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Notes on Indian Heteroceridae (Coleoptera), with description of *Augyles pucholti* sp. n.

Poznámky k indickým druhům čeledi Heteroceridae (Coleoptera) s popisem *Augyles pucholti* sp. n.

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Abstract. *Augyles pucholti* sp. n. from India is described, figured and compared with *A. feai* (Grouvelle, 1896) and *A. grohmanni* (Mascagni, 1987). The following species are reported from India for the first time: *Heterocerus fulvipes* Miller, 1995, *H. jelineki* Skalický, 1998, *H. mus* Charpentier, 1965, *H. philippensis thieleni* Mascagni, 1993, *Augyles grohmanni* (Mascagni, 1987) and *A. hiekei* (Mascagni, 1995).

Three genera and 25 species of heterocerid beetles have recently been listed from India (Mascagni 1999). The present paper summarizes additional data on Indian Heteroceridae coming from several private and institutional collections (see below). The material contains 10 species, among them one new to science. Moreover, six of the known species were not given by Mascagni (1999) and are new for India. The new species, *Augyles pucholti* sp. n., is described below together with faunistic notes on the other nine species. The present paper rises the number of Heteroceridae known from India to 32 species in three genera.

The material is deposited in the following institutions and private collections: CSU - coll. Stanislav Skalický, Ústí nad Orlicí (Czech Republic); CPU - coll. Pavel Pucholt, Unhošť (Czech Republic); CMS - coll. Alessandro Mascagni, Scandicci (Italy); NMW - Naturhistorisches Museum, Wien; HMB - Hungarian Museum of Natural History, Budapest.

Augyles pucholti sp. n.

Type material. Holotype ♂ (CSU): "India, Rajastahan, Mandawa, 1.i.1997, P. Pucholt lgt.". Allotype ♀ (CSU): same data as holotype. Paratypes: 68 ♂♂, 62 ♀♀, same data as holotype (CSU: 52 ♂♂, 47 ♀♀, CPU: 5 ♂♂, 5 ♀♀, CMS: 1 ♂, 1 ♀); 10 ♂♂, 9 ♀♀, "India, Agra, 28.ix.1997, P. Pucholt lgt." (CSU).

Description. Holotype male: length of body 3.6 mm; elytra 2.1 mm long, 1.4 mm wide across shoulders. Ground colour umber; elytra without design; head including mouthparts and eyes black to brown, lateral mandibular margins being darkest. Labrum almost square; laterally densely setose. Mandibles without lateral tooth, internal margin of each mandible with two teeth. Antennae 11-segmented, with 7-segmented terminal club; antennomeres 1 and 2 with sparse, long, erect setae. Clypeus without a pair of anterior horns, anterior margin broadly emarginate, with dense and short setae. Pronotum as wide as elytra across shoulders, almost oblong; finely granulate; pronotal base completely rimmed; surface of the disc with dense, adpressed, yellowish setae, lateral margins with long, erect setae. Scutellum (Fig. 1) triangular. Elytra without longitu-

dinal ridges, finely granulate with irregular punctatiton; setae consisting of two types, with short, yellowish, adpressed, densely set ones and erected, long and thin, sparsely set ones. Epipleural ridges not developed. Tibiae densely setose, protibia with 11 stout spines along the lateral margin and 2 little caudo-apical spines, mesotibia with 10 and metatibia with 9 weak spines. Tranverse ridge of the mesosternum U-shaped. Metasternum with post-mesocoxal ridge. Stridulatory arch on abdomen marked, abdomen with sparse, long setae. Post-metacoxal line present. Spiculum gastrale (Figs 2, 3) 0.9 mm long, deflected, V-shaped, base distinctly broadened. Aedeagus (Figs 4, 5) 0.8 mm long, heavily sclerotized, brown-coloured. Parameres strong, right paramere prolonged and curved up. Supporting sheath posteriorly excised, without distinct border. Penis without processus accessorius, with internal sac, right margin with two lines of soft teeth. Male genitalia examined in 32 specimens.

