

THE INDO-PACIFIC PILUMNIDAE IX. DESCRIPTION OF A NEW GENUS AND NEW SPECIES (CRUSTACEA: DECAPODA: BRACHYURA) FROM HONG KONG

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Abstract

A new genus and new species of pilumnid crab, *Xestopilumnus cultripollex* gen. et sp. nov., is described from waters off Hong Kong. *Xestopilumnus* is unusual among pilumnids in having a smooth and glabrous carapace, long, slender ambulatory legs and a flattened pollex of the larger male chela.

Introduction

In early 1996, we examined a specimen of an unusual rhizopine pilumnid crab (sensu Ng 1987a, 1989, 1990; Ng and Davie 1991) collected from waters off Hong Kong. Its smooth carapace with distinctly convex dorsal surfaces, unusual anterolateral armature, long, slender legs and flattened pollex of the larger male cheliped, however, require that a new genus and new species be established for the specimen. More specimens were subsequently passed to us by the Swire Institute of Marine Science.

The type specimens are deposited in the crustacean collection of the Institute of Zoology, Academia Sinica, Beijing (ASB), Zoology Department, Hong Kong University (HKU) and the Zoological Reference Collection (ZRC), School of Biological Sciences, National University of Singapore. The present paper is part of an ongoing series on pilumnid taxonomy (see Ng 1992)

Taxonomy

Xestopilumnus gen. nov.

Type species

The type species is *Xestopilumnus cultripollex* sp.

nov., by present designation. Gender of genus is masculine.

Diagnosis

Dorsal surface of carapace smooth, without cristae, granules, setae or pubescence, evenly convex longitudinally and transversely. Frontal margin entire, without lateral lobes. Exorbital angle low, continuous with supraorbital margin. Anterolateral margin with 2–3 low, serrated, lobes. Posterolateral margins subparallel, carapace appears sub-rectangular. Endostomial ridges visible but low. Exopod of third maxilliped gently serrated along inner margin. Chelipeds of males unequal; pollex laterally flattened, blade-like. Ambulatory legs (especially meri) long, slender; dactylus of last leg gently curved upwards. Suture between sternites 3 and 4 medially interrupted; cavity of male abdomen reaching to mid-length of sternites 3 and 4.

Etymology

The name is derived from the Greek 'xeo' for scraping off, alluding to the smooth, shaven, appearance of the type species, in arbitrary combination with the genus name 'Pilumnus'.

Remarks

The type species of the proposed new genus, *Xestopilumnus cultripollex* sp. nov. most closely resembles *Speocarcinus celebensis* Tesch, 1918, from Celebes (= Sulawesi) and Java (Tesch 1918; Serène 1964), and there is a possibility that they may be congeneric. Tesch (1918) described *Speocarcinus celebensis* from a 3.85 by 2.85 mm male from Celebes. Serène (1964) subsequently reported a 6.81 by 5.53 mm female from Java Sea, although he commented that his specimen differed from Tesch's in carapace proportions, degree of convergence of the posterolateral margins, anterolateral margin armature, shape of the abdomen and granulation pattern of the chelae. Serène (1964: 195), however, could not ascertain the significance of these differences as both specimens belonged to different sexes. Serène (1964) nevertheless suggested that the species might be closer to *Viaderiana* Ward, 1942. Ng (1987a: 102) concurred and provisionally referred *S. celebensis* to *Viaderiana*. The taxonomy of *Speocarcinus* s. str. has been discussed by Guinot (1969) and Felder and Rabalais (1986).

The authors are not convinced that Tesch's and Serène's specimens are conspecific as the differences in their carapace and anterolateral margin armature are significant. The general appearance of *Xestopilumnus cultripollex* is certainly much closer to the female specimen of '*V. celebensis*' figured by Serène (1964: Plate 16D). There are some differences nevertheless. In Serène's specimen, the front is less pronounced, the inner distal angle of the carpus of the cheliped is less triangular and sharper and the anterolateral lobes/teeth are stronger. These differences might well be sexually related. Compared to Tesch's descriptions and figure (1918: Plate 11 figure 1) of *V. celebensis*, *X. cultripollex* differs markedly in the structures of the carapace, cheliped, ambulatory legs and mouthparts. A significant difference is that the anteroexternal angle of the merus of the third maxilliped in *V. celebensis* is auriculiform but rounded in *X. cultripollex*. The dactylus of the last ambulatory leg of *V. celebensis* is also proportionately shorter and not upcurved. The outer surface of the chela in *V. celebensis* is strongly granulated and there is no indication that

