Michael Türkay Memorial Issue

**UROPTYCHUS TUERKAYI SP. NOV. (ANOMURA: CHIROSTYLIDAE),
A NEW SQUAT LOBSTER FROM THE ATLANTIS-GREAT METEOR
SEAMOUNT CHAIN IN THE EASTERN ATLANTIC**

BY

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ABSTRACT

A new species of chirostyliid squat lobster, *Uroptychus tuerkayi* sp. nov., is described based upon material collected by the French *Seamount 2* project (1993) from the Atlantis-Great Meteor Seamount Chain south of the Azores Islands, at a depth of 340-730 m. *Uroptychus tuerkayi* resembles *U. maroccanus* Türkay, 1976 from the Moroccan coast, but it can be readily distinguished by the eyes being distinctly longer instead of as long as broad (globular in *U. maroccanus*), the antennal article 5 with a small instead of prominent distomesial spine, the anterolateral spine of the carapace slightly smaller than or subequal to, instead of much smaller than the lateral orbital spine, the pterygostomian flap anteriorly acuminate and not strongly produced to a spine as in *U. maroccanus*, and in having pereopod 1 with obsolescent instead of distinct spines on the merus and carpus. This is the sixth species of *Uroptychus* from the eastern Atlantic. A key to the eastern Atlantic species of *Uroptychus* is provided.

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INTRODUCTION

The squat lobsters of the genus *Uroptychus* in the Atlantic Ocean are noticeably less speciose compared to those in the Indo-West Pacific, especially in the eastern Atlantic (Baba et al. 2008; Baba & Macpherson, 2012; Baba & Wicksten, 2015, in press). Only five species are known from the eastern Atlantic: *U. rubrovittatus* (A. Milne-Edwards, 1881); *U. concolor* (A. Milne-Edwards & Bouvier, 1894); *U. bouvieri* Caullery, 1896; *U. maroccanus* Türkay, 1976; and *U. cartesi* Baba & Macpherson, 2012.

While examining the collection in the Muséum national d'Histoire naturelle, Paris (MNHN), unidentified material belonging to *Uroptychus* has come to our attention. This was collected by the French *Seamount 2* project (chief: Philippe Bouchet; Gofas, 1993) from the Atlantis-Great Meteor Seamount Chain, south of the Azores Islands, a depths of 340-730 m. It resembles *U. maroccanus* Türkay, 1976 from the Moroccan coast in having a smooth, glabrous carapace with a row of tiny spines along the lateral margins, in shape of the sternum, and in spination of the distal articles of pereopods 2-4, but it is clearly different in the shape of the eye, antenna and pterygostomial flap, and in spination of pereopod 1. This material is herein described as *Uroptychus tuerkayi* sp. nov.

A key to species from the eastern Atlantic is provided, incorporating characters that were verified by examination of type and/or comparative material.

The terminology used follows Baba et al. (2011). The measurements of specimens indicate the postorbital carapace length, unless otherwise mentioned. In description of the species, the holotype characters are shown in square brackets where meristic variations are observed in the type series. The abbreviations used in the text include: Mxp = maxilliped; P1 = pereopod 1 (cheliped); P2-4 = pereopods 2-4 (walking legs 1-3).

TAXONOMIC ACCOUNT

Family Chirostylidae Ortmann, 1892

Genus *Uroptychus* Henderson, 1888

***Uroptychus tuerkayi* sp. nov.**

(figs. 1, 2)

Type material.— Holotype. GREAT METEOR BANK, *Seamount 2*, R/V “Le Suroît”, Stn DW152, 30°01.99'N 28°22.09'W-30°02.20'N 28°22.29'W, 470 m (465 m on label), bioclastic coarse sand with rich fauna: sponges, hydroids, mollusks, etc., 11 Jan. 1993: female (3.6 mm), MNHN-IU-2016-2939.