Allotype female: length of body 3.85 mm; elytra 2.3 mm long, 1.5 mm wide across shoulders. Externally similar to male except more robust body and less developed mandibles.

Differential diagnosis. *Augyles pucholti* sp. n. is probably related to *A. feai* (Grouvelle, 1896) known from Burma, India, Nepal and Sri Lanka (Mascagni 1999) and to *A. grohmanni* (Mascagni, 1987) from Burma and Nepal (Mascagni 1987, Skalický 1998a) due to the overall structure of male genitalia. Genitalically, *A. pucholti* sp. n. differs from the latter two species in a number of details of the structure of the aedeagus (in *A. feai* and *A. grohmanni*, the right paramere is not prolonged and curved up, supporting sheath is distinctly bordered and not excised, and penis lacks two lines of soft teeth, see figs 2 and 3 in Mascagni (1991)), in the basally broadened spiculum gastrale, and in the darker coloration and different elytral pattern (cf. Mascagni 1991). Moreover, the tibial spine formula (= number of spines on the pro-, meso- and metatibia, respectively) of *A. pucholti* sp. n. (11[+2]-10-9) differs from that of *A. feai* (11-9-8) and *A. grohmanni* (10-7-8).

Distribution. So far known only from two localities in Rajasthan and Uttar Pradesh in northwestern India.

Variability. Length of body ♂♂ 3.1 to 3.6 mm, ♀♀ 3.6 to 4.1 mm; width across shoulders ♂♂ 1.2 to 1.4 mm, ♀♀ 1.3 to 1.6 mm.

48 specimens with distinctly pentagonal scutellum (Fig. 7). Numerous specimens with indistinct dark design on elytra as in Fig. 6. A few specimens have brown to black colour of the body without design. In this case, the pubescence is strongly reduced with a sparse appearance (the pubescence of the specimens is not probably "worn-out").

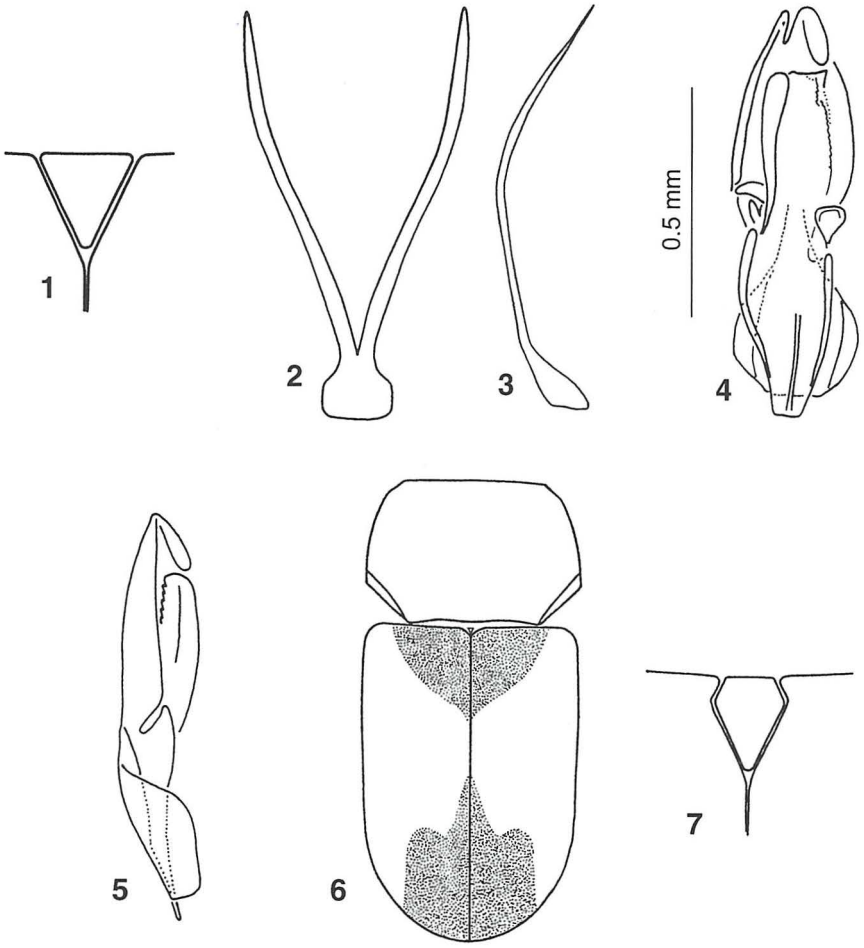
Collection circumstances. The specimens were collected at light (vacuum tube Philips 160 W) in two similar localities between 8-11 p.m. The distance between the two localities is about 300 km. The collections were made about one month after the end of the monsoon. The day temperature was about 28-30° C, the night temperature 18-20° C. Mandawa is a typical semi-desert locality (argillaceous sand) with a sparse vegetation cover. The nearest larger water source is the river Katli about 40 km away from the locality. The specimens from Agra (the surrounding countryside is very similar to that of Mandawa) were collected in a hotel garden including a small pond. The nearest large water source is the river Yamuna, about 4 km away from the locality (P. Pucholt, pers. comm.).

