

Biography of David Nelson, and an Account of His Botanizing in Hawaii¹

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IN THE FOLLOWING ARTICLE the writer presents the names and descriptions of the plants that David Nelson collected in Hawaii in 1779 that are still new species. Since he was the first botanist to set foot on the Hawaiian Islands and to collect plant specimens, it seems proper here to tell about his life.

David Nelson (d. 1789) was of humble origin, and at present it has proven impossible to find the place and date of his birth and the names of his parents. No portrait of him has been published, and a prolonged search by the author in London in 1974 failed to find any sort of a portrait of him.

Captain James Cook was readying the two ships, and enlisting the crew for his third voyage around the world to explore the Pacific and Arctic oceans. Failing to find an established botanist willing to make the voyage on the second ship, Sir Joseph Banks asked old James Lee of the Vineyard Nurseries, Hammersmith, if he could recommend anyone. Ten weeks before the sailing date, on 25 April 1776, James Lee sent to Banks the following letter, hand-delivered by a young man. It has been published by Lemmon (1968: 79), and it read:

HONOURED SIR,

I have sent you the bearer, David Nelson, as a proper person for the purpose you told me of; he knows the general runn of our collections and plants about London, understands something of botany, but does not pretend to have much knowledge in it. I have inquired personally into his character and find him exactly suited for the purpose of a collector.

I have enjoined him to secrecy whither you make a bargain with him or not. One thing he desires me to mention, which is he will want a little advance money to rigg him out. I am dear Sir with the greatest regard your obedient, humble servant,

James Lee.

Lemmon continues: "It is apparent Nelson was taken on at sight, given an advance and put on the Kew pay-roll to spend the remaining weeks, before sailing[,] with Aiton and Banks, learning the proper care of plants and seeds on long voyages and being exhaustively briefed by Banks on what to look for in the many differing climes and countries the expedition was expected to sail to."

"He was mustered supernumerary crew on board *Discovery*, of 300 tons, sister ship to Cook's *Resolution*, under Captain Clerke, and made ready to sail from Plymouth in July. In his new 'rigg' David Nelson, very much of a greenhorn, a quiet, unassuming garden-hand, must have found both his shipboard accommodation and his new companions a strange, frightening contrast to the peaceful, unremarkable daily routine of Kew Gardens."

On the other ship, the *Resolution*,³ under Captain Cook, was William Anderson, surgeon's mate and naturalist, an older man.

The two ships sailed from Plymouth, and their itinerary included Capetown, Kerguelen Island, Tasmania, New Zealand, Tonga, Tahiti, Eimeo (= Moorea), Huahine, Borabora, Christmas Island, Atooi (= Kauai), Nootka, Unalaska, Bering Strait, Arctic Ocean, Hawaii, Kamchatka, Macao, Capetown. They returned to Woolwich, England, on 6 October 1780, after a voyage of 4 years, 3 months, and 2 days.

The next 7 years Nelson spent working as a gardener at the King's palace at Kew. Then he was appointed botanist on Captain William Bligh's voyage to introduce breadfruit from Tahiti to the British West Indies. He was given all available space on the ship for his 800 pots, water casks, etc., and was in a position of authority. He also had an assistant, William Brown, like him a gardener from Kew. The *Bounty* sailed from Spithead on 23 December 1787. After stopping at Tenerife, the ship bucked wind and storm for a month, trying un-

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successfully to round Cape Horn, then turned with the wind and sailed past Africa to Tasmania, and made landfall at Tahiti on 26 October 1788. As a result of 23 weeks of work, the crew loaded on the *Bounty* pots with 1005 breadfruit trees, and, in addition, several other food or ornamental plants. They sailed for home from Tahiti on 4 April 1789, but on 28 April there was a violent and successful mutiny. Captain Bligh, Nelson, and 17 others were forced into the small boat, cast adrift without arms, and with but a meager supply of food and water. Bligh navigated an epic voyage of 3518 miles to Timor. Since this story is well known, it will not be detailed here. On 12 July, after 3 months in their overcrowded small boat, they landed at Koepang, Timor, where the Portuguese received them kindly, nursed them, fed them, and clothed them. After a few days Nelson asked and was given permission to walk about the country in search of plants. Though still weak from starvation and privation, Nelson tramped on the mountains for a day. He caught cold, fell sick, and died of "inflammatory fever." Thus, all his efforts on the *Bounty* voyage came to naught.

