length, straight and capitate, pappiform, or occasionally of the first kind once branched, or occasionally with echinated heads." The difference between *Dactylocalyx pumiceus*, Stutchbury, and *Dactylocalyx pumicea*, Gray = *Iphiteon ingalli*, Bowerbank, Carter found to consist in the fact that "the latter is charged, especially towards the surface, with long linear spicules (slender, fusiform, slightly inflated, and spined for some distance at each end), while these are not to be seen in *Dactylocalyx pumiceus*, Stutchbury.

In 1876 Marshall[1] placed the genus *Dactylocalyx* among his Pleionacidæ, and characterised it in the following words:—"Fused latticed tissue of little regularity. Free spicules are represented by rosettes and irregular hexradiate forms of unknown significance." As species, he noted (1) *Dactylocalyx pumiceus*, Stutchbury, and (2) *Dactylocalyx crispus*, O. Schmidt.

In 1877, in his paper on *Stauronema*,[2] Sollas referred *Dactylocalyx* and *Aphrocallistes* to his family of the Aphrocallistidæ, distinguished by "sex-radiate skeleton spicules with rays making any angle with each other," and in an article On the Action of Caustic Potash on the Siliceous System of Sponges,[3] he pointed out the irregular arrangement of the spicules in the skeletal framework of *Dactylocalyx pumiceus* and *Dactylocalyx subglobosus*.

In 1877, in his studies on fossil sponges,[4] Zittel referred *Dactylocalyx* with *Periphragella*, Marshall, and *Myliusia*, Gray, to his Mæandrospongidæ, which consist of meandering, entangled, and simple anastomising tubes or plates.

In the Journal of the Microscopical Society,[5] Sollas described a simple plain cup-shaped variety of *Dactylocalyx pumiceus*, Stutchbury, which he named *Dactylocalyx pumiceus*, var. *stutchburyi*, or simply *Dactylocalyx stutchburyi*. He called attention to the typical alternation of the outer and inner, or upper and under radial furrows or furrow-like depressions, described the continuous skeletal framework composed of united hexradiate spicules, and further some six-rayed, five-rayed, and simple spindle-shaped or thread-like isolated "flesh spicules." At the knots of these originally isolated six-rayed spicules, which are here united to the skeletal framework without recognisable order, Sollas frequently saw the beginning of a hollow octahedron, such as occurs in the Ventriculites. This was seen to become so completely covered by siliceous lamellæ that the knots in the older portions of the framework appeared to be solid throughout.

Among the Hexactinellida procured by the American Expeditions from the West Indies, and examined by Oscar Schmidt in 1880, several species of *Dactylocalyx* were found, which corroborated on the whole the opinions of Sollas. The form which had previously been described by Schmidt as *Dactylocalyx crispus* was now separated from the genus, and regarded as a young form of Schmidt's *Syringidium zittelii*.

[1] *Zeitschr. f. wiss. Zool.*, Bd. xxvii. p. 122.
[2] *Ann and Mag. Nat. Hist.*, ser. 4, vol. xix. p. 1.
[3] *Ann. and Mag. Nat. Hist.*, ser. 4, vol. xx. pp. 285-300.
[4] *Abhandl. d. k. Baier. Akad.*, vol. xiii. p. 38.
[5] Vol. ii. pp. 122-133.