

The Flea in Early Hawaii

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While preparing a monograph of fleas of the Hawaiian Islands, we found information of historical interest that was of little direct significance to that work.¹ The present paper is principally an annotated chronology of miscellaneous reports concerning fleas in Hawaii before 1900, but it also presents, as well as the facts permit, the identity and some ecological considerations of fleas in Hawaiian culture. The author of a similar paper on the flea in California has explained that references to fleas in early literature are strewn unsystematically and require considerable searching to uncover them, and this has been our experience.² The most valuable basic source was Illingworth's review of eighteenth and nineteenth century writings on insects in the Hawaiian Islands. He recorded that fleas were mentioned in works of Kotzebue, Byron, Malo, Jarves, Cheever, and Blackburn.³

The flea or *'uku-lele* was a well-known pest in nineteenth century Hawaii, especially in native huts, in caves, and on interisland schooners. Attacks of fleas and reactions to their bites provoked many early visitors to place fleas high on their lists of complaints about conditions encountered in the islands.

No English common name for any species of flea appears in the Hawaiian literature of the nineteenth century. In 1881, the Reverend Thomas Blackburn, who was referred to as the "Father of Hawaiian Entomology",⁴ recognized the presence of fleas in Hawaii and classified them as members

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of the Order Diptera.⁵ If specimens were collected and preserved by Blackburn or others in this era, their whereabouts is unknown to us. Consequently, we are not absolutely certain what species of fleas were observed. Nor do we know when they were introduced. However, after reviewing the available evidence, we conclude that most references are to *Ctenocephalides felis felis* (Bouché), the nominative subspecies of the cat flea. The cat flea is today the most common flea of the cat, dog, and mongoose. It frequently infests dwelling sites and readily bites man.

Although the ships of Captain Cook and those who followed him to Hawaii in the next decade might well have carried domestic fleas that could have established populations on shore, we do not find supporting evidence for fleas in Hawaii during this period. Voyages to the island increased rapidly after 1790, and apparently fleas were introduced from European or American ships sometime before 1809, during the reign of Kamehameha I.

Fleas associated with man and domestic animals are now found commonly in the lowlands, but they occur also in the uplands and at a few locations high in the mountains. We cite several early examples of fleas in shelter caves at high elevations, and such examples may have led Bailey to observe in 1887, that "fleas abound, especially in dry, elevated places."⁶ These could have included *Pulex irritans* Linnaeus, the human flea, *P. simulans* Baker (no common name) and *Ctenocephalides canis* (Curtis), the dog flea, as well as *C. felis*. *P. irritans* thrives in Eurasia and also in the New World. It may, in fact, be indigenous to the Pacific Coast of North America, where domestic fleas were recorded in coastal British Columbia in 1792,⁷ and in what is now central California, as early as 1769.⁸ *C. canis* has been collected rarely, at high elevations, on dogs. It is our opinion that the fleas of montane caves were sustained and disseminated primarily by feral dogs. Such dogs were, and in some areas, still are, important members of the fauna.⁹

It is probable that the most ancient colonizer among fleas infesting mammals in Hawaii is *Xenopsylla vexabilis* Jordan, and that it came to the islands as a parasite of *Rattus exulans*, the Polynesian rat. This host is generally thought to have accompanied voyagers who arrived perhaps 1000–1500 years ago. Although *R. exulans* was present in the villages and temples of ancient Hawaii, apparently its flea was not considered a pest in those early times. Indeed, if the natives knew of this flea, they probably were not greatly concerned with it, nor is it likely that they had a specific name for it. *X. vexabilis* is an unaggressive, pale-colored species with a poorly-developed ability for hopping, and its breeding sites are confined to the nests of its hosts. We must suppose, however, that this flea was

present and that it was quite possibly the only flea of mammals in the entire archipelago in pre-Cook times.¹⁰

Although common household fleas such as the species of *Pulex* and *Ctenocephalides* associated with dogs, pigs, and humans, might have come with Polynesian colonizers, there is no firm evidence from the language to support such a contention. Hawaiian legends contain several detailed references to lice, nits of lice, and sayings concerning them, but we have found only one reference to the word flea. This occurs, almost in passing, in the Legend of Kawelo, which describes the proficiency of two warriors with the spear: "They could hit a grass blade, an ant, a fly or even a flea."¹¹ This legend was recorded in the 1860's or 70's and it is entirely probable that the version then recited was altered from its ancient form by new experiences to include the flea. By that time fleas had been known to the Hawaiians for perhaps three generations, through importation of one or more aggressive household species.

