened across a broad zone of shrubs which was dominated by a single kind belonging to the tropical genus *Miconia*. Because of the important bits of good fortune, it was just a week after our arrival at Academy Bay that Finsen reported to Crocker that he had prospected a route that would lead to the unknown heart of Indefatigable.

The next day we were up and off. Students of plant geography have remarked on the suddenness and completeness with which plant formations change in that borderland between the wet and dry tropics, and in our journey to the top of Indefatigable Island, this was strikingly exemplified. In a climb of about 2300 feet, in a distance of about ten miles, we passed through four belts of vegetation types as definite and as different as the life zones with which we are acquainted in our California mountains. Even at the head

of Academy Bay, the extreme type of cactus desert, which was characteristic of the harbor headlands, began to show features of vegetation transitional to the rain-forest jungle in the increase of mosses, ferns, vines, and undergrowth, although the fabulous cactus trees of *Cereus* and *Opuntia* still dominated the scene with their fantastic forms. The country was rough, with rocky parapets and great tumbled lava blocks, and we gained some idea of its treacherous character by a trailside crevasse in the lava that was so deep that a rock fell silently for three or four seconds. As we went along, moisture-loving vegetation replaced that of the desert. At an elevation as low as 350 feet we were in a tropical rain forest. Large trees were clothed with ferns and mosses, festooned with vines and large woody creepers, dense thickets of ferns and shrubs flourished in deep rich soil under the trees. Somewhat higher in a forest clearing, was the plantation, Fortuna. Here, we passed the night.

The following morning, May 9, we were up at daybreak and off for the top of the island. We followed the dry rocky bed of the providential stream through the midst of the jungle, and along its course we saw great piles of water-washed brush. Not long before, a great torrent must have swept down the mountain. Progress was not difficult, along gravel beds or from stone to stone, or now and again over low cataracts and falls, at only one of which a rope was used. Gradually the trees became lower and more scattered, and at about 900 feet a few individuals of the shrub *Miconia* appeared. Three hundred feet higher the *Miconia* was the only woody shrub and, together with giant brakes and low tree ferns, it covered all slopes and ridges with a dense, uniform, monotonous thicket about seven to ten feet tall. As we went along, the loose detritus which had covered the streambed farther down gave way to solid rock where pools of clear fresh water collected in hollows connected by tiny trickles; small rock gardens of flowers and ferns grew in moist crevices. Gradually the streambed became more confined; shortly we left it to use a trail Finsen had cut through the *Miconia*.

Then the vegetative scene changed again. Above 1500 feet, the *Miconia* gradually became less frequent and shorter, and above 1700 feet, where it was reduced to a height of only three feet, it was entirely replaced by several kinds of ferns which were about three feet tall and which became the dominant vegetative form. In low wet places where water seeped, sedges were common, and on steep

wet slopes *Sphagnum* formed broad mossy patches of bright yellow-green and a peculiar fluffy lichen (*Dictyonema*) produced queer mounds of grayish white. The long slender stems of three kinds of club moss (*Lycopodium*) crept along the ground under the ferns or clambered upward through the fronds. This general type of vegetation, different from anything I had ever seen before, covered everything and continued to the summit of the island.

The morning had been cloudy with intermittent showers, and in the early afternoon, when we reached the uppermost part of the island, a mantle of drifting fog concealed the highest ridges. By middle afternoon, however, when the mists rose and broke and the sun shone for a short time, we discovered we were on the floor of what was once an immense crater. The original crater rim was broken by recent volcanic activity and it was much wasted by weathering. The highest of the rim fragments, which was situated at the northeastern end of the crater, was about 300 feet above the mounds and flats of the crater floor and was the highest point of the island. Indefatigable had finally been penetrated and we began the ascent to the actual summit.

As we climbed the rim splinter that now bears the name Mount Crocker, the ever-widening panorama was stimulating and the general topography of the center of the island gradually became apparent. Beyond the confines of what was once the crater were numerous other cones and craters. The smaller ones near by were obviously more recent and parasitic upon the old cone, but some to the west were apparently independent, and these, together with the crater we were ascending, seemed to form a transverse east-west axis across the central highest part of the island. Far beyond stretches of indigo sea other islands became visible, and practically the entire coastline of Indefatigable Island, with all its coves and promontories, could be seen. While the grotesque cactus groves of the desert lowlands could scarcely be distinguished, the rain forests below the *Miconia* belt were clearly visible, and the remarkable fern formation crowning the island was everywhere about us. Surely here, where no one had ever been before, was a botanist's paradise. So alluring were the plants I could scarcely keep up with the rest of the party. But eventually, with plant press in one hand and specimens in the other, I arrived on top, and, in traditional manner, added my name to the record of a first ascent.