the pollex is distinctly laterally flattened. The first male abdominal segment of *V. celebensis* is also much broader transversely, reaching the bases of the coxa (against not reaching the coxae in *X. cultripollex*). A re-examination of Serène's (1964) specimen will be necessary to establish if his specimen is conspecific and/or congeneric with that here described as *X. cultripollex*. The *V. celebensis* s. str. of Tesch (1918) on the other hand, is probably not congeneric with *X. cultripollex*. For the present, it is retained in *Viaderiana*.

The smooth carapace and elongate legs of *X. cultripollex* is similar to several species of *Viaderiana*, but in members of the genus, the anterolateral margins have either two to three spines or sharp teeth, the meri of the ambulatory legs have several well defined spines, the pollex of the male chela is subcylindrical and the distal part of the male first pleopod is strongly recurved (Serène 1970; Ng and Tan 1984; Ng 1987a).

The smooth, glabrous and convex dorsal carapace surfaces as well as the general shape of *Xestopilumnus* also allies it with *Heteropanope* Stimpson, 1858. *Heteropanope*, however, differs in having the posterolateral margins distinctly converging (against slightly converging), the anterolateral margin with three well demarcated teeth (against weak to absent), the epigastric cristae are low but still apparent (against absent), the ambulatory legs are not elongate or serrated along the meral margins and the pollex of the larger chela is not laterally-flattened (cf. Takeda and Miyake 1969; Davie 1989). The carapace also resembles members of the rhizopine genus *Ceratoplax* Stimpson, 1858 (cf. Ng 1987a). The anterolateral margin of *Ceratoplax* species, however, are not armed with serrated lobes and the anteroexternal angle of the merus of the third maxilliped is strongly expanded (against rounded in *Xestopilumnus*).

***Xestopilumnus cultripollex* sp. nov.**

(Plate 1; Figs. 1–3)

Material examined

1 male, holotype, carapace width 18.5 mm, carapace length 17.0 mm, ASB, specimen number



Plate 1. *Xestopilumnus cultripollex* gen. et sp. nov. Paratype male, carapace width 7.6 mm (ZRC 1977.678). Overall view.

005, sublittoral waters off eastern Hong Kong Island, Hong Kong, coll. Environmental Protection Department, Hong Kong Government, 1991. 1 male, paratype, carapace width 8.4 mm, carapace length 6.3 mm, HKU, station T22, waters off eastern Hong Kong Island, Hong Kong, coll. S. Y. Lee, 1993. 2 males, paratypes, carapace widths 9.1 mm, 7.6 mm, carapace lengths 7.2 mm, 6.0 mm, respectively, HKU, ZRC 1997.678, station 73–10, waters off eastern Hong Kong Island, Hong Kong, 22°15.44'N 114°28.1'E, 27 m depth, muddy bottom, coll. S. Y. Lee, April 1995. 1 male, paratype, carapace width 7.3 mm, carapace length 5.9 mm, ZRC 1977.679, station T15, waters off eastern Hong Kong Island, Hong Kong, 22°10.06'N 114°16.8'E, 36 m depth, muddy bottom, coll. S. Y. Lee, 1992. 1 subadult female, paratype, carapace width 5.6 mm, carapace length

4.7 mm, ZRC 1997.680, station 42–11, waters off eastern Hong Kong Island, Hong Kong, 22°11.07'N 114°15.84'E, 35 m depth, mud/sand bottom, coll. S. Y. Lee, April 1995.