Examination of the word *'uku* and its combinations leads us to the conclusion that the word for flea, *'uku-lele*, is of post-contact origin. Pukui and Elbert give the primary English equivalents of *'uku* as "louse, flea", and modern Hawaiians often employ this dual usage. But it is apparent from its applications that *'uku* is a root word having the general meaning of ectoparasitic "bug", or an arthropod resembling one. For example, among parasites, *'uku-po'o* is head louse (*po'o* = head) and *'uku-kapa* is the body louse (or *tapa* louse, because of its presence in clothing); the bed bug is called *'uku-lio* (literally, horse bug) for no obvious reason, and ticks and mites are referred to as *'uku-hiipa* (literally, sheep bug). Fleas (*'uku-lele*) are thus the leaping ectoparasites (*lele* = leap, jump, hop, bounce). *'Uku* may also refer to certain wingless, nonparasitic arthropods: *'uku-pepa* the booklouse (*pepa* = paper) of the Order Psocoptera, and *'uku-limu*, the amphipod sand hopper (literally, seaweed bug.)¹² Obviously, it is impossible to find exact Hawaiian equivalents for the names of many parasitic arthropods, and some of the terms may apply only loosely to a given example. Perhaps *'uku-hiipa*, in addition to being a tick or mite, is also the sheep ked (a parasitic wingless fly).

The word *'uku-lele*, after it was fixed for reference to household fleas, was adopted as the name of the small 4-string guitar that became a popular musical instrument soon after arrival of Portuguese contract laborers in 1878. The usually accepted version of this adoption, as stated by Webster's dictionaries, is that the rapid movements of the fingers in playing the instrument resemble the leaping of fleas. However, Pukui and Elbert suggest the interesting alternative probability that the ukulele was named for Edward "'Uku-lele" Purvis, a small, nimble entertainer who was greatly responsible for popularizing this instrument in Hawaii.¹³

The earliest reference to the flea in Hawaii that we know of, was made by Archibald Campbell, who spent 13 months on Oahu from 29 January 1809 to 4 March 1810. Appendix No. I of his book is "A vocabulary of the language of the Sandwich Islands." It includes "Flea --- Ookoo rere" and "Louse --- Ookoo." Campbell made no comment on fleas in his text, but his inclusion of the word in his vocabulary suggests two things: Fleas were sufficiently well known as pests to the natives of Oahu that they called them a particular kind of louse. Also, that one or more species of fleas were introduced and widely established before 1809.¹⁴

Campbell prepared his word list before Hawaiian orthography was stabilized. He explained that ". . . the letters K and T, L and R, B and P, are frequently substituted for each other", and that "The double O [is sounded], as in boot, good."¹⁵ And in his Notes, Appendix No. IV: "The Vocabulary was written by the author as he recollected the words, and transmitted to the editor, who arranged them, and afterwards read them over to him, correcting the spelling from his pronunciation, according to the rules which are prefixed to it."¹⁶

Elbert recorded five vocabularies of some importance that were compiled before Campbell's.¹⁷ The word for flea is absent from all of them, but the word for louse (*Ootoo*) appears in the list prepared by King.¹⁸ This is strong additional evidence that Hawaiians were infested with lice before Cook's first landings, but it is only negative evidence that fleas were introduced only afterward.

The Russian explorer, Otto von Kotzebue, made his first visits to the islands (Hawaii and Oahu) in November-December 1816 and September-October 1817.¹⁹ Accounts of his experiences were published in German and English, in 1821. The following quotations are from Adelbert von Chamisso, a naturalist on the expedition:

Alle Inseln [of the Pacific] sind an Insecten ausnehmend arm. Es ist merkwürdig, das der Floh dem Hunde und Menschen auf die Inseln des grossen Oceans nicht gefolgt war und erst von den Europäern dahin gebracht ist. Nach unserer Erfahrung gilt diese Bemerkung von den Inseln der ersten Provinz [Micronesia north of the equator] ebensowohl als von Neu-Seeland und den Sandwich-Inseln.

Die einzigen ursprünglich wilden Säugethiere der Sandwich-Inseln sind eine kleine Fledermaus und die Ratte. Dieser hat sich nun unsere Hausmaus zugesellt, wie sich auch der Floh, Blatta-Arten und andere schädliche Parasiten eingefunden haben.²⁰

These comments on fleas, together with their translation in an English edition, apparently are the first so be published.²¹ Perhaps a foreigner residing in Hawaii told Chamisso that fleas attacking man and dogs were not present until Europeans brought them to the islands.

In Lord Byron's book is an appendix on natural history based on papers of Andrew Bloxam, who accompanied Byron and collected various zoological specimens between 3 May and 17 July 1825. There are three sentences referring to insects. The last sentence is as follows: "There are also several minute moths, several varieties of *Libellula*, one species of Cicada, a black earwig, a wood spider, and innumerable fleas."²²

Bloxam was unable to prepare his notes for publication. Fortunately, Byron's gleanings were supplemented many years later by Bloxam's diary, edited and published by the Bishop Museum. From his diary we learned that he had a personal encounter with fleas while in a native hut near the foot of the Nuuanu Pali, Oahu, on the night of 13 May 1825:

I passed a wretched night, a baby constantly squalling, every now and then relieved by the whining of a dog in the same hut, mice gnawing close to my ears, fleas biting and the cold very great.²³

Bloxam was more informative about his experiences with fleas on the shore of Pearl Harbor. He wrote that after he and six companions prepared to rest for the night in a large native house:

We threw ourselves down on the mats to sleep; this, however, was out of the question owing to the immense quantities of fleas and of the largest size which annoyed us. Scarcely one of us had an hour's rest all night, and in the morning we were full of sores and complaints. We turned out at daylight and I immediately stripped and bathed, and having well examined my clothes by this means got rid of the pests.²⁴

Neither Bloxam nor Byron mentioned the Hawaiian name of the flea, but Byron remarked that the Oahu printing press had given stability to the hitherto fluctuating orthography and that the orthography differed from that adopted by Captain Cook, that is, "the oo of Cook is now expressed by u, and so on."²⁵ And: "sounds of *r* and *l* are almost indifferently used."²⁶

David Malo was a native Hawaiian born about 1793 who, with aid of his associates, wrote extensively in his own language. These writings were variously revised, enlarged, translated, edited, and published several times by missionaries, but apparently they were not fully translated and published until 1903. In the most recent edition are the following statements:

The following are wild creeping things: . . . the *uku-poo* or head louse, the *uku-kapa* or body louse.

Whence come these little creatures? From the soil no doubt; but who knows?

There are also some flying things that are not good for food: such as the . . . flea (*ukulele*, jumping louse). . . . These are late importations; the number of such things will doubtless increase in the future.²⁷

Thus, Malo classified fleas, but not head and body lice, among the late importations. He apparently is first to use the spelling *ukulele* instead of *ookoo rere*. Because he could have been a boy when the *'uku-lele* was introduced, he may have had a recollection of that first spreading of fleas throughout the islands.

Francis Olmstead, a New England medical student, travelled and sought warm climates for his health. Soon after graduation from Yale University he boarded a whaler that visited Hawaii, but found that Honolulu in May 1840 was not an especially healthful place to live:

The three most unpleasant things about Honolulu, are the *dust*, the *musketoes*, and the *fleas*. . . .

As to the fleas, there is no escaping their tortures. They lie secreted in the matting of the floor, whence they sally forth to attack the feet and ankles of the occupant of the room, with malignant virulence, leaving dark, purple spots wherever they introduce their venom.²⁸

James Jackson Jarves, the editor and historian who arrived in 1837 and life in 1842, made a general comment: "The noxious vermin, such as mosquitoes, fleas, cockroaches, scorpions, and centipedes, are a modern importation, and have extensively increased."²⁹

Of special interest is Jarves' account, in his companion volume, of how fleas were introduced:

Waimea [Island of Kauai], according to native tradition, claims the honor of being the first landing-place of—*fleas*. Their introduction was after the following manner. A woman, as was customary then, having gone off to a vessel at anchor in the roads, received from her lover, upon her return, a bottle tightly corked, which he told her contained valuable *waiwai* (property), and that she must not open it until she reached shore. She obeyed his instructions, and overjoyed with her acquisition, hastened to show it to her friends. Having assembled them all, the bottle was uncorked with the greatest care, and looking in, they beheld nothing. The nimble prisoners had all hopped out, and soon gave being to a countless progeny, that have gone on ever since, hopping and biting with undiminished zeal. The man should have been flayed alive for his mischief, or tied, Mazeppa like, to the back of one of his own fleas.³⁰

Jarves did not disclose his source of information. Evidently, he had not learned of the story until after he had written his article about Kauai because his statements therein say nothing about the introduction of noxious insects before 1836.³¹

Jarves related experiences he and his traveling companions had with fleas on the island of Hawaii. On 30 June 1840 the men left Waimea (Kamuela) to cross the Waimea Plain for an ascent of Mauna Kea:

At sunset, we stopped at a cave, about seven thousand feet up, where we were to pass the night. It is a common caution, to beware of these places; and never was the caution more needed, than in this instance. Scarcely had we set foot within its precincts, before we were literally *fleaed* alive.³²

This appears to be the first reference to a flea-infested cave. Yet, Jarves seemed to anticipate the fleas as if such a condition were common knowledge.

Charles Wilkes and his men of the United States Exploring Expedition did considerable investigating in 1840 and 1841. He sent naturalists to explore Kauai. They arrived at Koloa on 27 October 1840, and one group proceeded directly across the island from Waimea. While in the interior of the island, as Wilkes related, "wild hogs are evidently numerous. . . ." ³³ and "wild dogs are said also to exist in bands." ³⁴

A group of his men travelling to Kaili's temple (Umi's Heiau) on the island of Hawaii mentioned a significant observation on the ecology of feral dogs, namely, that the dogs seek shelter in the many caves.³⁵ We have already stated that such dogs might well have been the primary support of cave-infesting fleas. Consequently it is of interest that while climbing Haleakala (on Maui) sometime in 1853, George Washington Bates and his horse were threatened by a pack of more than 12 feral dogs.³⁶

Somewhere on the west side of this mountain, near its summit, are two caves named Little Flea Cave and Big Flea Cave. Ruhle gave information on these caves, but we have not learned who named them.³⁷ No flea-infested caves were mentioned by such early visitors to the crater as Richards, Andrews, and Green,³⁸ Wilkes³⁹ or Bates.⁴⁰ When Samuel C. Damon ascended the mountain in 1846 or 1847 he associated fleas with an unidentified cave about two miles from the summit but did not refer to any location as Little or Big Flea Cave. Describing this experience he then states, in part, of the fleas: "Their praises have recently been celebrated in doggerel rhyme and their services recommended to His Majesty, by a late visitor to our shores."⁴¹

Thence follows the fifth, that is, last, stanza of an anonymous poem. Besides that stanza we reproduce the introductory statement and first and fourth stanzas of the poem since they contain notes of taxonomic and ecological value:

HAWAIIAN FLEAS

Written after six weeks confinement from the effects of their bite.

