



Resurrection of *Porites hawaiiensis* Vaughan, 1907; a Hawaiian coral obscured by small size, cryptic habitat, and confused taxonomy

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The purpose of this note is to propose recognition of *Porites hawaiiensis* Vaughan, 1907, (Figure 1A–D) a species currently regarded as a junior synonym of *Porites rus* (Forskål 1775), as a valid species, based on molecular and morphological characteristics. Vaughan (1907 p. 217, pl 91 figs 2, 2a) described *Porites (Synaraea) hawaiiensis* from a specimen collected from Kalihi Harbor on the island of O‘ahu, Hawai‘i (Figure 1 C). *Porites (Synarea) hawaiiensis* was also reported from the Marshall Islands by Wells (1954 p. 455, pl 170 figs 6,7). *Porites hawaiiensis* was subsequently thought to be a junior synonym of *Porites (Synaraea) convexa* Verrill, 1864, due to the small calices that are characteristic of the subgenus *Synaraea* (Maragos 1977). Later both species were made synonyms of *P. (Synaraea) rus*, Forskål 1775 (Veron & Pichon 1982; Cairns 1991). Vaughan, 1907 described the calices of *P. hawaiiensis* as “densely spinulose” with “coenchyma” equaling, or exceeding the 0.5 mm diameter of the calices, and a pitted star shaped space between the pali (Figure 1C,D). In the absence of living specimens, the Vaughan, 1907 type specimen was difficult to distinguish from newly settled *P. rus* colonies, but upon closer examination in the field, Maragos *et al.* (2004) recognized small coral colonies that appeared to match the description of *P. hawaiiensis*. This species can readily be distinguished from *Porites rus* and other *Porites* by very small colony size (<10cm), mottled yellow and green-brown coloration, encrusting form, and thicket of spiny denticles between distantly spaced corallites (Figure 1A–D). Genetic data from Forsman *et al.* 2009 confirmed that this small ‘patch coral’ is distinct from *P. rus* (n = 3 of each species; uncorrected pairwise distance; mtCOI = 0.5% ± 0.2 SE; mtCR = 0.7%, and nuclear ITS = 14.2 % ± 1.3 SE), and is also distinct from all other Hawaiian congeners. The genetic data further indicated that ‘Synaraea’ was surprisingly closely related to other Poritids and may not warrant sub-genus status (Forsman *et al.* 2009). Fenner (2005) referred to this same small ‘patch coral’ as *Porites cf. bernardi*, however; *P. bernardi* Vaughan, 1907 type specimens were coralliths (Figure 1E) with calices similar in size to those of most other *Porites* (Figure 1 F). The geographic range of *Porites hawaiiensis* is unknown, although it is abundant throughout the Northwest and Main Hawaiian Islands, and has been reported at depths from 1 to 55m (30 fathoms) in the Marshall Islands (Wells 1954). This species can be easily overlooked; it tends to grow in cryptic habitats (cracks, crevices, and interstitial spaces), and at first glance, the small patches of colonies (0.5–10cm) can be confused with crustose coralline algae, or new recruits of other *Porites* species. This species is remarkable because of its small adult colony size; a curious life history characteristic since many *Porites* in the Pacific can be among the largest and longest-lived scleractinian corals (Brown *et al.* 2009). We propose that this small ‘patch coral’ is a distinct species, and that *P. hawaiiensis* is the most appropriate name.

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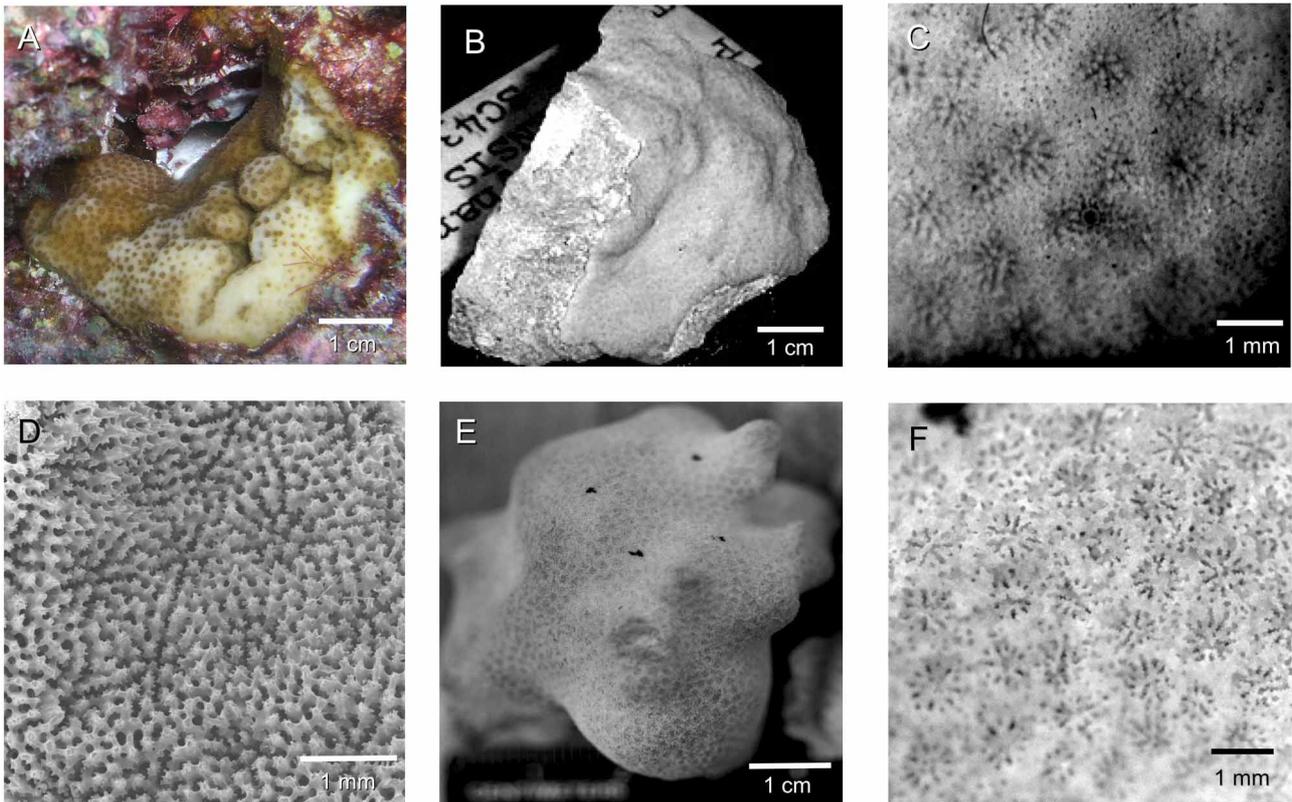


FIGURE 1. (A) *P. hawaiiensis* colony photographed *in situ* at La Perouse Bay Maui; (B) *P. hawaiiensis* topotype collected from Kalihi harbor by Duerden 1904 (Bishop Museum SC439); (C) Holotype of *P. hawaiiensis* Vaughan 1907 (United States National Museum at the Smithsonian Institution USNM21624); (D) SEM image of ‘patch coral’ sample # HM54 from Forsman *et al.* 2009; (E) Cotype of *P. bernardi* Vaughan 1907 (United States National Museum at the Smithsonian Institution, USNM20820); (F) Close up of a cotype of *P. bernardi* (USNM20820).

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