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## **On *Curelius* CASEY, 1900 and *Ephistemus* STEPHENS, 1829 (Coleoptera, Cryptophagidae) from the Afrotropical Region**

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**A b s t r a c t :** Three new species of *Curelius* CASEY, 1900 from southern Africa are described. Further distribution data of *Curelius japonicus* (REITTER, 1878) and *Ephistemus globulus* (PAYKULL, 1798) are published.

**K e y w o r d s :** Cryptophagidae, Atomariinae, *Ephistemus*, *Curelius*, new species, Afrotropical Region, distribution.

### **Introduction**

The species of *Curelius* CASEY, 1900 and *Ephistemus* STEPHENS, 1829 are poorly known and not in the focus of research. Three species of *Curelius* (LESCHEN, 1996) are described from the Palaearctic Region and six of *Ephistemus* from the Holarctic and Neotropical Region.

JOHNSON (1971) remembered on *Curelius*, which was forgotten since its description by T.L. CASEY in 1900.

Only LYUBARSKY (1999, 2011) mentioned *Curelius japonicus* (REITTER, 1878) from the Afrotropical Region. No other records of *Curelius* or *Ephistemus* were found.

### **Material and methods**

The material examined is deposited in the following collections:

- MFNB ..... Museum für Naturkunde, Berlin, Germany
- MMUM ..... University of Manchester, Department of Entomology, Manchester, U. K.
- NMNW ..... National Museum of Namibia, Windhoek, Namibia
- SAMCT ..... South African Museum, Cape Town, Republic of South Africa
- TMP ..... Ditsong National Museum of Natural History (former Transvaal Museum), Pretoria, Republic of South Africa
- WIRC ..... Wisconsin Insect Research Collection, Madison, WI, USA
- ZMFK ..... Zoologisches Forschungsmuseum Alexander Koenig, Bonn
- ZMH ..... Zoological Museum, Helsinki, Finland
- ZMK ..... Zoological Museum, Kopenhagen, Danmark
- ZSM ..... Zoologische Staatssammlung, München, Germany

cES.....author's private collection, Berlin, Germany

The morphological studies were conducted using an Euromex DZ 1605. Photographs were created with a ToupCam 14MP (ToupTek).

Body length was measured from the head to the apex of the elytra, length of pronotum in the middle, broadness on the broadest part.

### Description of new species

#### *Curelius jaegeri* nov.sp.

Type material: Holotype ♂: "Namibia, 24.XI.1993, 18°13'S/21°45'E, Kavango: Mahango Game Reserve: Piknik site, lux. leg. M. Uhlig" [NMNW, temporarily MFNB].

Paratypes: 7 ex. with the same data as the holotype [MFNB: 6 ex., NMNW: 1 ex.]; 10 ex. "Namibia, 2.-3.X.1993, 18°14'S/21°43'E, Kavango: Mahango Game Reserve, leg. F. Koch" [MFNB: 6 ex., NMNW: 1 ex., cES: 3 ex.]; 2 ex. "Namibia-Exp. ZMB 1992, E. Caprivi: 10 km SE Katima Mulilo, 17°31'S / 24°25' E, Zambezi-Altwasserarm, lux, 6.III.92, leg. M. Uhlig [MFNB]; 4 ex. "SWA / Namibia, Nyangana / Okavango, 14.-22.1.1985, leg. H. Roer" [ZMFK: 3 ex., cES: 1 ex.]; 1 ex. "RSA, KwaZulu-Natal, sw Magudu, 04.-05.01.2009, leg. P. Schüle" [SMNS].