All "*pizen sar-pents*," the Paddies say,
Saint Patrick from Ireland drove away:
And Rumor hath it, these "Isles of the Sea"

Are from venomous creatures free.
Yet six long weeks have I kept 'the shelf,'
Scarce able to hobble or help myself,
From Draggon-like bite of what they please
To call in the Sandwich Islands—Fleas!

Let a wight once sleep in a native hut,
And not Gulliver, napping in Lilliput,
Was e'er so harassed by the evolutions
And nimble attacks of the Lilliputians,
As one so caught, by these trained battalions,
Of cut-throat, skip-about, black rascalions;
If he gets off *alive*, though with wounds overpowered,
Let him laugh and rejoice that he's not quite devoured.

If the King wants troops that won't prove skittish,
But will fight like a bear, both French and British,
And raise the nation, head, neck and shoulder,
Above all nations that bully and scold her,
Let a Bill at head-quarters be at once got through,
To enroll a Grand Army—as other Kings do;
But with *improvement*—to enlist, if they please,
Instead of *kanakas*, these veteran *Fleas*!⁴²

The unfortunate poet was evidently so hypersensitive to flea bites that he became incapacitated for six weeks. He justifiably resented statements sometimes made, that Hawaii had no venomous animals. The reference to color and activity of the fleas establishes that these pests were not pale lethargic species like *Xenopsylla vexabilis*. But certainly species of *Ctenocephalides* and *Pulex* can be called "skip-about, black rascalions." In a later issue of *The Friend* is another anonymous flea-inspired poem.⁴³

Wilkes was one of the early explorers who affirmed that, besides caves in the mountains, native huts were important foci of flea populations. Reporting further on travels of his men who left the coast of Kauai in order to cross the island, he said, ". . . their guides carried them about a mile beyond the half-way house, to a deserted hut, intending to stop there for the night; but our gentlemen found it so infested with fleas and vermin, that, although it rained, they returned, and passed the night comparatively free from these annoyances."⁴⁴

Wilkes, himself, set out from Hilo at the head of a large company for an ascent of Mauna Loa on 14 December 1840. After leaving Olaa (now Keaau) the procession advanced so that:

At 3 p.m. we reached Kapuauhi [probably Kapu'euhi], which consists of a few houses, and is about fifteen miles from Olaa . . . and as it looked like rain we concluded to occupy one of the houses that was offered to us; but it taugth us a

lesson we remembered for some time, for all of our blankets and clothes became infested with fleas, and those of the most voracious kind. . . .

At 8 a.m., we left Kapuauhi, or what our company called 'Flea Hall,' after having passed a most comfortless night. Nothing could be more annoying than the swarms of fleas that attacked us, and I believe all the native houses are thus unpleasantly infested.⁴⁵

While returning from a similar trip to Mauna Kea, Jarves and his companions stopped about seven miles from Hilo to spend the night of 7 July 1840. He described the place as a filthy hovel occupied by about 20 naked natives and an abundance of pigs, dogs, and poultry. But the travellers were so tired that they: ". . . begged a mat, and fatigue (having walked twenty-five miles) soon wrapped us in a slumber, which neither the furious attacks of fleas, or swinish noises around us, could break."⁴⁶

The Reverend Henry T. Cheever, a missionary who visited and travelled widely among the islands in 1850 and perhaps also in 1849, reviewed in some detail the short history of fleas in Hawaii:

Not a noxious beast, reptile, or insect existed on the islands when first made known to Europeans. Now they have musquitoes, fleas, centipedes, and scorpions.

. . . One would think the flea certainly indigenous, where now it is found so much at home both with man and beast; but the natives have an amusing story of the first time they got ashore from a ship, through the trick of a sailor, which is better imagined than told.

Whether that be true or not, the name by which they call the flea is pretty convincing evidence that it has not been known as long as some other things. It is called *uku lele*, or jumping louse, the *uku* being an old settler from time immemorial, and nothing else they knew like the imported flea. So they named the stranger the jumping *uku*: it is one of the first aboriginals a traveler becomes acquainted with in going about among Hawaiians and sleeping in native houses, and it is the last he is so glad to bid good-by to when he comes away, though it is ten chances to one if they do not insist upon keeping him company and making themselves familiar half the voyage home.⁴⁷

As Cheever must have read Jarves' account of the introduction of fleas (we found a copy of Jarves' book with Cheever's holograph signature), we cannot assume that natives also told him the story. The extension of 'uku, louse, to 'uku-lele, flea, is plausibly explained. The reference to fleas attacking travelers in native houses is by now well-documented information. Cheever wrote from personal experience on this subject, on Maui.⁴⁸