Paratypes. GREAT METEOR BANK, station data as for holotype: 2 males (3.4 mm, carapace broken in another male), 2 ovigerous females (3.3, 3.5 mm),

Fig. 1. *Uroptychus tuerkayi* sp. nov., A-C, E-I, holotype, female (3.6 mm), MNHN-IU-2016-2939; D, paratype, male (3.0 mm), MNHN-IU-2016-2941. A, Carapace and anterior part of abdomen, dorsal; B, same, lateral; C, lateral part of carapace, dorsal; D, same; E, sternal plastron, with excavated sternum and basal parts of Mxp1; F, telson; G, right antennal peduncle, anterior part of pterygostomian flap included, ventral; H, Mxp1, ventral; I, same, setae omitted, lateral. Scales = 1 mm.

Fig. 2. *Uroptychus tuerkayi* sp. nov., A, B, D-I, holotype, female (3.6 mm), MNHN-IU-2016-2939; C, paratype, male (3.0 mm), MNHN-IU-2016-2941. A, Right P1, dorsal; B, same, distal part omitted, ventral; C, left P1, dorsal; D, left P2, lateral; E, same, distal part, setae omitted, lateral; F, left P3, lateral; G, same, distal part, lateral; H, left P4, lateral; I, same, distal part, lateral. Scales = 1 mm.

1 female (3.4 mm), MNHN-IU-2016-2940.— Stn CP146, 30°11.20'N 28°28.10'W-30°11.18'N 28°27.37'W, 420 m, 10 Jan. 1993, many screlactinian *Flabellum chrysomelae* and some gorgonians: 1 male (3.7 mm), MNHN-IU-2016-530 & 1 ovigerous female (3.5 mm), MNHN-IU-2016-529.— Stn DW147, 30°11.16'N 28°27.15'W-30°11.16'N 28°27.03'W, 340-345 m, bioclastic sand and sponges, 10 Jan. 1993: 3 males (2.7-3.1 mm), 2 ovigerous females (3.0, 3.4 mm), 2 females (2.7, 2.7 mm), MNHN-IU-2016-2941.— Stn DW172, 30°05.10'N 28°41.50'W-30°04.77'N 28°41.54'W, 455 m, 14 Jan. 1993, bioclastic sand, molluscs, corals and foraminiferans: 1 male (3.8 mm), MNHN-IU-2016-528 & 1 ovigerous female (3.6 mm), MNHN-IU-2016-527.— Stn DW179, 30°00.60'N 28°42.30'W-30°00.92'N 28°42.02'W, 600-730 m, 15 Jan. 1993, bioclastic sand, indurated sediment blocks and a few pieces of basalt, some sponges, Stylasteridae (Hydrozoa), and fragments of *Cyathidium* (Crinoidea): 1 female (3.1 mm), MNHN-IU-2016-531. HYERES SEAMOUNT, Stn DW182, 31°23.23'N 28°53.46'W-31°22.93'N 28°53.59'W, 480 m, bioclastic sand and large sponges, epifauna with hydroids, gorgonians, sponges, 16 Jan. 1993: 2 males (2.7, 5.0 mm), 2 ovigerous females (4.0, 4.9 mm), 1 female (4.6 mm), MNHN-IU-2016-2942. ATLANTIS SEAMOUNT, Stn DW263, 34°25.89'N 30°32.49'W-34°26.14'N 30°32.78'W, 610-655 m, bioclastic sand and sponges, 3 Feb. 1993: 1 male (2.7 mm), 1 female (4.0 mm), MNHN-IU-2016-2943.

Etymology.— Named after our dear friend, the late Michael Türkay, who contributed much to the knowledge of crustacean biology.

Description.— Carapace: Broader than long (0.7-0.9 (0.8) as long as broad); greatest breadth 1.4-1.9 (1.8)× distance between anterolateral spines. Dorsal surface smooth, glabrous and unarmed, moderately convex from side to side (more or less flattish in large specimens), slightly convex from anterior to posterior, with or without feeble depression between gastric and cardiac regions; without distinct ridge along branchial margin. Lateral margins convex or straight divergent posteriorly to convex point at posterior fourth, with row of tiny spinules or (denticle-like tubercles); anterolateral spine subequal to or (smaller than) lateral orbital spine, barely or not reaching tip of that spine. Rostrum 1.4-1.6 (1.5)× as long as broad, directed straight forward horizontally or (slightly ventrally), or slightly upcurved distally, sharp triangular with interior angle of 20-25 (21)°; dorsal surface concave; lateral margin smooth and nearly straight; length (0.70)-0.75 that of remaining carapace, breadth about half carapace breadth at posterior carapace margin. Lateral orbital spine well developed, situated slightly anterior to anterolateral spine. Pterygostomial flap anteriorly angular and ending in acuminate tip without distinct spine, smooth on surface; greatest height at anterior half 1.5-(1.6)× that of posterior half (height measured between upper margin along linea anomurica and ridge along lower margin).