**E t y m o l o g y** : To the honour of Bernd Jaeger, who supported my work every time.

**D e s c r i p t i o n** : Male, 1,05 mm, pale yellow-reddish. Body strongly convex, with strong but sparse puncture: on pronotum the distance like the diameter, on elytra distance is more than two diameters and puncture is more fine (fig. 1). Elytral epipleuron smooth. Eyes normal, one eye smaller than the diameter between the eyes (fig. 6). Metaventricle very sparsely punctured. Prosternal process parallel-sided, very sparsely punctured but distinct shagreened (fig. 9). No furrows for antennae next to the prosternal process developed. Legs are slender, pale. Antennae also slender and pale, 11 segmented with a 3 segmented club, segments 9, 10 and 11 slightly asymmetric, 10 and 11 jointed nearly in the middle of the previous segment (like usual in most *Curelius*).

**C o m m e n t** : Very similar to *C. japonicus* (REITTER, 1878) and distinguished by the smaller eyes (figs 5 & 6), more convex body (figs 1 & 4) and different metaventricle and prosternal process (figs 8 & 9). Quite similar to the palaearctic *C. dilutus* (REITTER, 1883), but more stout and convex, with different structures on surface of pronotum and elytra.

**D i s t r i b u t i o n** : Known from Namibia and South Africa.

#### *Curelius johnsoni* nov.sp.

Type material: Holotype ♂: "R. S. Africa, 13.-14.XI.1997, 33°59'S/22°38'E, Cape Province: Wilderness NP: car catcher, leg. M. + B. Uhlig" [TMP].

Paratypes: 22 ex. with the same data as the holotype [MFNB: 13 ex., TMP: 2 ex., SAMCT: 2 ex., MMUM: 2 ex., cES: 5 ex.]; 1 ex. "R. S. Africa, 30.XI.1996, 33°59.0'S/22°40.6'E, Cape Province: Wilderness NP: Langvlei, Malachite bird hide, Juncus krausi + bush litter sievings, leg. B. + M. Uhlig" [MFNB]; 2 ex. "R. S. Africa, 14.XI.1997, 33°59.0'S/22°40.6'E, Cape Province: Wilderness NP: Langvlei, Malachite bird hide, Juncus + bush litter + Phragmites sievings, leg. M. Uhlig" [MFNB]; 4 ex. "R. S. Africa, 3.XII.1996, 34°27.2'S/20°24.2' E Cape Prov.: De Hoop NR: De Hoop Vlei: Phragmites sievings, leg. M. + B. Uhlig" [MFNB]; 15 ex. "R. S. Africa, 17.XI.1993, 34°27'S/20°24'E, leg. Uhlig, Cape Province: De Hoop Nat. Res., lake shore, reed sievings" [MFNB: 12 ex., TMP: 1 ex., SAMCT: 1 ex.].



**Fig. 1-4:** (1) *Curelius jaegeri* nov.sp., paratype; (2) *Curelius johnsoni* nov.sp., paratype; (3) *Curelius uhligi* nov.sp., paratype; (4) *Curelius japonicus* (REITTER, 1878) from South Africa.

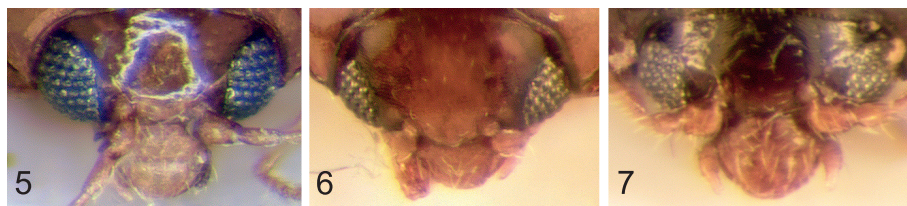


Fig. 5-7: Heads of (5) *Curelius japonicus* (REITTER, 1878), (6) *C. jaegeri* nov.sp., (7) *C. uhligi* nov.sp.

**E t y m o l o g y :** To the honour of Colin Johnson, an important worker on Cryptophagidae and the "re-discoverer" of *Curelius*.