Description (male holotype)

Carapace broader than long; appears rectangular; dorsal surfaces evenly convex longitudinally and transversely, smooth, without trace of cristae, granules, setae or pubescence; gastro-cardiac groove shallow, not prominent. Frontal region prominent, extending well beyond base of orbit; frontal margin entire, appears almost straight when viewed dorsally; without trace of lateral lobules. Supraorbital margin finely granulate, merging gradually with very low exorbital angle. Exorbital angle separated from low, lobiform first

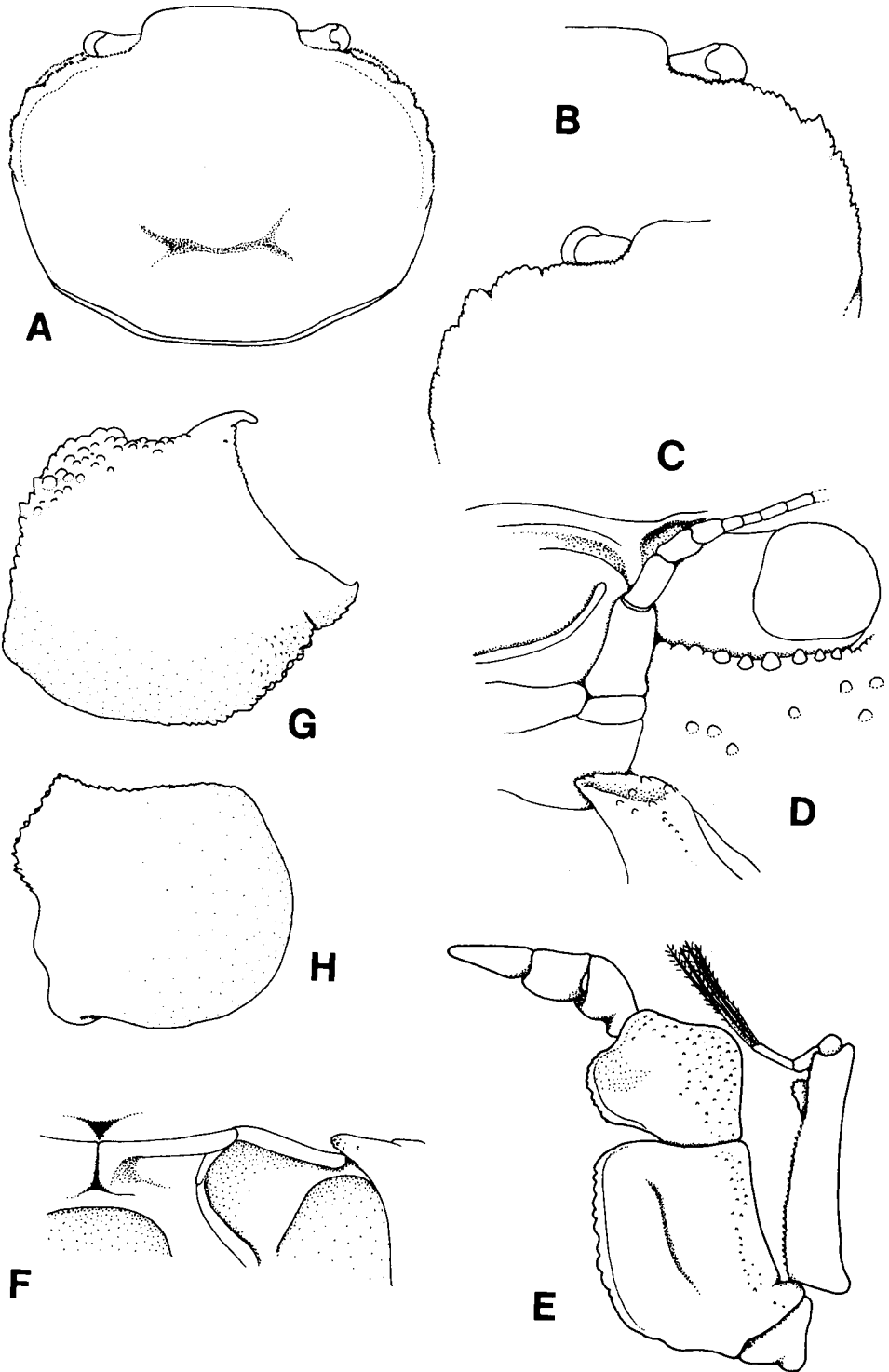


Fig. 1. *Xestopilumnus cultripollex* gen. et sp. nov. Holotype male. A, carapace; B, right anterolateral margin; C, left anterolateral margin; D, left orbit and antenna; E, left third maxilliped (setae denuded); F, left posterior margin of epistome and endostome; G, right merus of cheliped; H, right carpus of cheliped.