Thoracic sternum: Excavated sternum sharply triangular on anterior margin, surface sharply carinated in midline. Sternal plastron 0.7 as long as broad, lateral extremities divergent posteriorly, sternite 7 slightly broader than sternite 6. Sternite 3 weakly depressed from level of sternite 4 in ventral view; anterior margin moderately concave in broad V-shape with wedge-shaped median notch without distinct flanking spine, anterolateral angle irregularly rounded, obsolescently denticulate. Sternite 4 anterolateral margin irregular, obsolescently denticulate and convex, without spine at anterior end; posterolateral margin very short, less than 0.3 length of anterolateral margin. Anterolateral margins of sternite 5 strongly convex, 2× longer than posterolateral margin of sternite 4.

Abdomen: Barely setose. Somite 1 slightly convex from anterior to posterior. Somite 2 tergite 2.9-3.4 (3.1)× broader than long; pleural lateral margins moderately concave, divergent in dorsal view, posterolaterally angular with blunt end. Pleuron of somite 3 narrowed laterally with blunt end; those of somites 4 and 5 proportionately broad laterally, ending in rounded margin. Telson slightly less than half (0.44-0.46 (0.46)) as long as broad; lateral margins constricted between anterior and posterior plates (not constricted in small specimens of CL 2.7 mm); posterior plate as long as and 0.8 as broad as anterior plate, posterior margin slightly concave.

Eye: Relatively short (length (1.4)-1.6× breadth), slightly falling short of midlength of rostrum. Cornea not dilated, length (0.6)-0.8× that of remaining eyestalk.

Antennule and antenna: Ultimate article of antennular peduncle 2.5-3.6 (2.9)× longer than high. Antennal peduncle overreaching midlength of rostrum. Article 2 with small distolateral spine. Antennal scale 1.3-(1.8)× broader than article 5, (terminating at) or slightly overreaching midlength of article 5. Article 3 distomesially (rounded) or produced to small spine. Article 4 with small but distinct distomesial spine. Article 5 with distomesial spine smaller than that of article 4, length 1.3-1.6 (1.4)× that of article 4, breadth (0.5)-0.6 height of ultimate article of antennule. Flagellum consisting of 7-9 (8 or 9) segments, (terminating at) or slightly overreaching rostral tip, not reaching distal end of P1 merus.

Mxp: Mxp1 with bases broadly separated. Mxp3 basis with distal denticle on mesial ridge. Ischium with flexor margin sharply ridged, not rounded distally; crista dentata with 23-29 (25 (left) or 27 (right)) denticles. Merus barely setose, 1.8× longer than ischium, without distolateral spine; flexor margin not cristate but roundly ridged, without spine. Carpus unarmed.

P1: 5.7 (6.3)-6.5× (females), 6.0-6.6× (males) longer than carapace, barely setose except for fingers, feebly granulose except for fingers. Ischium with basally depressed dorsal spine, ventromesial margin with well-developed subterminal spine proximally followed by row of denticle-like small or obsolescent spines.