This was not Cheever's first experience with Hawaii's fleas. After sailing from Lahaina to Mahukona, island of Hawaii, he wrote:

Sleep was slow to visit a frame to which the notable Hawaiian fleas now had their first introduction. They were so eager and clamorous for acquaintance, and prone, like the human *kamaainas*, to renew their friendly gripe and *aloha*, that I

turned and tossed upon my gravel bed until dawn of day, and then arose, sorely bestead, weary, and hungry.⁴⁹

And after describing a water spout seen before landing farther down the coast at Kawaihae: "These dangers of the deep safely passed, the Sabbath over, and our first flea-memorable night at Mahukona ended, Messrs. Coan, Lyman, and Wilcox set off early on foot Monday morning, for their long tramp to Hilo."⁵⁰

The same group of men later went to seek Kilauea Volcano, where they had further experiences; Cheever's descriptive narrative, inspired by the boiling lava, then knew no bounds:

It was about four o'clock in the afternoon that we arrived near the brink of this mighty crater of Kilauea, at a place near the northwest end, where our screen was to be erected for the night. . . .

Night and drizzling vapor having overtaken us before our tired natives could make any thing better, we had to nestle altogether under a screen or '*Lean-to*' of cane and brakes, thrown up against the wind, but open in front and looking toward the caldron. It was only a few feet from the precipice, so that by lifting one's self up from the reclining posture you could have in full view.

The fearful tossing of those fiery waves. Natives and hogs having, it is probable, stopped under the same screen before, we found the *ukulele* tribe so numerous and rapacious that it was impossible to sleep. They would make their biting onsets in such numbers, and with such desperate fury, that a man could hardly keep from screaming out with very anguish. If, while our assailants took breath, we dozed a moment, it was only to be awakened by a more fell gripe from these pitiless robbers of your rest, that were no more to be shaken off or got rid of than Hercules's poisoned robe. At length finding, as the proverb goes, what can't be cured must be endured, we fell to making merry with our torment and our tormentors, and to shaking our flea-bitten sides with woebegone bursts of laughter at each other's jokes. And we concluded, not without reason, that the remembrance of Pele's *fleas* would be quite as indelible as that of her *fires*. . . .

Our natives being wakened from sleep, which the *ukulele* did not care to harass when they had better blood for game, we soon despatched breakfast and other duties.⁵¹

Interestingly, Cheever associated hogs with the fleas, but the word hogs could be a lapsus for dogs. The fleas' preference for Europeans may have been more apparent than real. The natives were merely more tolerant of flea bites. It is a common observation that persons of various races, including Caucasians, respond little or not at all to attacks of fleas when exposed continuously to them.⁵²

Cheever and companions learned their lesson, for: "Our second night by the volcano was one of rather more ease and comfort than the first, a screen having been erected for us in a new spot, beyond the domain of imported fleas."⁵³

The travelers left the volcano the next day and reached Olaa at night: "What with this [fire burning in a crowded house] and the feverishness incurred already by exposure and weariness, and the incessant fire of a flying detachment of *ukulele* that came in my shirts from the volcano, there was no sleep for the night, and I was in poor plight for travel the next day."⁵⁴

Bates, who showed in his writings as a more fastidious person than did others of his contemporaries, traveled extensively in the islands in 1853. He apparently stayed out of flea-infested caves, but he had personal acquaintance with conditions in native huts. One unpleasant incident occurred on Kauai:

I had spent the day in examining scenery among the adjacent mountains, and night and a heavy rain-storm overtook me at the small village of Anahola. Although my position was any thing but comfortable, and my night's lodgings had a most dreary perspective, I found it impossible to change things for the better. . . . Vexed, impatient and disappointed, I threw myself down upon a mat, and, supperless and dinnerless, with my wet clothes on, I tried to sleep. Through the buzzing of countless multitudes of mosquitoes, and the eager embraces of gigantic fleas, I kept tossing from side to side, wishing for sleep. Tired nature, obtained a victory at last.

On waking up next morning, I ascertained *one* cause of my restlessness. A couple of dirty dogs had nestled down by me on one side, and a couple of *women* (!) on the other. I arose, shook myself, saddled my horse, and started at full gallop for the south side of the island.⁵⁵

Earlier on the same trip Bates was repelled to observe in Hanalei Valley how ectoparasites, probably including fleas, were gleaned from a dog. A heavy rain had again driven him to seek shelter in a native hut. There, near the embers of a dying fire, he saw the native man stretched out on a mat. His wife sat close to the fire:

Occasionally she would bestow a furtive glance on her dusky lord, and then upon something which appeared to nestle most unquietly in her bosom. I sat surveying her for some time, when, instead of an infant, out peered the head of a sickly mongrel dog. Its very appearance was repulsive and *uncanine*, rendered still more so from a partial suffocation beneath the folds of that filthy blanket. Finding it impossible to retain him there, his mistress employed herself by picking vermin off him, and depositing them one by one in her capacious—*mouth!*

Bates reports that he forthwith seized his belongings, bolted from the hut, and sought shelter in a nearby grove of trees.⁵⁶

The practice of eating vermin may have led to Malo's advice, probably on prompting by missionaries, that fleas are not good for food.⁵⁷ One missionary expressed shock at the habit Hawaiians had of eating vermin from their heads and clothes.⁵⁸ Sereno Bishop recalled how Hawaiians

daily hand picked lice from each others' heads in Kailua, Kona in the 1820's.⁵⁹ By vermin, early writers probably meant lice, but fleas may have been included by some.

