

***Galbella (Galbella) holzschuhi* sp. nov. from Iran**
(Coleoptera: Buprestidae)

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Abstract. *Galbella (Galbella) holzschuhi* sp. nov. from Iran is described, illustrated and compared with its Eastern Mediterranean congener, *G. felix* (Marseul, 1866). A checklist of Western Palaearctic species of *Galbella* Westwood, 1848 is provided.

Taxonomy, new species, checklist, Coleoptera, Buprestidae, Galbella, Iran, Palaearctic region

INTRODUCTION

The genus *Galbella* Westwood, 1848 is one of the most enigmatic buprestid taxa whose taxonomic position and relations are still disputable (see history and discussions in BELLAMY & HOLM 1986; BELLAMY 2000; VOLKOVITSH & BÍLÝ 2001; BELLAMY 2003). Originally it was placed in Trachysini (e.g. MARSEUL 1866; KERREMANS 1892; OBENBERGER 1937), most recently as a subtribe Galbellina (HOLYŇSKI 1993; BELLAMY 2000) based mainly on its trachysine habitus and partial resemblance to *Pachyschelus* Solier, 1833. Another concept is a separation of *Galbella* as a distinct monogeneric subfamily (REITTER 1911; BELLAMY 1985; COBOS 1986; VOLKOVITSH 2001; VOLKOVITSH & BÍLÝ 2001; BELLAMY 2003; BÍLÝ et al. 2006). Based on cladistic analysis KOLIBÁČ (2000) attributed to Galbellinae the polycestine tribe Haplostethini (Mastogeniini) and the trachysine genera *Leiopleura* Deyrolle, 1865, *Pachyschelus*, *Brachys* Dejean, 1833, and their relatives. Though the subfamilial level of Galbellinae is now a prevalent viewpoint, its relation to polycestine-buprestine (VOLKOVITSH 2001; VOLKOVITSH & BÍLÝ 2001) or agriline (KOLIBÁČ 2000) lineages invites further investigations.

The Palaearctic fauna of *Galbella* is rather poor compared to that of Old World tropical regions - only six species has been recorded so far (BÍLÝ et al. 2006) of which four species seem to reach the Palaearctic from the Afrotropical region. By this reason, the discovery of a new species in Iran is of great interest for buprestid taxonomy and biogeography. Further findings may be easily predicted from South Eastern Palaearctic (Yunnan), either endemic for this area or reaching from the species-rich Oriental region.

Acronyms and abbreviations used throughout the text:

CHCV	private collection of Carolus Holzschuh, Villach, Austria;
DBCR	private collection of Daniele Baiocchi, Rome, Italy;
NMPC	National Museum, Prague, Czech Republic;
VKCB	private collection of Vítězslav Kubáň, Brno, Czech Republic;
ZIN	Zoological Institute, Russian Academy of Sciences, St. Petersburg, Russia.

Measurements and ratios: L – body length; S – body maximal width; L/W – body length/width ratio; L/Wel – elytra length/width ratio; W/Lprn – pronotum width /length ratio; W/

Lprs – width between the distal ends of antennal grooves to central length of prosternum; Wf/Wv – width of frons at antennal fossae level/width at vertex ratio; Wv/Wo – width at vertex/width of eye ratio; Lant/Ho – antennal length/height of eye ratio.

TAXONOMIC PART

Subfamily Galbellinae Reitter, 1911

Genus *Galbella* Westwood, 1848

Galbella Westwood, 1848: 83.

Type species: *Galbella violacea* Westwood, 1848 (by monotypy).

According to BELLAMY (2003) the genus comprises three subgenera and 83 species distributed in the Afrotropical (including Madagascar), Oriental, and Palaearctic regions. Afrotropical species were revised by BELLAMY & HOLM (1986) and BELLAMY (2000); HOLYŃSKI (1985) synonymised 17 specific and infraspecific names of Asian *Galbella* under the type species name which is highly debatable (BELLAMY 2000).

