RECORDS OF GENUS AULACOPHORA CHEVROLAT, 1836 (LUPERINI: GALERUCINAE: CHRYSOMELIDAE) FROM SINDH, PAKISTAN

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ABSTRACT: The study on collection of genus Aulacophora Chevrolat, 1836 was carried out from various parts of Sindh Province of Pakistan, that revealed occurrence of three species of genus, including; Aulacophora foveicollis P. H. Lucas, 1849, Aulacophora impressa (Fabricius, 1801) and Aulacophora intermedia Jacoby, 1892. Each species is provided with habitus images, genitalia and distributional map.

Keywords: leaf beetles, galerucinae, alticini, flea beetles, Aulacophora.

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INTRODUCTION

Genus Aulacophora Chevrolat is considered as the voracious feeder of cucurbits and cause serious damage in case of avoidance (Gressitt 1955; Gressitt and Kimoto 1963; Sharma and Bhalla 1964; Kimoto 1966; Wilcox 1972; Gabriel 1997; Kimoto et al. 1984; Anand and Cox 1986) it has also been reported to feed and 19 plant families (Gressitt and Kimoto 1963; Gabriel 1997; Kimoto et al. 1984; FAO 1989; Jolivet 1999; Barroga 1997; Barroga and Mohamedsaid 2002). Genus Aulacophora consists of 186 species Worldwide. The genus can be characterized by oblong ovate body, antennae not jointed at insertion, transverse depression on pronotum, open coxal cavities from anterior, 5th abdominal male ventrite trilobed, apical spurs present on tibia, tarsal claw bifid. The genus is closely related with genus Pseudocophora but it can be distinguished by elytral epipleuron.

The feeding habits of Aulacophora and Diabrotica are found similar (Maulik, 1936), in Old World both genera are commonly seen in feeding commonly on squash, cucumbers, melons, they highly sensitive to the kairomones released from these host plants. (Metcalf 1986a: Nishida et al. 1992). Aulacophora possess ability to detoxify the bitter chemicals (tetracyclic triterpenoids) produced by cucurbit plants, further they possess the ability to detoxify and use for the defence against predators (Ferguson and Metcalf 1985: Nishida et al. 1990). The genus in Old World has remained restricted on cucurbits (Metcalf 1994), mainly literature in Old World is focused on red pumpkin beetle A. foveicollis (Al-Ali el al. 1982: Roy & Pande 1991: Khan & Khattak 1992). A. foveicollis and A. indica are common pests that attack on cucurbits throughout Asia, Africa and Europe (Berti 1990). Both A. foveicollis and A. indica are reported to overlap in Pakistan and Afghanistan whereas, former is distributed in west India and later one in the eastern part of India (Wilcox, 1972 and Berti, 1990).

MATERIALS AND METHODS

Specimen collection sites: Sindh parts of Sindh Province, Pakistan.
Method of collection: At various sites hand net was used to collect specimens from vegetations, and the light trap was installed at various locations of Sindh province.
Methods of Killing and preserving: Killing bottle containing potassium cyanide was used to kill insects and was cleared and legs were settled with the help of pins and, after settling the mounted and labelled with available information.
Method of imaging: For the quality images DSLR camera was fitted on rail, for the various depth of field multiple images taken to cover all parts of the body, staking of images was performed through control ZP software.

Specimens were diagnosed with the help of pertinent literature, and the distributional map was generated with the google earth online by inserting coordinates of particular area. Further, the details are also provided in material examined section of each species. Genitalia was studied with the help of maceration process.

RESULTS

Tribe Luperini Gistel, 1848
Type genus: Luperus Geoffroy, 1762
Genus Aulacophora Chevrolat, 1836
Type Species: Galeruca quadraria Olivier, 1808
Aulacophora foveicollis P. H. Lucas, 1849 (Plate 01, Fig. 01)

Description. General body colour reddish brown. Eyes strongly convex. Pronotum narrow, margined laterally with transverse depression. Clypeus with scattered fine hairs. Antennae filiform with serration. 1st antenal segment enlarged, 2nd short, 3rd equal to 4th and 5th equal to 4th segment. Dull scutellum with impunctate or convex appearance, the shape seemingly weekly-triangular. Forewing with fine punctures, without spots and appearance brownish. Prothorax broad with fine punctures. Posterior femur normal without swollen appearance. Tarsal claw internally toothed or bifid, 3rd segment of tarsae emarginated moderately. Apex of aedeagus cuspidated on dorsal side with straight or wavey appearance. Gonopore of aedeagus with semi-oval.

**Aulacophora impressa** (Fabricius, 1801) (Plate 02, Fig. 02)

**Description.** Body appearance redish-brown, black eyes. Eyes convex. Pronotum patches dark brown, transverse depression highly-grooved. Antennal brown and filiform,
size reaches at two-third of the elytron length. Serration of antennae present with 1st excavated antennomere with enlarged or finely-punctate. 2nd segment reduced, and 3rd similar to the 4th in size, 5th segment also equal to the 4th. Antenna separated by frons. Distal segment of antennae broader. Scutellum dull and impunctate or convex in appearance, weakly-triangular. Elytra reddish appearance with fine punctures. Prothorax broader with coarse punctuations and visibly sparse. Posterior femur no swollen. Bifid tarsal-claw, 3rd segment of tarsae emarginated. Aedeagus wavy or straight, dorsally with cuspidate. Gonopore of aedeagus with semi-oval shape and laterally appears slightly curved.

Material examined. *Aulacophora impressa* (Fabricius, 1801), 1♂, PAKISTAN, Sindh Province, Tharparkar District, Nagarparkar environs, 03.VIII.2015, Sohail Ahmed Talpur leg., 24°23’20.16”N, 70°48’52.82”E, 896 ft.

Plate 02. *Aulacophora impressa* (Fabricius, 1801)  
(a) Habitus DV (b) Habitus FV (c) Habitus LV  
(d, e) Aedeagus DV (f, g) Aedeagu LV
**Aulacophora intermedia** Jacoby, 1892 (Plate 03, Fig. 03)

**Description.** Body blackish-brown or dark-brown patches. Pronotum with mid-cleavage. Clypeus with fine hairs covered densely. Antennae brown and filiform and reaches two-third of the elytron. Serration of antennae present. 1st segment of antennae enlarged with short 2nd segment, 3rd segment similar to the 4th and 5th segment.
equal to the fourth. Antennae separated apart by frons. Distal segment of antennae longer. Scutellum impunctate or convex in appearance with dull look, shape of scutellum sharply-triangular. Punctures of elytra fine, spots on elytra absent with blackish-brown appearance.

Prothorax broader, with coarse punctuations and present sparsely.

**Material examined.** *Aulacophora intermedia* Jacoby, 1892, 1♀, PAKISTAN, Sindh Province, Mirpur Khas District, Sindhri environs, 01.VIII.2015, Sohail Ahmed Talpur leg., 25°29'48.84"N, 68°58'37.72"E, 181 ft.

Plate 03. *Aulacophora intermedia* Jacoby, 1892
(a) Habitus DV  (b) Habitus FV  (c) Habitus LV
(d, e) Spermatheca
Figure 03. Distributional map of *Aulacophora intermedia* Jacoby, 1892
Conclusion
In total 3 species are described with their distributional pattern in Sindh province.

DISCUSSION


REFERENCES


Chrysomelidae. NL-Kluwer Academic Publications.