Bates also encountered fleas while touring Molokai, when, at the end of his trip, he spent the night at Kaunakakai.⁶⁰

Although Mark Twain expressed some kind feelings for Hawaii during his touring, his account of a trip on an interisland schooner in July 1866 was sprinkled with angry and derogatory remarks:

AT SEA AGAIN

Bound for Hawaii, to visit the great volcano . . . in the good schooner Boomerang [*Emeline*].

Another section of the deck, twice as large as ours, was full of natives of both sexes, with their customary dogs, mats, blankets, pipes, calabashes of poi, fleas, and other luxuries and baggage of minor importance. As soon as we set sail the natives all laid down on the deck as thick as negroes in a slave-pen, and smoked and conversed and captured vermin and eat them, spit on each other, and were truly sociable.

The first night, as I lay . . . idly watching the dim lamp swinging to the rolling of the ship, and snuffing the nauseous odors of bilge water, . . . a party of fleas were throwing double summersets about my person in the wildest disorder, and taking a bite every time they struck.⁶¹

At least one woman has recorded unpleasant experiences with fleas while aboard an interisland schooner. Isabella Bird spent six months in the islands in 1873 and first published her writings in 1875, in London. On March 23, 1873, while aboard the schooner *Jenny* on an 18-hour trip from Oahu to Koloa, Kauai, she spent a miserable night among flies, mosquitoes, cockroaches, rats, and "fleas agile beyond anything. . . ."⁶²

The early authors frequently omitted references to their sources, so except for their obviously personal experiences with fleas, an element of uncertainty as to original source is commonly present. On the other hand, uncertainty is the rule with legends and sayings. We close our account of fleas in early Hawaii with two riddles and a saying that have come to our attention. The riddles were listed by Henry P. Judd in his collection of Hawaiian proverbs and riddles. Judd made his collection relatively recently and obviously included a mixture of the modern and ancient. The riddles we quote are probably modern. Even so, they are interesting examples of the flea in Hawaiian humor. The first riddle: "My wild animal dwelling with men; if you can find it you will put it to death, but if not found, it will return alive in the house and stay there. Answer: A flea."⁶³ The second: "When it snaps, it is dead. Answer: A flea."⁶⁴ Pukui and Elbert quote the adage, "'*A'ohe 'uku-lele nana e 'aki*", which is literally, "not a flea to bite" and denotes perfect comfort.⁶⁵ Such a state must

certainly have been appreciated at times by many a resident and visitor in the Hawaii of the nineteenth century.

NOTES

- ¹ Haas, G. E., N. Wilson and P. Q. Tomich, "Ectoparasites of the Hawaiian Islands I. Siphonaptera." Unpublished manuscript (1969), 83 pp.
- ² Anonymous, "The Flea in California History and Literature," *California Historical Society Quarterly*, Vol. 15, No. 4 (December, 1936), pp. 328-337.
- ³ J. F. Illingworth, *Early References to Hawaiian Entomology*, Bishop Museum Bulletin No. 2 (1923), pp. 4, 7, 8, 11, 12-13, 32.
- ⁴ C. E. Pemberton, "Highlights on the History of Entomology in Hawaii 1778-1963," *Pacific Insects* Vol. 6, No. 4 (December 30, 1964), p. 692.
- ⁵ T. Blackburn, "Hawaiian Entomology," HAA for 1882 (1881), p. 61. Fleas are now placed in the Order Siphonaptera. See Note 1.
- ⁶ E. Bailey, "The Flora and Fauna of the Hawaiian Islands," HAA for 1888 (1887), p. 54.
- ⁷ G. P. Holland, *Siphonaptera of Canada*, Dominion of Canada, Department of Agriculture, Technical Bulletin No. 70 (September, 1949), p. 66. Holland states, "Evidence that domestic fleas (presumably *P. irritans*) may have been well established in coastal B. C. in the 18th century is to be found in the diary, now in the British Columbia Archives, Victoria, written in 1792 by George Goodman Hewett, assistant surgeon on board H.M.S. *Discovery* (Captain George Vancouver). Hewett states during the investigation of a certain abandoned Indian village, Vancouver's men were driven out of the place by myriads of fleas which tormented them to such an extent that they rushed out into the water up to their necks!"
- ⁸ Anon., *op. cit.* p. 329. Padre Crespi of the Portolá expedition reported fleas swarming in unused Indian huts on the banks of Purisima Creek in what is now San Mateo County, on 27 October 1769.
- ⁹ P. Q. Tomich, *Mammals in Hawaii: A Synopsis and Notational Bibliography*, Bishop Museum Special Publication No. 57 (1969), pp. 51, 53-56.
- ¹⁰ One of us (N. W., unpublished data) discovered in 1963 on Laysan Island a flea of the genus *Parapsyllus* in the burrows and nests of shearwaters and albatrosses. This flea might well have been associated with sea birds in Hawaii for many tens of thousands of years before the arrival of *Xenopsylla vexabilis* and the Polynesian rat.
- ¹¹ A. Fornander, "Fornander Collection of Hawaiian Antiquities and Folklore," *Memoirs of the Bishop Museum*, Vol. 5, Part I (1918), p. 44.
- ¹² Mary K. Pukui and S. H. Elbert, *Hawaiian-English Dictionary* (Honolulu: University of Hawaii Press, 1957), pp. 338-339.
- ¹³ *Ibid.*, p. 339.
- ¹⁴ A. Campbell, *A Voyage Round the World, from 1806 to 1812; in which Japan, Kamschatka, the Aleutian Islands, and the Sandwich Islands, were visited* (Edinburgh: Constable, 1816), pp. 237, 241. In the words of Frans Smit, the eminent siphonapterologist of the British Museum (letter of 18 February 1969), "This