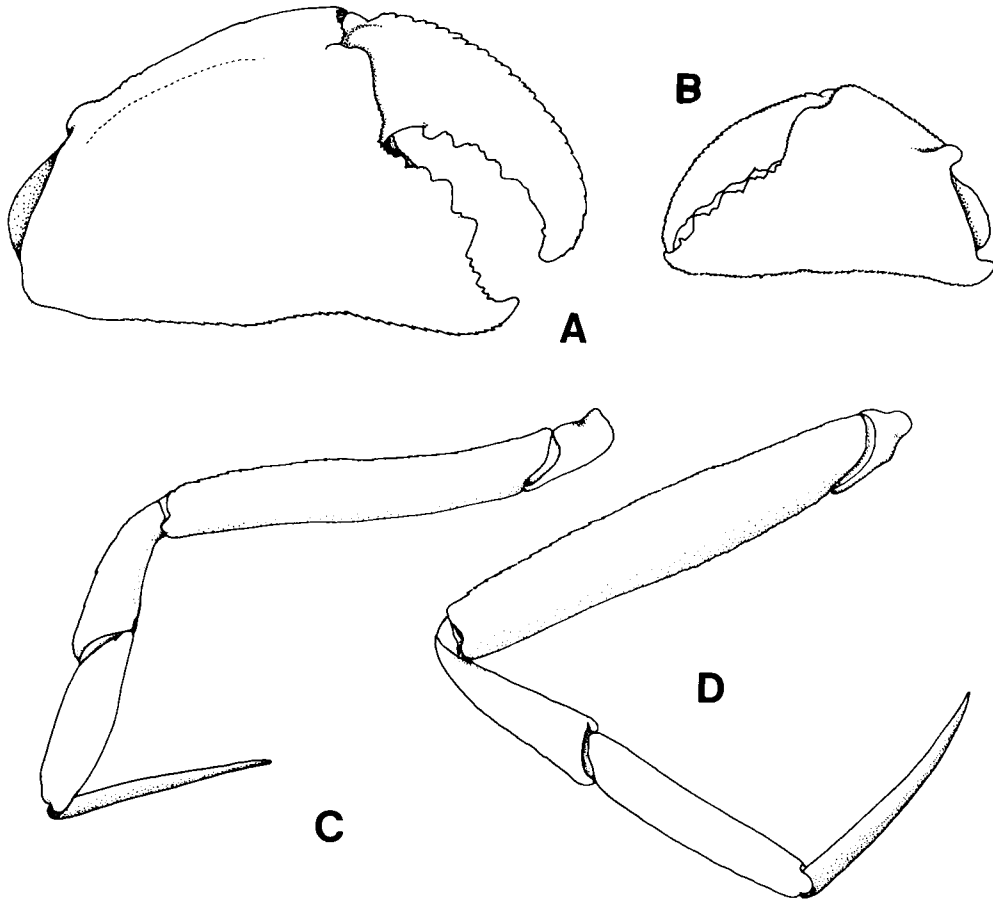


Fig. 2. *Xestopilumnus cultripollex* gen. et sp. nov. Holotype male. A, right chela; B, left chela; C, left fourth ambulatory leg; D, left third ambulatory leg.

epibranchial tooth by shallow but distinct V-shaped cleft; exorbital and first epibranchial tooth so low such that part of granulated pterygostomial region is visible from dorsal carapace view; second epibranchial tooth low, not well demarcated from first tooth; low third epibranchial tooth barely discernible on right side, not visible on left; entire anterolateral margin (including margins of all teeth) gently serrated. Anterolateral margin not well demarcated from posterolateral margin, with posterolateral margins gently convex, slightly converging. Infraorbital margin with rounded granules of various sizes; suborbital and pterygostomial regions either gently rugose or covered with scattered small, rounded granules. Eyes relatively small but well developed, filling

entire orbit, cornea well developed.