Galbella (Galbella) holzschuhi sp. nov.

(Figs. 1-6, 13-18, 22-24, 28-29)

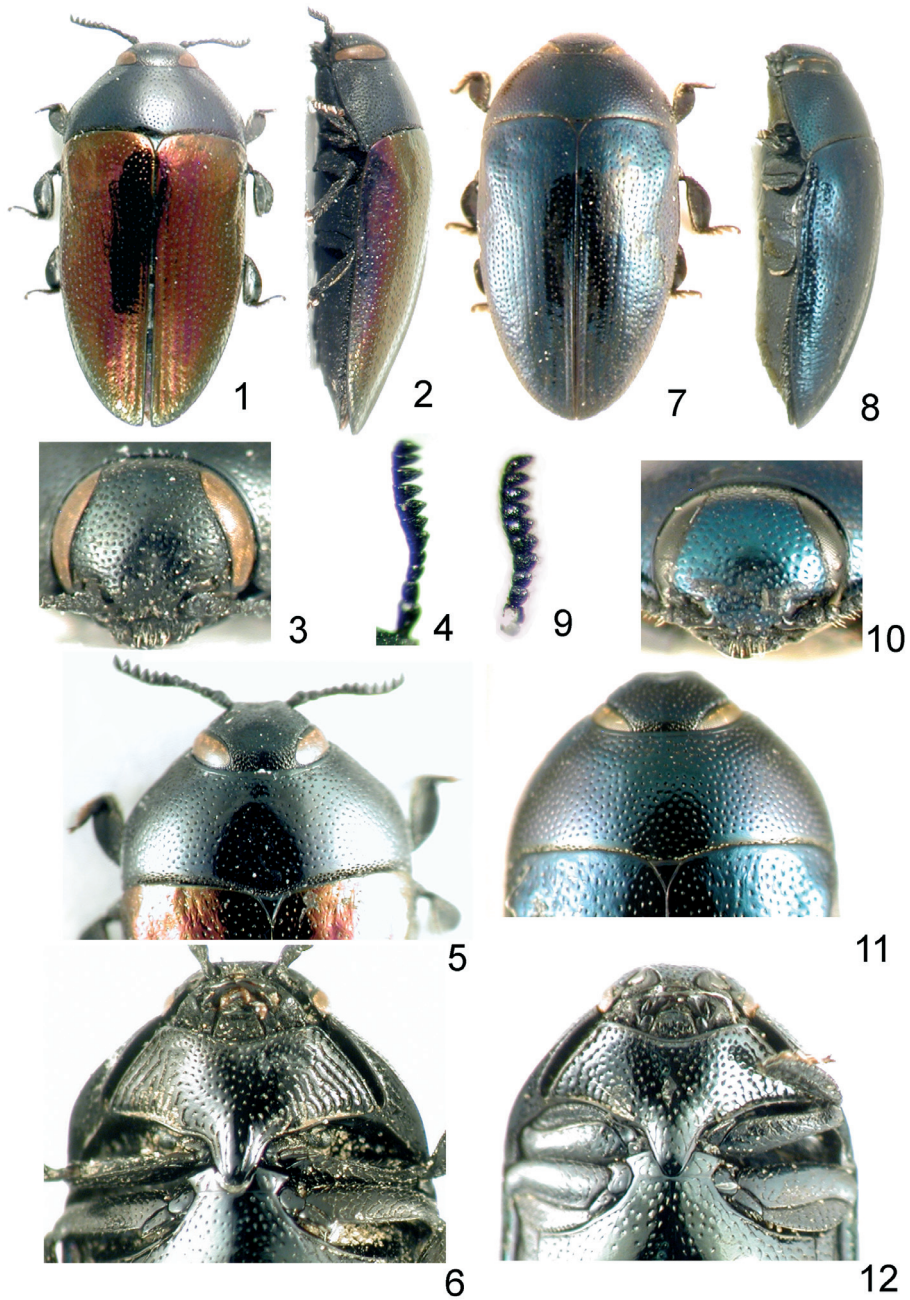
Type locality: Central Iran, Yazd, 40 km southwest of Harat, Baqe-Shadi [= Bare-Shadi, 29°48'N 54°18'E], 2100 m.