There are descriptions and estimates of Nelson himself. Anderson, surgeon's mate of the *Resolution*, wrote to Sir Joseph Banks (Beaglehole 1967: 1519-1520): "I am happy to find there is a person in her [the *Discovery*] who understands botany, as he will be able to procure you every new article in that branch, a task which I have not vanity enough to suppose myself equal to: but shall nevertheless continue to collect whatever presents itself, lest any accident should happen either to him or the ship. We carried him with us to the country but unluckily at this time few plants are in flower: yet when such things offer I think his diligence will let few escape."

On 23 November his commanding officer, Captain Clerke, wrote from Capetown to Banks (Beaglehole 1967: 1518): "Your Man Nelson is one of the quietest fellows in Nature, he seems very attentive and I hope will answer your purpose very well. . . he has made a trip up the Country here with Gore who is very well . . ."

An excursion attempting the ascent of Mouna Roa (= Mauna Loa) gave Nelson his only landing on the island of Hawaii. Although

the *Discovery* was anchored for a month in the bay of Kealakekua, Nelson was kept on the ship. By far the longest relation of the life and work of Nelson is that by Lemmon. In this work (1968: 89) is the following account:

Now in the green and tropical island, where Cook was received as a king, an opportunity soon came for the gardener to carry on with his work. In any case, the ship was hardly anything but a floating brothel, with native women swarming all over it, being kept on board by the crew, so that he was relieved when several of the officers decided to explore the interior of Hawaii and ascend to the top of the snow-covered peak which had intrigued everyone since first seeing the island—a tropical island with a snow-covered mountain seemed slightly ridiculous, so the party set out to probe its secrets. On 26th January Nelson and four officers set out to scale the peak, but after two nights and two days of dangerous and fatiguing travel in "a savage country" they were obliged at last to return without being able to satisfy their curiosity. . . . On the way they were insulted by the rabble who, without offering any violence to their persons, would make faces, twist their mouths and use the same contemptuous gestures with which it was their custom in war to provoke their enemies.

When they returned to the ship on the 29th Nelson at least had not had an unprofitable journey, for he had collected "a curious assortment of indigenous plants and some natural curiosities."

This account is partly factual, partly a version supplied by Lemmon. The version that several officers decided to climb the mountain, and that Nelson and four officers set out, seems imaginary. It is recorded in Samwell's journal, reprinted by Beaglehole (1967: 513-514), that "This Party consisted of the Resolutions Gunner, Mr Vancouver, a young gentleman of the *Discovery*, Mr Nelson sent out by Mr Banks to botanize; the Corporal we had on shore, & three other men, they carried no arms of any kind, & set out at $\frac{1}{2}$ past 3 this Afternoon with 4 of the Natives" [26 January 1779].

Nelson left no journal of the expedition, but there is one by a member of the party, John Ledyard. He was a most unlikely member of the crew of Captain Cook's voyage, but served as a corporal of the marines. He was a Yankee, born in Connecticut in 1750, matriculated at Dartmouth College to be a missionary to the Indians, but left after 4 months, to travel and explore wild lands. He sailed to England and the Mediterranean, then to England where he enlisted in the marines, and persuaded Captain Cook to sign him on as corporal, and serve on

Cook's third voyage. After that he declined to fight against the Americans in the American Revolution, deserted, and made his way back home. In New York and Philadelphia he tried to persuade American ship owners to send trading vessels to northwest North America. Then, secretly backed by Thomas Jefferson, Ledyard set out single-handed to capture northwest North America from the Russians. From Finland he entered Russia, and alone crossed Russia and Siberia to Okhotsk, almost to Kamchatka, but there the Russians became suspicious of him, arrested him, and carried him back as a prisoner across Siberia and Russia, and pushed him over the Finland border. Then, to explore central Africa for the British, he went to Egypt, where he died in Cairo in November 1788.

Ledyard was the one who proposed the climb of the mountain "Mouna Roa" on Hawaii, not several officers as surmised in the account by Lemmon. Corporal Ledyard, with a detachment of marines, was guarding the tents of the shore party on the beach of Kealakekua Bay. Day after day he looked up the long slopes and studied the big mountain and longed to climb it. He sat down, wrote a note to Captain Cook, proposing the expedition. Cook read the note, thought the idea a good one, ordered the trip made, and included Ledyard in the party. Ledyard was lucky that it was Captain Cook, for any other British naval captain would have had him punished for insubordination—lashed to the mast, and flogged till his back was a mass of bloody pulp.