Antennular fossa large, occupying most of space below front; antennules folding transversely. Antennae with large, rectangular basal segment which occupies entire orbital hiatus, reaching beyond edge of inner edge of infraorbital margin; segments 1–3 progressively shorter and smaller. Posterior margin of epistome gently sinuous. Endostomial ridges low but discernible. Third maxilliped covering most of mouth field; ischium subrectangular, outer margin crenulate, with shallow but distinct median oblique sulcus; merus squarish, inner margin slightly crenulate, outer surfaces covered with very low, flattened granules, anteroexternal angle not expanded; palp (carpus, propodus, dactylus) longer than merus;

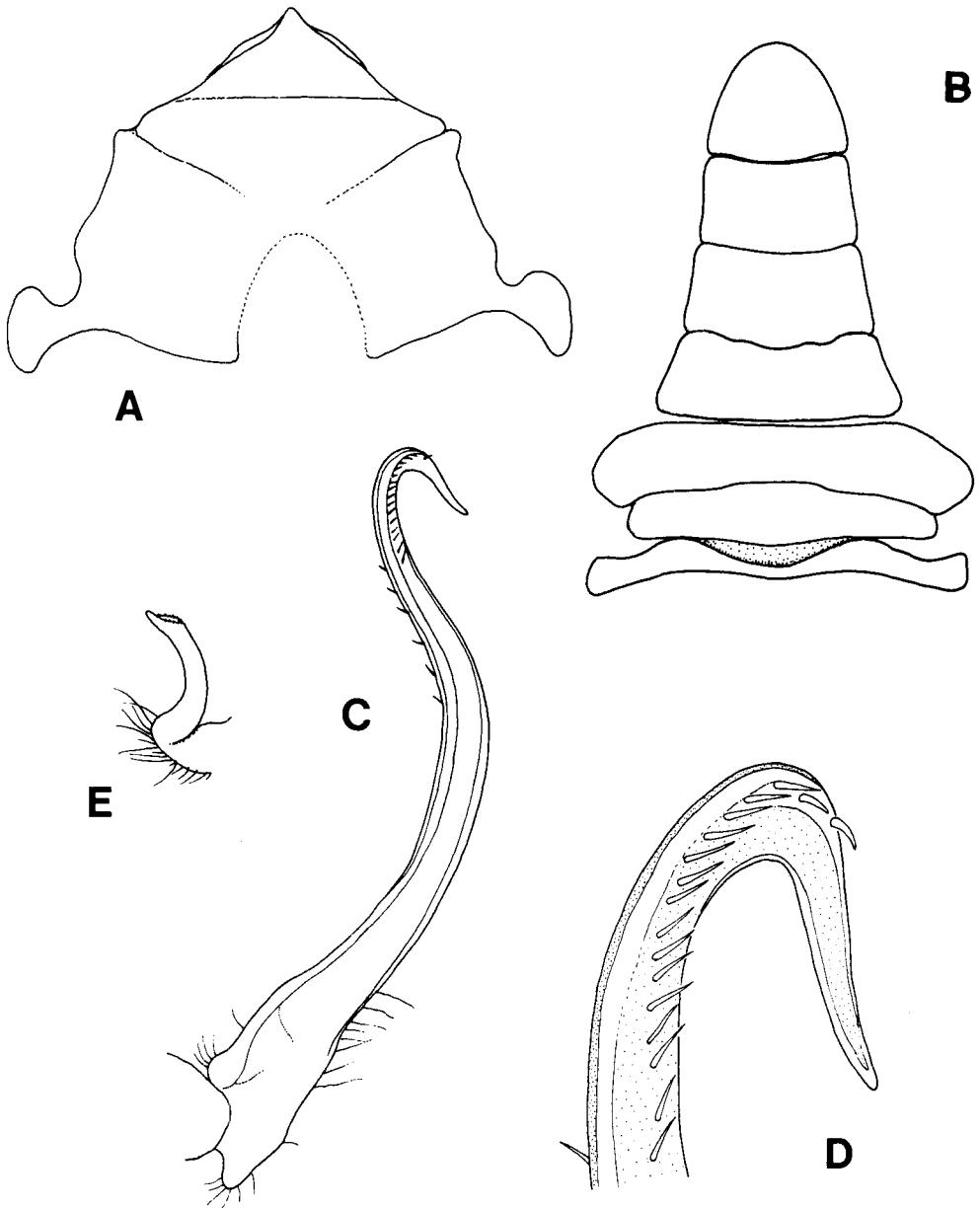


Fig. 3. *Xestopilumnus cultripollex* gen. et sp. nov. Holotype male. A, anterior thoracic sternites; B, abdomen; C, right male first pleopod; D, distal part of male first pleopod; E, left second male pleopod.

exopod reaches to upper edge of merus, inner margin (including that of subdistal tooth) gently serrated, flagellum long, well developed.

Chelipeds unequal, right much larger. Merus distinctly granulate along edges and margins, but unarmed. Carpus rounded, outer surfaces smooth;

inner margin gently serrate; inner distal angle with large, sub-lamelliform truncate tooth, outer margin serrate. Surfaces of large chela either almost smooth or covered with low, small, granules, without setae; proximal part of dorsal margin of palm lined with small granules, ventral margin

gently serrate to tip of pollex; dactylus strongly curved, cutting edge with several small teeth and denticles, dorsal margin serrated; pollex strongly laterally flattened, appears almost blade-like, cutting edge with two large teeth and many denticles. Outer surfaces of smaller chela covered with small, low, granules; dorsal margin of palm gently serrated, lined with setae; ventral margin gently serrate up to tip of pollex; dorsal margin of gently curved dactylus serrate, lined with setae, cutting edge with several very low, broad, teeth; pollex laterally flattened, blade-like, cutting edge with three large teeth and several denticles.