Type specimens. Holotype ♀ (CHCV): “Iran, Yasd, 40 km SW Harat, Bare-Shadi, 2100 m, 2-3.VII.2004, leg. C. Holzschuh”.

Paratypes (3 ♂♂, 8 ♀♀): same label (1 ♂, 7 ♀♀, CHCV, ZIN) [all specimens were beaten from the foliage of *Pistacia* trees]; “Iran, Fârs, 40 km N Fasa, Mian Jangal, 1750 m, 29°10'N-53°23'E, 15.IV.2007, Baiocchi leg. // ex larva *Pistacia* sp. 15 May 2007” (2 ♂♂, 1 ♀, DBCR, NMPC).

Description. Body (Figs. 1-2, 13) small, trachysine, elongate oval, subparallel, convex with defined dorsal curvature; L: 4.3-5.6 (5.0) mm, W: 2.0-2.7 (2.4) mm, L/W: 2.04-2.15 (2.10) (n = 9); bicolorous: head, pronotum, body ventrally, and appendages black with dull bluish reflection, scutellum blackish-blue, elytra bright, metallic purple, purple-violet or golden-purple, here and there with blue, violet or golden reflection, basal, lateral, and sutural margins and apices golden; dorsally glabrous, head with short inconspicuous pale setae, ventrally with short sparse pale setae, abdominal sternite 2 with medial setal patch at anterior margin (Figs. 13-14).

Head (Figs. 1-3, 5-6) weakly convex as viewed from above (Fig. 1), angularly produced with straight or slightly concave anterior margin when seen at an angle (Fig. 5); Wv/Wo: 1.79-2.10 (1.97), Wf/Wv: 1.52-1.64 (1.61). Eyes large, dorsolaterally situated, slightly projecting beyond head outline (Figs. 1, 5), narrowly ovate as viewed from the side (Fig. 2). Vertex regularly convex with smooth, sometimes finely elevated medial line. Frons regularly convex, with small shallow medial fovea at anterior third and transverse depression above the clypeus frequently merged with frontal one forming single triangular depression; with sides markedly S-shaped and converging strongly to vertex (Fig. 3); anterior margin forming



Figs. 1-12. 1-6: *Galbella (Galbella) holzschuhi* sp. nov., paratype ♀, 5.2 mm. 1 – dorsal view; 2 – lateral view; 3 – head, frontal view; 4 – left antenna; 5 – head and pronotum, dorsal view; 6 – pro- and mesosternum, ventral view. 7-12: *G. (G.) felix* (Marseul), ♀, 5.4 mm. 7 – dorsal view; 8 – lateral view; 9 – left antenna; 10 – head, frontal view; 11 – head and pronotum, dorsal view; 12 – pro- and mesosternum, ventral view.

smoothed ledge above the clypeus. Frons with sculpture ocellate, denser at sides, vertex with sculpture reticulate formed by round, superficial, partly obliterated (horseshoe-shaped) umbilicate punctures with fine eccentric micropunctures bearing very fine inconspicuous pale setae shorter than diameter of punctures; intervals smooth or feebly shagreened, 0.5-1.5 times as wide as diameter of punctures. Clypeus very narrow, feebly emargined anteriorly, with lateral projections narrow and forming ventral margins of deep antennal grooves situated just beneath ventral margins of eyes and met prosternal antennal grooves (Fig. 6). Antennae (Fig. 4) relatively long, Lant/Ho: 1.57-1.73 (1.67), serrated from antennomere 5; antennomere 1 weakly curved, strongly expanded apically; antennomere 2 ovate, slightly longer than wide, less expanded than the apex of previous one; 3-4 similar, trapezoid, nearly as long as wide; antennomere 5 markedly widened, roundly triangular, scarcely wider than long; 6-10 triangular, strongly transverse, 1.8-2.2 times as wide as long; 11 foliaceous, narrow, 1.7 times as wide as long.

