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OPINION

BOTULA KLEEMANNI VALENTICH-SCOTT, 2008, ACTUALLY A MEMBER OF *LITHOPHAGA* (*LEIOSOLENUS*)

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INTRODUCTION

Botula kleemanni Valentich-Scott, 2008 (Valentich-Scott & Tongkerd, 2008) does not show the generic characters of *Botula*, particularly a kidney-shaped and smooth shell with prominent terminal beaks, as given by Soot-Ryen (1955, 1969) and Kleemann (2007).

HISTORICAL BACKGROUND

Mörch (1853: 55) introduced *Botula* as subgenus of *Lithophaga* (for details see Kleemann, 2007: 4). Although Jousseaume (1888: 216) had placed *Botula* in generic rank, Dall (1898) treated *Botula* as a subgenus of *Modiolus* and designated *Modiola cinnamomea* Lamarck, 1819, as the type species of *Botula* (Kleemann, 2007: 4). Several authors, e.g. Soot-Ryen (1969), Savazzi (1982), Arnaud & Thomassin (1990) and Darga (1992), considered *Botula* a member of Modiolinae instead of Lithophaginae, to which it belongs (Wilson & Tait, 1984; Coan et al., 2000; Kleemann, 2007).

TAXONOMY

Lithophaga (Leiosolenus) kleemanni (Valentich-Scott, 2008)

Botula kleemanni Valentich-Scott, 2008: 194, Fig. 2G–H, ? Fig. 2F, non Fig. 2I.

"Shell ellipsoid-elongate; beaks subterminal; periostracum usually dark brown, with heavy fibrous mat posterodorsally, extending past the posterior margin (Fig. 2G)" (Valentich-Scott & Tongkerd, 2008: 194). This shell configuration, the position of the beaks, the shell cover and its extension beyond the shell rim does not apply to *Botula* but to *Lithophaga* (*Leiosolenus*).

Regarding the original description, the following is stressed: Anterior is semicircular not "truncate". "Beaks very inflated". Those of the holotype may be more elevated from the ellipsoidal outline than in most other *Leiosolenus* species. But they need a terminal position and somewhat coiled form to support a determination as *Botula*. Both these features are lacking in the holotype of *kleemanni* (Valentich-Scott & Tongkerd, 2008: 193, Fig. 2G–H). The beaks are clearly subterminal, the ventral margin is straight to slightly convex and not concave as in *Botula*. The posterior shell end is somewhat attenuated and distinctly less high than the anterior, while in *Botula* both ends have about the same height.

"Holotype (specimen described above)" (Valentich-Scott & Tongkerd, 2008: 194) must read figured above. The legend cannot be regarded as a description. It reads "G–H, holotype, SBMNH 83123, length 12.35 mm: G, external left valve; H, internal right valve". In the description, the shell length is given as "12.21 mm, plus 1.22 mm of periostracum extending past shell". Thus, there is a difference of 1.08 mm between the initially given (total) length in the legend and the sum of shell length plus extension, amounting 13.43 mm.

The general similarity of the holotype of *kleemanni* with other *Leiosolenus* species is obvious because of the shell form and its postero-dorsal cover wich is usually mainly calcareous and of a species-specific pattern (Kleemann, 1977, 1980, 1982, 1984, 1986, 1990, 1994, 2002, 2008; Kleemann & Hoeksema, 2002).

The similarity of *kleemanni* with the Caribbean *Lithophaga* (*Leiosolenus*) *appendiculata* (Philippi, 1846; synonyms *Lithodomus bisulcatus* Orbigny, 1853 and *bi-excavatus* Reeve, 1857) is particularly striking (Kleemann, submitted).

"F, in situ in living coral" (Valentich-Scott & Tongkerd 2008: Fig. 2), does not show a live coral. No remains of coral tissue can be recognized on the skeleton surface, having the same grey colour as the skeleton. A freshly split-open live coral would reveal coral tissue on the coral surface, distinctly darker in colour compared with the whitish skeletal interior below the uppermost live part. The sample appears dry when the picture was taken and the coral was likely dead when collected. Covered by detritus (and a fibrous mat?), the exposed bivalve is posteriorly flush with the coral surface. In contrast, *Botula* generally penetrates deep into the substrate, as can be seen in the adjacent Fig. 2E (Valentich-Scott & Tongkerd, 2008).

Odd records of *Botula* in live coral, e.g. Savazzi (1982), have to be considered as occurrences in dead parts of live coral (Kleemann, 1996). Valentich-Scott & Tongkerd (2008) claim that both, *Botula cinnamomea* and *kleemanni*, inhabit live coral, the latter exclusively.

"Fig. 2I, facultative siphon of living animal" (Valentich-Scott & Tongkerd, 2008), clearly depicts the extended inhalant siphon and the shell ends of a specimen lacking any posterior shell extensions or a fibrous cover as in Fig. 2G. Only some detrital sediment adheres on the shells. Therefore, I do not consider it as a member of *Lithophaga kleemanni*.

Valentich-Scott & Tongkerd (2008: 194) "***Comparisons.*** **–** Easily separated from *Botula cinnamomea* and other members of the genus, by the heavy periostracal mat found along the posterodorsal margin of the shell." How true, as *kleemanni* is a member of *Lithophaga* (*Leiosolenus*), it should be compared with those species.

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For the honour and undeserved respect I received from Paul Valentich-Scott I feel sorry to correct him.

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