Campbell was a poor blighter who had lost both feet and a couple of fingers through frostbite in Kamchatka." Campbell was a British seaman with the Russian American expedition to northwest North America. After his unfortunate incapacitation, the wounds never completely healed. He left ship in Hawaii, where he spent more than a year in partial recuperation. Campbell then returned to Scotland, where he contrived to earn a living as an itinerant street and river boat musician, and by selling a metrical history of his adventures. When befriended by a sympathetic editor he was enabled to fully transcribe his book for publication, and in time produced several British and American editions of it. In 1967 the University of Hawaii Press published a facsimile reproduction of the third American edition of 1822.

¹⁵ *Ibid.*, p. 228.

¹⁶ *Ibid.*, p. 282.

¹⁷ S. H. Elbert, "The Hawaiian Dictionaries, Past and Future," HHS 62nd Annual Report (1954), p. 6.

¹⁸ J. King, *Vocabulary of the Language of Atooi* [Kauai], one of the Sandwich Islands, Jan. 1778, Appendix No. 5 In: J. Cook, *A Voyage to the Pacific Ocean. Undertaken by the Command of His Majesty for Making Discoveries in the Northern Hemisphere. . . . In the Years, 1776, . . . 1780*, Vol. 3 (Dublin: Chamberlaine, et al., 1784), p. 553.

¹⁹ O. von Kotzebue, *Voyage of Discovery in the South Sea and to Behring's Straits in Search of a North-east Passage. . . 1815, 16, 17, and 18, In the Ship Rurick* (London: Richard Phillips and Co., 1821), p. 81.

²⁰ A von Chamisso, *Bemerkungen und Ansichten auf einer Entdeckungs-Reise unternommen In den Jahren 1815-1818. . . In Kotzebue, Entdeckungs-Reise in die Süd-See. . .* (Weimar: Gebrüder Hoffmann, 1821), pp. 36, 145.

²¹ von Chamisso, *Remarks and Opinions of the Naturalist of the Expedition. In Kotzebue, A Voyage of Discovery into the South Sea. . .* (London: Longman, Hurst, Rees, Orme, and Brown, 1821), Vol. 2, pp. 368-369; Vol. 3, p. 237. Pertinent data are as follows:

"All the islands are extremely poor in insects. It is remarkable that the flea had not followed the dog and man to the islands of the Great Ocean, and that it was first introduced there by the Europeans. According to our experience, this remark holds good of the islands of the first province, as well as of New Zealand and the Sandwich Islands.

"The only wild quadrupeds of the Sandwich islands are a small bat and the rat. To these is added our common mouse; besides the flea, some species of blatta, and other noxious parasites."

²² G. A. Byron, *Voyage of the H.M.S. Blonde to the Sandwich Islands, in the years 1824-25* (London: Murray, 1826), p. 252.

²³ A. Bloxam, *Diary of Andrew Bloxam Naturalist of the 'Blonde' on her trip from England to the Hawaiian Islands in 1824-25*, Bishop Museum Special Publication No. 10 (1925), p. 252.

²⁴ *Ibid.*, p. 45.

²⁵ *Op. cit.*, p. vi.

²⁶ *Ibid.*, p. 127.