Derivatio nominis. I name this species after Pavel Pucholt (Unhošť, Czech Republic) who collected the type material.

Distributional notes

Heterocerus fulvipes Miller, 1995

Material examined. "India, Goa, Molem, 15.-24.ii.1980, at light, Gy. Topál lgt." 32 spec. (HMB); "India, Orissa, Konarak, 25.xii.1966, No. 59, collected in lamp, Gy. Topál lgt." 8 spec. (HMB); "India, Karnataka, Shimoga Distr., Jog Falls, 500 m, 2.-8.iii.1980, at light, Gy. Topál



Figs 1-7. 1-5: *Augyles pucholti* sp. n., holotype: 1 - scutellum, dorsal view; 2 - spiculum gastrale, dorsal view; 3 - same, lateral view; 4 - aedeagus, dorsal view; 5 - same, lateral view. 6-7: *Augyles pucholti* sp. n., paratype: 6 - pronotum and elytra, dorsal view; 7 - scutellum, aberrant shape, dorsal view. Figs 1, 6-7 not to scale.

Obr. 1-7. 1-5: *Augyles pucholti* sp. n., holotypus: 1 - scutellum, pohled svrchu; 2 - spiculum gastrale, pohled svrchu; 3 - dtto, boční pohled; 4 - aedeagus, pohled svrchu; 5 - dtto, boční pohled. 6-7: *Augyles pucholti* sp. n., paratypus: 6 - štít a krovky, pohled svrchu; 7 - štítek, odlišný tvar, pohled svrchu. Obr. 1, 6-7 bez měřítka.

lgt." 10 spec. (HMB); "India, W. Bengal, Calcutta, 15.-24.xi.1966, No. 1, 4, 12, at light, Gy. Topál lgt." 3 spec. (HMB); "India, W. Bengal, Calcutta, Russel Street, II floor, 9.-10.vi.1980, at light, Gy. Topál lgt." 1 spec. (HMB); "India, W. Bengal, Nalbani N. Salt Lake, 2.xii.1966, No. 20, trodden from mud, Gy. Topál lgt." 1 spec. (HMB); "India, W. Bengal, 24 Pargans Distr. S. Salt Lake, 17.i.1967, No. 153, at dusk, Gy. Topál lgt." 1 spec. (HMB); "India, W. Bengal, Kakdwip, 10.i.1980, at light, Gy. Topál lgt." 2 spec. (HMB).
Distribution. Nepal (Mascagni 1995). New species for India.

Heterocerus jelineki Skalický, 1998
Material examined. "India, Kerala, Anaimalai Hills, at few km from Sirvani, 1100 m, 27.ii.1980, trodden from mud, Gy. Topál lgt." 3 spec. (HMB); "India, Goa Molem, 15.-24.ii.1980, at light, Gy. Topál lgt." 2 spec. (HMB).
Distribution. Iran (Skalický 1998b). New species for India.

Heterocerus lorenzevae Mascagni, 1993
Material examined. "India, Rajastahan, Mandawa, 1.i.1997, P. Pucholt lgt." 18 spec. (CSU), 2 spec. (CPU).
Distribution. Bangladesh, India, Thailand (Mascagni 1999).