The exploring party consisted of midshipman George Vancouver, gunner Robert Anderson, botanist David Nelson, marine corporal John Ledyard, three sailors, and four Hawaiians (Samwell, reprinted by Beaglehole [1967: 513–514]). The only detailed account of the trip is that found in [Sparks] (1834: 127–132), as follows:

While affairs were in this train, Ledyard formed the design of ascending the high peak, which rises from the centre of the island, and is called by the natives *Mouna Roa*. Although this mountain stands on an island only ninety miles in diameter, yet it is one of the highest in the world. Its elevation has been estimated to be about eighteen thousand feet, and its summit is usually covered with snow. From his station at the tents, Ledyard sent a note on board the *Resolution* to Captain Cook, asking

permission to make this jaunt, for the double purpose of exploring the interior, and, if possible climbing to the top of the mountain. The request was granted. The botanist, and the gunner of the *Resolution*, were deputed by the commander to accompany him. Natives were also engaged to carry the baggage, and serve as guides through the woods. A tropical sun was then pouring its rays on them at the bay of Kearakekua, but the snows visible on the peak of Mouna Roa warned them to provide additional clothing, and guard against the effects of a sudden transition from heat to cold. The party at length set off. On first leaving the town their route lay through enclosed plantations of sweet potatoes, with a soil of lava, tilled in some places with difficulty. Now and then a patch of sugar-cane was seen in a moist place. Next came the open plantations, consisting chiefly of bread-fruit trees, and the land began to ascend more abruptly.

"We continued up the ascent," he [Ledyard] writes, "to the distance of a mile and a half further, and found the land thick covered with wild fern, among which our botanist found a new species. It was now near sunset, and being upon the skirts of these woods, that so remarkably surrounded this island, at a uniform distance of four or five miles from the shore, we concluded to halt, especially as there was a hut hard by, that would afford us a better retreat during the night, than what we might expect if we proceeded. When we reached the hut, we found it inhabited by an elderly man, his wife, and daughter, the emblem of innocent, uninstructed beauty. They were somewhat discomposed at our appearance and equipment, and would have left their house through fear, had not the Indians, who accompanied us, persuaded them otherwise, and at last reconciled them to us. We sat down together before the door, and from the height of the situation we had a complete retrospective view of our route, of the town, of part of the bay, and one of our ships, besides an extensive prospect on the ocean, and a distant view of three of the neighbouring islands.

"As we had proposed remaining at this hut through the night, and were willing to preserve what provisions we had already dressed, we purchased a little pig, and had him dressed by our host, who finding his account in his visitants, bestirred himself and soon had it ready. After supper we had some of our brandy diluted with the mountain water, and we had so long been confined to the poor brackish water at the bay below, that it was a kind of nectar to us. As soon as the sun was set, we found a considerable difference in the state of the air. At night a heavy dew fell, and we felt it very chilly, and had recourse to our blankets, notwithstanding we were in the hut. The next morning, when we came to enter the woods, we found there had been a heavy rain though none of it had approached us, notwithstanding we were within two hundred yards of the skirts of the forest. And it seemed to be a matter of fact, both from the information of the natives and our own observations, that neither the rains nor the dews descended lower than where the woods terminated, unless at the equinoxes or some periodical conjuncture, by which means the space between the woods and the shore is rendered warm, and fit for the purposes of culture, and the vegetation of tropical productions. We traversed these woods by a compass,

keeping a direct course for the peak, and was so happy the first day as to find a foot path that tended nearly our due course, by which means we travelled by estimation about fifteen miles, and though it would have been no extraordinary march had circumstances been different, yet, as we found them, we thought it a very great one; for it was not only excessively miry and rough, but the way was mostly an ascent, and we had been unused to walking, and especially to carrying such loads as we had. Our Indian companions were much more fatigued than we were, though they had nothing to carry, and, what displeased us very much, would not carry anything. Our botanical researches delayed us somewhat. The sun had not set when we halted, yet meeting with a situation that pleased us, and not being limited as to time, we spent the remaining part of the day as humour dictated, some in botanizing, and those who had fowling-pieces, with them in shooting. For my part, I could not but think the present appearance of our encampment claimed a part of our attention, and therefore set about some alterations and amendments. It was the trunk of a tree, that had fallen by the side of the path, and lay with one end transversely over another tree, that had fallen before in an opposite direction; and as it measured twenty-two feet in circumference, and lay four feet from the ground, it afforded very good shelter except at the sides, which defect I supplied by large pieces of bark, and a good quantity of boughs, which rendered it very commodious. We slept through the night under it much better than we had done the preceding, notwithstanding there was a heavy dew, and the air cold.