Pronotum (Figs. 1-2, 5) transverse, W/Lprn: 2.35-2.56 (2.46), widest at base; evenly convex, without basal fossae and medial depression; sides irregularly rounded; anterior margin weakly bisinuose, nearly straight, bordered with fine sulcus; basal margin slightly bisinuose, with poorly defined medial lobe and acute postero-lateral corners. Lateral carina distinct, entire, nearly straight, reaching anterior corners, bordered with narrow longitudinal depression along entire length. Pronotal sides with reticulate sculpture of partly obliterated umbilicate punctures forming inconspicuous concentric series; disc laterally with stronger obliterated and smaller punctures; disc medially with simple sparse punctate sculpture of micropunctures on smooth shining background, intervals between punctures 3-4 times as wide as diameter of puncture (Fig. 5); pronotal base with 2-3 rows of distinct, transversely ovate punctures; surface glabrous. Scutellum (Figs. 1, 5) blackish-blue, nearly equilateral triangular, with angles acute. Prosternum (Figs. 6, 13) flattened, transverse, W/Lprs: 1.91 (n = 1); typical for *Galbella* species – with notopleural sutures completely lacking (these possibly form internal margin of antennal grooves), grooves for reception antennae deep, feebly arcuate; anterior margin deeply arcuately emarginated, bordered with fine sulcus; prosternal process triangular with rounded apex, slightly convex; prosternal sides with ca. 9 distinct concentric striae across entire base, parallel to and progressively longer approaching antennal grooves; prosternal disc medially with obliterated sparse umbilicate punctures; prosternal process with 2-3 punctate striae laterally and a few umbilicate punctures medially. Hypomeron rather sharply expanded basad from anterior corners, distinctly expanded at basal portion. Mesosternum completely divided in the middle, lateral portions of ventrite transverse with acute external corners. Metasternum wide, with anterior process broad and truncate apically, covered with sparse fine punctures; longitudinal suture absent, transverse suture barely visible.

Elytra (Figs. 1-2) short, wide, L/Wel: 1.56-1.64 (1.59); bright, metallic purple, purple-violet or golden-purple, here and there with blue, violet or golden reflection, basal, lateral, and sutural margins and apical 1/3 laterally golden; regularly convex, with poorly defined but visible humeral swellings; sides slightly diverging at humeri, subparallel as far as midlength and then evenly, arcuately converging to regularly rounded, barely diverging apices; lateral margins smooth, without serration. Epipleuron (Fig. 13) narrow, depressed longitudinally, bearing one row of punctures, separated from elytra by sharp carina bordered with narrow



Figs. 13-21. 13-18: *Galbella (Galbella) holzschuhi* sp. nov., paratype ♀, 5.1 mm. 13 – ventral view; 14 – abdominal sternites 1-2; 15 – abdominal sternites 4-5; 16 – fore leg; 17 – middle leg; 18 – hind leg. 19-21: *G. (G.) felix* (Marseul), ♀, 4.7 mm. 19 – ventral view; 20 – abdominal sternites 1-2; 21 – abdominal sternites 4-5.

premarginal depression, shifted ventrally, extending beyond hind coxae. Elytral striae relatively distinct, forming by golden superficial punctures with delicate micropunctures inside; 1st stria slightly impressed at posterior 2/3 of elytral length, 2nd and 3rd striae sometimes shortly impressed at posterior 1/3. Intervals glabrous, flat, sutural one slightly elevated at posterior 2/3, 5-7 times as wide as striae, with regularly uniseriate golden punctures similar to strial ones; punctures at posterior 1/3 partly obliterated, horseshoe-shaped, forming indistinct curved transverse series; lateral intervals with smoothed transverse rugosity.