**D e s c r i p t i o n :** Male, 1,15 mm, chestnut brown. Body convex, sparsely punctured. Elytra between puncture with skin-like shagreen, in the posterior half with longitudinal striae, puncture more obsolete (fig. 2). Elytral epipleuron smooth. Eyes normal, one eye smaller than the diameter between the eyes (like in figs 6 & 7). No furrows for antennae next to the prosternal process developed. Legs slender and pale. Antennae slender and pale, 11 segmented with a 3 segmented club, segments 9, 10 and 11 slightly asymmetric, 10 and 11 jointed nearly in the middle of the previous segment (like usual in most *Curelius*).

**C o m m e n t :** Similar in colour to *C. uhligi* nov.sp. and *Ephistemus globulus* (PAYKULL, 1798). From the latter distinguished by lacking antennal furrows, from *C. uhligi* by its typical longitudinal striae on elytra. *C. jaegeri* nov.sp. and *C. japonicus* (REITTER, 1878) lacking also the longitudinal striae and their puncture on elytra is more dense.

**D i s t r i b u t i o n :** Known from South Africa.

### ***Curelius uhligi* nov.sp.**

Type material: Holotype ♂: "R. S. Africa, 14.-16.XI.1993, 34°04'S/20°27'E, Cape Province, Bontebok NP, lux, leg. M. Uhlig" [TMP].

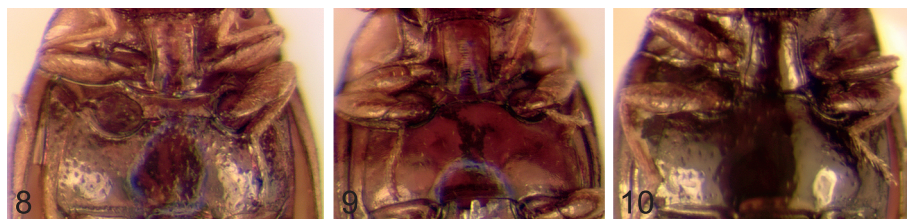
Paratypes: 7 ex. with the same data as the holotype [MFNB: 5 ex., cES: 2 ex.]; 1 ex. "R. S. Africa, 29.-30.XI.1996, 33°59'S/22°38'E, Cape Province: Wilderness NP: car catcher, leg. M. + B. Uhlig" [MFNB].

**E t y m o l o g y :** To the honour of Manfred Uhlig, who collected the specimens of the three species described in this paper and huge amount of Cryptophagidae in South Africa and Namibia.

**D e s c r i p t i o n :** Male, 1,15 mm, dark chestnut brown. Body convex, with strong but sparse puncture: distance on elytra two diameters, on pronotum more than two diameters (fig. 3). Eyes normal, one eye smaller than the diameter between the eyes (figs 7). Prosternal process triangular, with a distinct puncture (fig. 10). No furrows for antennae next to the prosternal process developed. Legs are slender, pale. Antennae pale, club darkened, 11 segmented with a 3 segmented club, segments 9, 10 and 11 slightly asymmetric, 10 and 11 jointed nearly in the middle of the previous segment (like usual in most *Curelius*).

**Comment:** Similar to *C. johnsoni* nov.sp. in colour but well distinguished in different structure of pronotum and elytra. Also similar to *C. japonicus* (REITTER, 1878) and *C. jaegeri* nov.sp. but not pale.

**Distribution:** Known from South Africa.



**Fig. 8-10:** Prosternal process and metaventrite of (8) *Curelius japonicus* (REITTER, 1878), (9) *C. jaegeri* nov.sp., (10) *C. uhligi* nov.sp.