"The next morning we set out in good spirits, hoping that day to reach the snowy peak; but we had not gone a mile, before the path, that had hitherto so much facilitated our progress, began not only to take a direction southward of west, but had been so little frequented as to be almost effaced. In this situation we consulted our Indian convoy, but to no purpose. We then advised among ourselves, and at length concluded to proceed by the nearest route without any beaten track, and went in this manner about four miles further, finding the way even more steep and rough, than we had yet experienced, but above all impeded by such impenetrable thickets, as rendered it impossible for us to proceed any further. We therefore abandoned our design, and returning in our own track, reached the retreat we had improved the last night, having been the whole day in walking only about ten miles, and we had been very assiduous too. We found the country here, as well as at the seashore, universally overspread with lava, and also saw several subterranean excavations, that had every appearance of past eruption and fire. Our botanist to-day met with great success, and we had also shot a number of fine birds of the liveliest and most variegated plumage, that any of us had ever met with, but we heard no melody among them. Except these we saw no other kind of birds but the screech-owl; neither did we see any kind of quadruped, but we caught several curious insects. The woods here are thick and luxuriant, the largest trees being nearly thirty feet in the girth, and these with the shrubbery underneath, and the whole intersected with vines, render it very umbrageous.

"The next day, about two in the afternoon, we cleared

the woods by our old route, and by six o'clock reached the tents, having penetrated about twenty-four miles, and, we supposed, within eleven of the peak. Our Indians were extremely fatigued, though they had no baggage."

This journal by Ledyard gives a good account of their itinerary and experiences. He recorded that on the 1st day our botanist found a new species of fern, and on the 3rd day met with great success. Actually, aside from the few widespread indigenous plants found in the lowlands, nearly every plant that Nelson gathered was at that time unknown and new to science. In the 200 years since then, the majority of the plants collected by Nelson have been gathered by others, and described and named by other botanists.

The explorers estimated the distance to the peak as 34 miles, and that they covered 24 miles of the distance. They traversed the arid lowlands, and penetrated the rain forest, but did not emerge from it. This rain forest developed because of the almost daily convection cloud that in the early afternoon drops mist or rain on a transverse belt part way up the leeward slope. That same rain belt and its forest exists today. The lower edge has certainly been modified by the invasion of coffee plantations, and by grazing. The upper border is doubtless now nearly as it was in 1779 since the meteorological basis for the convection cloud and its rain belt remains unchanged. Above Kealakekua the upper border of the forest belt is at about 7500 feet altitude. The lower margin is now somewhat above 1000 feet. The forest is thinner and of smaller trees near each border. Its middle part is a humid rain forest or jungle. Since the explorers at their high point were still in a dense jungle, it is evident that they reached a point at about 5500 feet altitude, which would mean that they hiked about one-fourth of the way to the mountain summit. Their estimated penetration was 24 miles, and two-thirds of the way to the top. Trail distances are often overestimated, and Ledyard's certainly was, since they did not press on beyond the dense rain forest.

Captain Cook with his two ships left Kealakekua, and sailed north, but ran into stormy weather. It damaged the ships, so he put back to the same bay in Hawaii. There, when acting as a peacemaker, he met his tragic death.

The plant collections made by Nelson on

Hawaii arrived safely in London, and were delivered to Sir Joseph Banks. He, having founded the Natural History Museum, placed the specimens there. They were in part studied by Dr. Daniel Solander, who soon died. Then the others were examined by Robert Brown, and they were mostly recognized as new species or genera by one or the other of those two botanists. Shortly after, Brown died. None of the new Hawaiian species were published. The specimens were filed under the manuscript names. A very few were studied and named by more recent botanists, but the others remained as first identified, in the British Museum (Natural History) in London. Most of them, during the last 2 centuries, have been subsequently collected by other botanists, and named, and published. A decade or so of Nelson's plants are still unique, not having been found by other collectors, and are doubtless now extinct species. The following article describes these.

The genus *Nelsonia* (*Acanthaceae*) was named for David Nelson by Robert Brown. The two Hawaiian species, *Solanum Nelsoni* Dunal (*Sol-*

anaceae), and *Stenogyne Nelsoni* Benth. (*Labiatae*), and the variety *Rumex giganteus* Ait. f., var. *Nelsonii* Deg. & Deg. (*Polygonaceae*), were also named in his honor.

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