Heterocerus mus Charpentier, 1965
Material examined. "India, Rajastahan, Mandawa, 1.i.1997, P. Pucholt lgt." 46 spec. (CSU), 10 spec. (CPU).
Distribution. Chad (Charpentier 1965), Iran (Skalický 1998a). New species for India.

Heterocerus nepalensis Mascagni, 1993
Material examined. "India, Rajastahan, Mandawa, 1.i.1997, P. Pucholt lgt." 86 spec. (CSU), 10 spec. (CPU).
Distribution. Burma, China, India, Indonesia (Sumatra), Nepal, Thailand, Vietnam (Mascagni 1999).

Heterocerus philippensis thieleni Mascagni, 1993
Material examined. "India bor., Uttar Pradesh, Kotdwara env. 3.-8.viii.1994, M. Snížek lgt." 1 spec. (CSU); "India, W. Bengal, Calcutta, 15-16.xi.1966, No. 1, 2, at light, Gy. Topál lgt." 2 spec. (HMB); "India, W. Bengal, Calcutta, 17.-23.ii.1967, No. 209, at light, Gy. Topál lgt." 1 spec. (HMB); "India, Orissa, Konarak, 25.xii.1966, No. 59, at light, Gy. Topál lgt." 1 spec. (HMB); "India, Orissa, Jajpur-Keonjahr, Distr. Daitari, 1967, No. 987, Gy. Topál lgt." 1 spec. (HMB).
Distribution. Thailand (Mascagni 1995). New species for India.

Augyles grohmanni (Mascagni, 1987)
Material examined. "India, Agra, 28.ix.1997, P. Pucholt lgt." 15 spec. (CSU), 2 spec. (CPU); "India bor., Uttar Pradesh, Kotdwara env. 3.-8.viii.1994, M. Snížek lgt." 3 spec. (CSU).
Distribution. Burma (Mascagni 1995), Nepal (Skalický 1998b). New species for India.

Augyles hiekei (Mascagni, 1995)

Material examined. "India, W. Bengal, Singur, 26.x.1967, at light, Gy. Topál lgt." 1 spec. (HMB).

Distribution. Vietnam (Mascagni 1995). New species for India.

Augyles manfredjaechi (Mascagni, 1995)

Material examined. "India, Gola Molem, 15.-24.ii.1980, at light, Gy. Topál lgt." 1 spec. (HMB); "NE-India, Meghalaya, W Garo Hills, Bagmara, ca 100 m, 25°11.5'N, 90°38.5'E, 19.-21.v.1996, Jendek & Sausa lgt." 2 spec. (NMW).

Distribution. Bangladesh, Burma, China, India, Nepal (Mascagni 1999).

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SOUHRN

Na základě studia materiálu čeledi Heteroceridae (Coleoptera) ze sběrů P. Pucholta je v této práci popsán druh *Augyles pucholti* sp. n. z Indie. Tento nový druh je pravděpodobně příbuzný druhům *A. feai* (Grouvelle, 1896) a *A. grohmanni* (Mascagni, 1987), od kterých se odlišuje především strukturou aedeagu a spicula gastrale, počtem trnů na holeních, dále pak barvou těla a rozmístěním a barvou skvrn na krovkách. Nový druh je pojmenován k poctě nálezce, Pavla Pucholta (Unhošť).

Práce dále uvádí faunistické záznamy o dalších 9 druzích z území Indie, založené na studiu materiálu z několika soukromých a muzejních sbírek. Taxony *Heterocerus fulvipes* Miller, 1995, *H. jelineki* Skalický, 1998, *H. mus* Charpentier, 1965, *H. philippensis thieleni* Mascagni, 1993, *Augyles grohmanni* (Mascagni, 1987) a *A. hiekei* (Mascagni, 1995) jsou zde hlášeny z Indie poprvé. Celkem je nyní z Indie známo (viz též Mascagni 1999) 32 druhů čeledi Heteroceridae zastoupených ve 3 rodech.