Merus 1.3-1.5 (1.4) $\times$ longer than carapace; distal margin with 5 or 6 spines (mesial one of 2 dorsal spines and ventromesial spine larger, other spines low), dorsal surface with 2 small spines along mesial margin (distal larger, proximal one occasionally absent in large specimens, or both obsolete in large specimens including holotype) and row of several tiny spines or denticles in midline (obsolete in large specimens). Carpus subcylindrical, 1.2-1.4 (1.3) $\times$ longer than merus, distally bearing 2 tiny blunt ventral spines (1 mesial and 1 lateral), proximal portion with denticle-like dorsal and mesial spines distinct in small specimens, obsolescent in large specimens. Palm minutely granulose along mesial margin, somewhat narrowed proximally, 0.7 as high as broad, 3.6-4.3 (4.0) $\times$ (females), 3.3-4.4 $\times$ (males) longer than broad; length 1.0-(1.1 or 1.2) $\times$ (females), 1.1-1.2 $\times$ (males) that of carpus. Fingers distally strongly incurved and crossing when closed, somewhat gaping in males, not gaping in females, sparingly bearing relatively short setae; movable finger 0.30-0.38 (0.31) (females), 0.30-0.40 (males) as long as palm, opposable margin with prominent process slightly proximal to midpoint; opposable margin of fixed finger with low median eminence (lower in females than in males) proximally followed by longitudinal groove (obsolete in small specimens) accommodating opposite process of movable finger when closed.

P2-4: Sparsely setose. Meri strongly compressed mesiolaterally, successively shorter posteriorly (P3 merus 0.9 length of P2 merus, P4 merus 0.7 length of P3 merus), P2 merus (0.9)-1.0 $\times$ length of carapace, (1.2)-1.3 $\times$ length of P2 propodus; P3 merus (1.0)-1.1 $\times$ length of P3 propodus; P4 merus 0.7-0.9 (0.8) length of P4 propodus; length-breadth ratio, 3.5-4.2 (3.8) on P2, (3.3)-4.0 on P3, 2.6-3.0 (2.7) on P4; dorsal crest with or without small distal spine, unarmed elsewhere, occasionally with a few obsolescent proximal protuberances on P2 only, ventrolateral margin distally ending in small spine occasionally followed by much smaller, often obsolescent spine proximal to it, ventromesial margin smooth and unarmed. Carpi subequal in length on P2 and P3, shortest on P4 (P4 carpus 0.8 length of P3 carpus); carpus-propodus length ratio, 0.6 on P2, 0.5-(0.6) on P3, 0.5 on P4. Propodi longer on P3 than on P2, subequal on P2 and P4 or (shortest on P4); flexor margin nearly straight, with pair of slender movable terminal spines preceded by 5 or (6) similar unpaired spines on P2, 4-6 (6) spines on P3, 3 or (4) spines on P4. Dactyli relatively stout, dactylus-carpus length ratio, (0.7)-0.8 on P2 and P3, 0.9 on P4; dactylus-propodus length ratio, 0.4 on P2-4; flexor margin feebly curving, terminating in slender spine preceded by 7 or 8 stout triangular spines proximally somewhat diminishing, all slightly obliquely directed.

Eggs: Number of eggs carried, 5; size 1.06 $\times$ 1.01 mm-0.97 $\times$ 1.06 mm (CL 3.3 mm), 0.94 $\times$ 1.17 mm-1.04 $\times$ 1.25 mm (CL 3.5 mm); 6, 0.90 $\times$ 1.00 mm-1.05 $\times$ 1.10 mm (CL 4.9 mm); 9 eggs, 0.90 $\times$ 1.08 mm-0.90 $\times$ 1.16 mm (CL 3.0 mm); 15 eggs, 1.05 $\times$ 0.92 mm-1.12 $\times$ 0.94 mm (CL 3.6 mm).

Fig. 3. *Uroptychus maroccanus* Türkay, 1976, A-C, holotype, male, SMF 6770; D, paratype, male (5.2 mm, rostrum included); E, paratype, ovigerous female (8.0 mm, rostrum included), SMF 6093. A, Eye and anterolateral part of carapace, dorsal; B, anterior part of sternal plastron; C, left antenna, proximal part omitted, ventral; D, carapace, small spines along right lateral margin omitted, dorsal; E, distal part of right P2, lateral. Scales = 1 mm.