Legs (Figs. 1, 13, 16-18) inserted within deep thoracic and abdominal depressions being tightly pressed against body in repose; black, sometimes with bluish sheen. Metacoxal plates (Figs. 13-14) distinctly widened sideward forming acute postero-lateral angle concealed by elytral epipleuron; posterior margin slightly emarginated. Tibiae (Figs. 16-18) strongly expanded and flattened, with deep longitudinal depressions to receive tarsi (Fig. 16); fore and middle tibiae with regularly serrate external margins (Figs. 16-17), hind tibia bearing comb of yellowish setae externally (Fig. 18); apical spurs of different length. Tarsi with pulvilli well developed on tarsomeres 1-4; 5th as long as four basal tarsomeres jointly, slightly expanded apically; Claws big and with large, broad, acute tooth on inner margin in both sexes.

Abdomen (Figs. 13-15) black with dull bluish sheen, bearing very short, sparse, decumbent, pale setae; suture between 1st and 2nd sternites represented by smooth line slightly projecting anteriorly, sutures between other sternites straight in the middle and sharply curved laterally, postero-lateral angles forming acute teeth. Sternite 2 with transverse medial setal patch forming by dense yellowish setae (Figs. 13-14) arising from arcuate or, rarely, brace-shaped transverse stria at anterior margin. Sides and discs of sternites 2-5 with umbilicate and horseshoe-shaped punctures, forming very fine longitudinal reticulate-striate sculpture with inner micropunctures (Figs. 13-14) on sternite 1 and delicate marginal concentric striae on sternite 5 (Fig. 15). Anal (5) sternite transverse with slightly upturned smooth apical margin, regularly serrate at sides and smooth at middle, with apex scarcely angularly projecting but not forming distinct tooth.

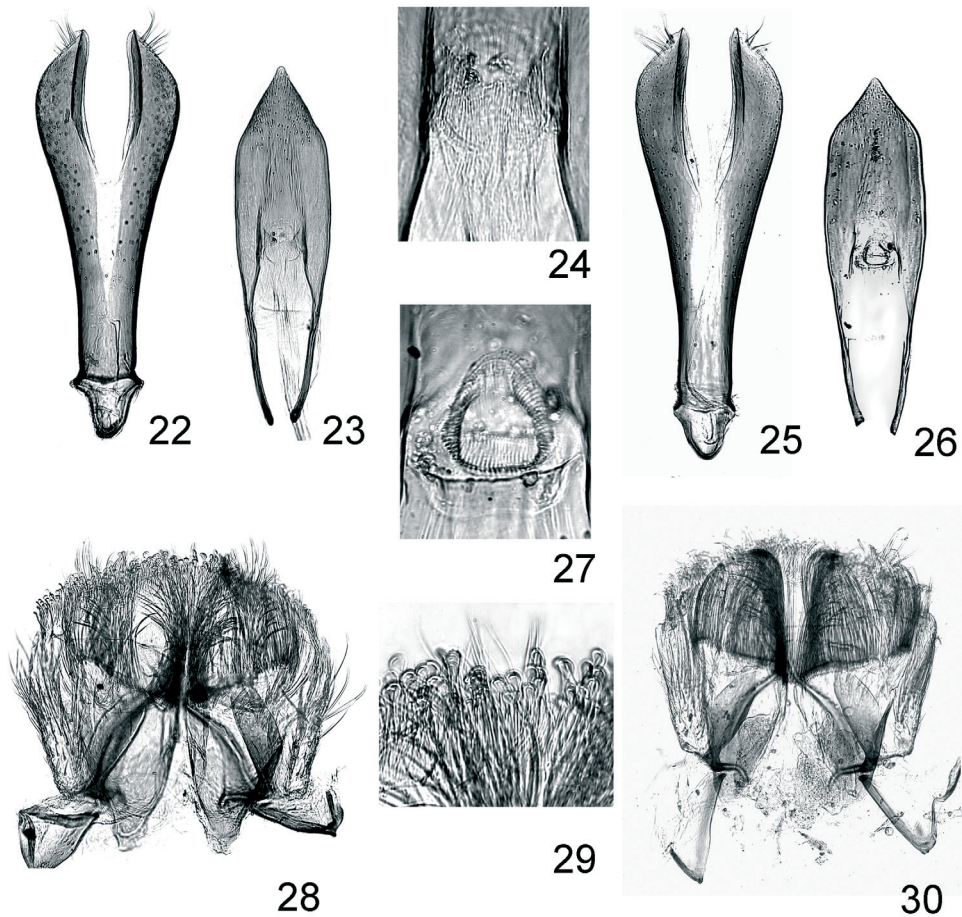
Male. Aedeagus (Figs. 22-24) relatively short; parameres strongly expanded toward anterior 1/3, with acute apices bearing groups of long setae externally, basal piece with short roundly-triangle ventral lobe and without distinct dorsal one; penis (Fig. 23) with elongate acute apex, internal sac bearing weakly sclerotized flagellum inside situated at the middle of its length (Figs. 23-24), basal processes (apophyses) well defined, slender, slightly curved.