Ambulatory legs long, slender; margins (especially carpus, propodus and dactylus) lined with setae; third pair longest. Meri of legs slender, laterally flattened; carpus elongate, unarmed; propodus elongate, margins either unarmed or with weak, scattered, serrations; dorsal margin of merus of leg 4 gently serrate, ventral margin smooth; dorsal and ventral margins of meri of legs 1–3 gently serrate; dactyli gradually tapering; dactylus of leg 4 gently curved upwards; dactyli of legs 1–3 gently recurved.

Sternum gently covered with low, flattened, granules and low pubescence; sternites 1 and 2 fused; sternites 2 and 3 separated by distinct, complete suture; suture between sternites 3 and 4 medially interrupted, lateral parts distinct but shallow; cavity for male abdomen reaching to mid-length of sternites 3 and 4, reaching imaginary line connecting median points of cheliped bases. Suture between sternites 5 and 6 medially interrupted; complete in sutures between subsequent sternites. Penis at base of the coxa of last ambulatory leg.

Abdomen triangular; segment 1 longitudinally narrow, with sinuous median ridge, not reaching bases of coxae of last pair of ambulatory legs; segment 2 longitudinally broader; segment 3 as wide as segment 1 but much broader longitudinally; segments 4–6 trapezoidal, progressively less broad, lateral margins straight to slightly convex; telson semicircular, lateral

margins strongly convex.

Male first pleopod strongly sinuous, distal part distinctly hook-shaped, tip turned gently upwards. Male second pleopod short, sinuous, sigmoid; distal part cup-shaped, margins lined with several short, sharp, spines.

Etymology

The name is derived from the Latin 'culter' (for blade) and 'pollex' for thumb, alluding to the blade-like pollex of the larger male chela. Used as a noun in apposition.

Remarks

All the specimens of *Xestopilumnus cultripollex* are in good condition and there is no indication that the setae and/or pubescence on the carapace have been either scraped or brushed off on any of them. All the specimens were very pale in coloration, although some have only been very recently collected. Their colour in life is thus probably yellowish white. Although the corneas of all the specimens are well developed, there is hardly any black pigmentation. The pale coloration, reduced pigmentation in the eyes, and gently upcurved last ambulatory dactyli of *X. cultripollex* suggests that, like many rhizopines, it is probably a luteophilous species (Ng 1987a, b).

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