### Key to the afroropical *Curelius* CASEY, 1900

- 1 Puncture of elytra (anterior third) wide, distance more than two diameters (fig. 2). Between the puncture skin-like shagreened, in the posterior half also with longitudinal striae, puncture obsolete (fig. 2). Chestnut brown, body convex. South Africa .....  
..... *Curelius johnsoni* nov.sp.
- Puncture of the elytra (anterior third) less wide, distance less than two diameters. Between the puncture skin-like shagreened, in posterior half without striae but puncture distinct (figs 1, 3, 4) ..... 2
- 2 Pale yellow-reddish species, body flat (figs 1, 4) ..... 3
- Dark chestnut brown species (fig. 3), eyes normal, one eye smaller than the diameter between the eyes (fig. 7). Body convex. Prosternal process triangular, with a distinct puncture. South Africa ..... *Curelius uhligi* nov.sp.
- 3 Eyes enlarged, one eye larger than the diameter between the eyes (fig. 5). Body more slender, more flat (fig. 4). Metaventrite with distinct puncture, especially near the borders. Prosternal process with concave sides, distinct punctured. Elytral epipleuron with fine but distinct puncture. Widespread in Africa .....  
..... *Curelius japonicus* (REITTER, 1878)
- Eyes normal, one eye smaller than the diameter between the eyes (fig. 6). Body more convex (fig. 1). Metaventrite very sparsely punctured. Prosternal process parallel-sided, very sparsely punctured but distinct shagreened. Elytral epipleuron smooth. Namibia .....  
..... *Curelius jaegeri* nov.sp.

### Material examined

#### *Curelius jaegeri* nov.sp.

Type material (see above).

#### *Curelius japonicus* (REITTER, 1878)

Cameroon: Likomba [Tiko] (10 ex. MFNB); Guinea: Seredou (29 ex. MFNB); Namibia: Kavango (6 ex. MFNB); Tondoro / Okavango (22 Ex. ZFMK); Nigeria: Ibadan (106 ex WIRC, cES, 7 ex. ZMK); Badeggi (33 ex. ZMH, cEs); South Africa: Vaalwater (2 ex. SMNS); Amatola (1 ex. SMNS); Wilderness NP (6 ex. MFNB); Zoutspansberg (1 ex. MFNB); Bontebok NP (1 ex.

MFNB); Sudan: El Geneina (1 ex. ZSM); Tanzania: Tarangire-National Parc (4 ex. MFNB); Kirumba (2 ex. MFNB); Togo: Anjé (2 Ex. ZMH); Zambia: Luangwa (27 ex.); Zimbabwe: Kariba (1 ex. cEs); Victoria Falls (1 ex. MFNB). Further, non-proofed records see (LYUBARSKY 1999, 2011). Pantropical species (OTERO et al. 1989).

***Curelius johnsoni* nov.sp.**

Type material (see above).

***Curelius uhligi* nov.sp.**

Type material (see above).

***Ephistemus globulus* (PAYKULL, 1798)**

South Africa: Cape Province (55 Ex. MFNB)

**Remarks to the distribution of *Curelius* in the Afrotropical Region**

*Curelius japonicus* (REITTER, 1878) was described from Japan (ESSER 2014) and widespread in tropical and subtropical areas of all zoogeographic regions. The fact that *C. japonicus* was described from Japan is no evidence for its origin from the East Palaearctic. Other species of *Curelius* were described from other parts of the Palaearctic Region: *C. dilutus* (REITTER, 1883), *C. exiguus* (ERICHSON, 1846). So far, no species was described from the Afrotropical Region. It is not provable that *C. jaegeri*, *C. johnsoni* and *C. uhligi* are originally afrotropical species. But their small-sized distribution may be a hint for their origin from the Afrotropical Region respectively southern Africa.

**Acknowledgement**

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**Zusammenfassung**

Aus dem südlichen Afrika werden drei neue Arten der Gattung *Curelius* CASEY, 1900 beschrieben. Weiterhin werden Funddaten von *Curelius japonicus* (REITTER, 1878) und *Ephistemus globulus* (PAYKULL, 1798) aus der Afrotropis mitgeteilt.

**References**

ESSER J. (2014): Type catalogue of the mould beetles (Coleoptera: Cryptophagidae) preserved in the Museum für Naturkunde in Berlin, with notes on systematic and taxonomy. — Entomologische Blätter **110**: 39-66.