Ovipositor (Figs. 28-29) uritiforme, strongly modified; styli large, weakly sclerotized and poorly visible behind long setae, distinctly expanded apically and bearing there long, dense, straight setae; ovipositor ventrally bearing row of very long dense setae with scoop-like tips (Fig. 29); lateral lobes with long dense normal setae.

Dimorphism. Not found.

Distribution. Central and southwestern Iran (Yazd, Fars).

Differential diagnosis. From all other *Galbella* species *G. holzschuhi* sp. nov. differs by sharply bicolorous body with elytra brightly metallic purple. The new species comes closest to the Eastern-Mediterranean *G. felix* (Marseul, 1866) in having metallic coloured elytra, very similar shape and disposition of the setal patch on abdominal sternite 2, longitudinal reticulate-striate sculpture on sternite 1, shape and sculpture of sternite 5, as well as male and female genital structures; both species are contrasted in Table 1.



Figs. 22-30. 22-24: *Galbella (Galbella) holzschuhi* sp. nov., male genitalia, paratype ♂. 22 – tegmen (0.9 mm); 23 – penis (0.65 mm); 24 – internal sac of penis. 28, 29: the same, female genitalia, paratype. 28 – ovipositor (0.6 mm); 29 – scoop-like setae on anterior margin of ovipositor. 25-27: *G. (G.) felix* (Marseul), male genitalia. 25 – tegmen (1.05 mm); 26 – penis (0.6 mm); 27 – internal sac of penis. 30: the same, female genitalia, ovipositor (0.8 mm).

Table 1. Diagnostic differences between *Galbella (Galbella) holzschuhi* sp. nov. and *G. (G.) felix*

Character	<i>G. (G.) holzschuhi</i> sp. nov.	<i>G. (G.) felix</i>
Body, coloration	Bicolorous: black, elytra brightly purple with violet and golden sheen	Unicolorous, brightly blue
Body, size: L	4.3-5.6 (5.0) (n = 9)	3.9-5.4 (4.4) (n = 10)
W	2.0-2.7 (2.4)	1.9-2.6 (2.2)