- ²⁷ D. Malo, *Hawaiian Antiquities (Moolelo Hawaii)*, Bishop Museum Special Publication No. 2, Ed. 2 (1951), pp. 40–41. Translated from the Hawaiian by Dr. Nathaniel B. Emerson in 1898.
- ²⁸ F. A. Olmstead, *Incidents of a Whaling Voyage...* (New York: Appleton, 1841), pp. 213–214.
- ²⁹ J. J. Jarves, *History of the Hawaiian or Sandwich Islands* (Boston: Tappan and Dennet, 1843), p. 11.
- ³⁰ Jarves, *Scenes and Scenery in the Sandwich Islands...being observations from my note-book during the years 1837–1842* (Boston: James Monroe and Co., 1843), p. 130. This is a fanciful story that may relate an actual happening. Yet, we can scarcely place much significance in it as a record of the initial introduction of fleas, nor is it likely that fleas were disseminated from such a single beginning throughout the island chain.
- ³¹ Jarves, "Sketches of Kauai," *Hawaiian Spectator* Vol. 1, No. 1 (1838), p. 66.
- ³² Jarves, *Scenes and Scenery...*, p. 223.
- ³³ C. Wilkes, *Narrative of the United States Exploring Expedition, during the years 1838, ... 1842* (Philadelphia: Lea and Blanchard, 1845), Vol. 4, p. 65.
- ³⁴ *Ibid.*, p. 66.
- ³⁵ *Ibid.*, p. 99.
- ³⁶ G. W. Bates, *Sandwich Island Notes* (New York: Harper and Bros., 1854), p. 323. The author wrote under the pseudonym of A. Hāolé.
- ³⁷ G. C. Ruhle, "A Guide for the Haleakala Section, Island of Manui, Hawaii," *Hawaii Nature Notes*, Hawaii Natural History Association in cooperation with the National Park Service (1959), pp. 32, 86. The section on insects was prepared under the supervision of Dr. D. Elmo Hardy, Professor of Entomology, University of Hawaii.
- ³⁸ Anonymous, "Tour Around Maui," *MH* Vol. 25, No. 8 (1829), pp. 246–251.
- ³⁹ *Op. cit.*
- ⁴⁰ *Op. cit.*
- ⁴¹ S. C. Damon, "Ascent of Haleakala," *F*, Vol. 5, No. 15 (1847), p. 116.
- ⁴² Anonymous, "Hawaiian Fleas," *F*, Vol. 4, No. 22 (16 November 1846), p. 169.
- ⁴³ Anonymous, "To My Crutch," *F*, Vol. 5, No. 1 (1 January 1847), p. 1. This poem is dedicated to the fleas at "Keaiva", Hawaii, and signed at Kailua, 13 November 1846.
- ⁴⁴ *Op. cit.*, p. 65.
- ⁴⁵ *Ibid.*, pp. 120–121.
- ⁴⁶ Jarves, *Scenes and Scenery...*, p. 260.
- ⁴⁷ H. T. Cheever, *The Island World of the Pacific* (New York: Harper and Bros., 1851 and 1856), pp. 105–106. The statement about the "amusing story" is an allusion to the account given by Jarves; see Note 30.
- ⁴⁸ Cheever, *Life in the Sandwich Islands, or the Heart of the Pacific, as it was and is* (New York: Barnes, 1851 and 1856), p. 141.
- ⁴⁹ Cheever, *The Island World...*, p. 145.

- ⁵⁰ *Ibid.*, pp. 151-152.
- ⁵¹ *Ibid.*, pp. 290, 294-295.
- ⁵² See Note 2, *op. cit.*, p. 333. In Spanish California of 1855 these remarks were made concerning fleas: "Hardly has one gone to bed when a band of these small devilish fleas pursue their bloody maneuvers on one's sensitive skin, driving away sleep and tormenting a man to madness. . . However, on the rancho one is not afraid to speak of this country-wide evil, even in mixed company, and the stranger whose skin is not yet leathery enough to withstand it is openly pitied."
- ⁵³ Cheever, *The Island World* . . . , p. 306.
- ⁵⁴ *Ibid.*, p. 312.
- ⁵⁵ Bates, p. 216.
- ⁵⁶ *Ibid.*, p. 208.
- ⁵⁷ *Op. cit.*, p. 41.
- ⁵⁸ C. S. Stewart, *Journal of a Residence in the Sandwich Islands, during the years 1823, 1824, and 1825* . . . (New York: Haven, 3rd Ed., 1828), p. 164. From 1st London Ed. Introduction and notes by William Ellis. The Reverend Mr. Stewart went to Kilauea with Byron and party, 1825.
- ⁵⁹ S. E. Bishop, *Reminiscences of Old Hawaii*, Advertiser Historical Series No. 1 HG, Honolulu, (1916), p. 13.
- ⁶⁰ *Op. cit.*, p. 288.
- ⁶¹ Mark Twain, "Letter from Honolulu (correspondence to the *Union*), Honolulu, July 1866," *Sacramento Daily Union* Vol. 21—Whole No. 4802 (Saturday Morning, August 18, 1866), Cols. 5-6. Twain's letters were first reported in the *Union*, then were later revised and published in Vol. 2, Chap. 28, of *Roughing It*, which originally appeared in 1872.
- ⁶² Isabella L. Bird, *Six Months in the Sandwich Islands* (Honolulu: University of Hawaii Press, 1964), p. 174.
- ⁶³ H. P. Judd, "Hawaiian Proverbs and Riddles," *Bishop Museum Bulletin* No. 77 (1930), p. 78.
- ⁶⁴ *Ibid.*, p. 79.
- ⁶⁵ *Op. cit.*, p. 339.

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