Remarks.— The present material agrees with the gross morphology originally described for *Uroptychus maroccanus* Türkay, 1976. Examination of the type material of *U. maroccanus* and of the material reported by Garcia Raso (1996) from the Moroccan coast and now kept in the Muséum national d'Histoire naturelle, Paris (figs. 3 and 4) disclosed additional morphological similarity in spination of the P2-4 propodi and dactyli, and in shape of the thoracic sternum including a sharply carinated excavated sternum. However, the present material can be distinguished from *U. maroccanus* by the following differences:

- The eyestalks including cornea are distinctly longer than broad instead of being globular (about as long as broad).
- The anterolateral spine of the carapace is subequal to or somewhat smaller than instead of much smaller than the lateral orbital spine.
- The antennal article 5 bears a small instead of prominent distomesial spine, and the antennal scale reaches or slightly overreaches the midlength of the antennal article 5, instead of falling short of the midlength or terminating in the proximal fifth of article 5.
- The P1 spination in *U. tuerkayi* is weaker, with the merus being spineless in large specimens or bearing at most 2 small dorsal spines in small specimens, and with the carpus bearing at most a number of small denticle-like spines on

Fig. 4. *Uroptychus maroccanus* Türkay, 1976, male (4.0 mm), MNHN-IU-2016-532: A, carapace and anterior part of abdomen, dorsal; B, same, lateral; C, sternal plastron; D, telson; E, left antenna, ventral; F, left Mxp3, ventral; G, right P1, dorsal; H, same, distal part omitted, ventral; I, left P2, lateral; J, left P4, lateral; K, distal part of same, lateral. Scales = 1 mm.

the proximal part. In *U. maroccanus*, two rows (mesial and dorsal) of numerous, distinct spines are dorsally visible on the merus and carpus.

- The pterygostomial flap is anteriorly acuminate, not strongly produced to a spine as in *U. maroccanus*.

In addition, the P2-4 meri are unarmed instead of bearing a row of spines on the dorsal crest.

KEY TO SPECIES OF *UROPTYCHUS* FROM THE EASTERN ATLANTIC OCEAN

1. P2-4 dactyli with penultimate spine prominent, at least twice as broad as antepenultimate spine; propodi with pair of terminal spines only 2
 - P2-4 dactyli with penultimate spine as broad as antepenultimate spine; propodi with pair of terminal spines preceded by row of unpaired, movable spines 3
2. Carapace with sharp spines along branchial margin *U. cartesi* Baba & Macpherson, 2012
 - Carapace with no distinct spines along branchial margin (Zariquey, 1968: 254, fig. 93b, c; Ingle & Christiansen, 2004: 115, figs. 90-93; characters verified by examination of holotype female, MNHN-IU-2016-535 (= MNHN-Ga 514)) *U. rubrovittatus* (A. Milne-Edwards, 1881)
3. Sternite 3 with pair of median spines on anterior margin (Zariquey, 1968: 265, fig. 93a; Ingle & Christiansen, 2004: 115, figs. 91, 94; characters verified by examination of lectotype male, MNHN-IU-2016-534 (= MNHN-Ga 507))
 - Sternite 3 without pair of median spines on anterior margin 4
4. Carapace with row of sharp spines along branchial margin; pair of epigastric spines present behind eyes (Caullery, 1896: 394, pl. 17 figs. 7-14; Ingle & Christiansen, 2004: 120, figs. 92, 95; characters verified by examination of ovigerous female (4.7 mm) reported by García Raso (1996) from Moroccan coast, MNHN-IU-2016-533 and numerous specimens from the Galicia Bank reported by Cartes et al. (2014)) *U. bouvieri* Caullery, 1896
 - Carapace with row of very small spines along branchial margin; pair of epigastric spines absent behind eyes 5
5. Eyes globular, nearly as long as broad. Anterolateral spine of carapace minute, much smaller than lateral orbital spine. Antennal article 5 with prominent distomesial spine, distinctly larger than that of article 4 (verified by examination of holotype male, SMF 6770 and 2 paratypes (1 male and 1 ovigerous female), SMF 6093, and 1 female reported by Garcia-Raso (1996) from Moroccan coast, MNHN-IU-2016-532) *U. maroccanus* Türkay, 1976
 - Eyes 1.4-1.6 times longer than broad. Anterolateral spine of carapace somewhat smaller than or subequal to lateral orbital spine. Antennal article 5 with distomesial spine distinctly smaller than that of article 4 *U. tuerkayi* n. sp.

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Queries to the Authors:

Please compare “=” versus “-” in “= MNHN = Ga 514” versus “= MNHN-Ga 507” in the Key to... list.