Ratios: L/W	2.04-2.15 (2.10)	1.90-2.08 (1.99)
L/Wel	1.56-1.64 (1.59)	1.51-1.60 (1.57)
W/Lprn	2.35-2.56 (2.46)	2.22-2.80 (2.55)
W/Lprs	1.91 (n = 1)	2.02 (n = 1)
Wf/Wv	1.52-1.67 (1.61)	1.65-2.07 (1.80)
Wv/Wo	1.79-2.10 (1.97)	1.76-2.13 (1.94)
Lant/Ho	1.57-1.73 (1.67)	1.48-1.74 (1.62)
Frons, lateral sides	Markedly S-shaped (Fig. 3)	Slightly arcuate (Fig. 10)
Head, sculpture	Fine, superficial, dense punctures; intervals scarcely as wide as diameter of puncture (Fig. 3)	Large, coarse, sparse punctures; intervals at least twice wider than diameter of puncture (Fig. 10)
Pronotal sides	Irregularly rounded (Fig. 5)	Regularly rounded (Fig. 11)
Pronotal disc, sculpture	With fine sparse punctures, intervals 3-4 times as wide as diameter of puncture (Fig. 5)	With coarse dense punctures, intervals 1/5-2 times as wide as diameter of puncture (Fig. 11)
Prosternal sides, sculpture	With ca. 9 distinct concentric striae across entire base (Fig. 6)	With ca. 6 poorly marked concentric striae across lateral part of base (Fig. 12)
Hypomeron, shape	Rather sharply expanded basad from anterior corners, distinctly expanded in basal portion (Fig. 6)	Weakly expanded basad from anterior corners, slightly expanded in basal portion (Fig. 12)
Setal patch on abdominal sternite 2	Formed by very dense setae, situated closer to anterior margin (Figs. 13-14)	Formed by sparse setae, situated nearly at the mid-length (Figs. 19-20)
Sternite 5, apical margin	Angularly projecting, with indistinct tooth (Fig. 15)	Arcuately projecting or truncate (Fig. 21)
Aedeagus	As in Figs. 22-24*)	As in Figs. 25-27*)
Ovipositor	As in Fig. 28	As in Fig. 30

*) The difference in internal sac structures on Figs. 24 and 27 can be resulted from artifact; it is quite possible that in the single studied male of *G. felix* the portion of internal sac bearing flagellum is upturned (Fig. 27).

Galbella (Galbella) felix (Marseul, 1866)

(Figs. 7-12, 19-21, 25-27, 30)

Janthe felix Marseul, 1866: 504.

Specimens studied. GREECE, Rhodes island: Pefki, Lindos env., 27.vi.-2.vii.2007, K. Orszulik leg. (1 specimen, VKCB); 3 km E of Arhangelos, Stegna, 36°12'N 28°08'E, 23.v.-2.vi.2006, R. & H. Fouquè leg. (1 ♀, VKCB). TURKEY W, Çanakkale vil., 10 km S of Ayvacık, Behramkale: "Assoz", coast, 19.-24.vii.1991, V. Kubán leg. (2 specimens, VKCB).

Distribution. Cyprus, Israel, Jordan, Lebanon, Syria, Turkey (Bílý et al. 2006), Greece (Rhodes). New records for Greece and Western Turkey.

CHECKLIST OF PALAEARCTIC SPECIES OF *GALBELLA*

(Distribution by Bílý et al. (2006) and present study.)

G. (G.) acaciae Descarpentries & Mateu, 1965 Algeria; Afrotropical

Host plant: *Acacia raddiana* (Savi) Brenan (Fabales: Fabaceae) (MATEU 1972;

VOLKOVITSH & BÍLÝ 2001)

Larval description: MATEU (1972), COBOS (1986), VOLKOVITSH & BÍLÝ (2001)

- G. (G.) atricolor* Abeille de Perrin, 1907 Yemen; Afrotropical
G. (G.) ennediana Descarpentries & Mateu, 1965 Oman, Yemen; Afrotropical
G. (G.) felix (Marseul, 1866) (*Janthe*) Cyprus, Greece (Rhodes), Israel, Jordan,
Lebanon, Syria, Turkey
= *G. (G.) felicissima* Abeille de Perrin, 1897
Host plant: *Phillyrea latifolia* L. (Oleales: Oleaceae) (VOLKOVITSH & BÍLÝ 2001)
Larval description: VOLKOVITSH & BÍLÝ (2001)
- G. (G.) harti* Janson, 1891 Israel, Saudi Arabia
G. (G.) holzschuhi **sp. nov.** Iran
Host plant: *Pistacia* sp. (Rutales: Anacardiaceae) (D. Baiocchi, pers. com.)
- G. (G.) villiersi* (Obenberger, 1950) (*Janthe*) Algeria; Afrotropical

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