



## New Distributional Record of *Urentius hystricellus* (Richter, 1870) (Hemiptera: Tingidae) from Southernmost Region of Punjab, Pakistan

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**Abstract:** *Urentius hystricellus* is well known phytophagous and invasive true bug of family Tingidae. From Pakistan, this family is poorly studied despite having significant economic importance. Present species was identified with the help of most relevant and published literature. Specimens were mounted on triangular cards for morphological studies. New distributional data of *U. hystricellus* is included. Brief diagnosis, host plant and remarks on biology and current distribution in Pakistan are added. Line drawing of adult and fore wing along with digital photographs are also given.

**Keywords:** Lace bug; Invasive species, Southern Punjab, Distribution

### 1. INTRODUCTION

Family Tingidae is mainly distributed in tropical and temperate regions with approximately 2600 described species across the world [1, 2]. The tingid fauna of Pakistan is poorly investigated. So far, twelve species have been described based on both material and literature records from Pakistan [3, 4]. Members of this family also known as Lace bugs and have been reported as pests of various cultivated and ornamentals [5, 6]. Many species of lace bugs have been documented as oligophagous in nature but few species described as polyphagous pests associated with several plant families [2]. Association between plant and lace bugs results in the form of plant injuries such as gall formation and leaves staining which also leads to stunting

plant growth and significant economic losses [1, 7]. Morphologically these bugs can be recognized by the following characters; small body size (5-6 mm in length), pronotum triangular, backwardly extending over scutellum; head with lateral expansions of the thorax; wings usually with the pattern of elevated ridges and sunken membranous throughout; antennae four segmented; tarsi one or two segmented; ocelli absent [8-12].

Approximately 300 genera belonging to the family Tingidae have been described worldwide; of which 8 genera were recorded from Pakistan [4,13]. Genus *Urentius* is one of the small and widely distributed all over the world [2]. Members of this genus can be separated from other genera by the combination of the following characters;

whole body with spinules; head depressed laterally; pronotum with three rows of carinae, middle carina longest; wings with 1-2 series of spines on outer margin; tarsi two segmented [14]. Several studies based on exploration, description and distribution of Tingid fauna investigated that, a total of 7 species of genus *Urentius* were described from Old World, 5 from Africa and Southern Palaearctic region, one from Australia and 2 species from Oriental region [2]. However, little information is available on the tinged fauna of Pakistan with twelve described species in several genera [3, 4]. Moreover, all species belonging to genus *Urentius* have been observed in association with economically important plant and caused serious damage. In present study, we have recorded one species *Urentius hystricellus* (Richter, 1870) infesting brinjal plantation for the first time from Southern Punjab of Pakistan.

## 2. MATERIALS AND METHODS

Various insect collection tours were conducted during 2021-22 in district Rahim Yar Khan of Punjab province. During these tours specimens of lace bugs associated with brinjal plantations were collected through aspirator. All specimens were collected and preserved in 75 % ethanol. Collected materials were identified using most relevant and available literature likewise [1,10,15,16]. Diagnostic characters of these tinged were observed with the help of NOIF XSZ 107 BN stage microscope. Micrographs were prepared using Amscope 18-megapixel camera attached to the same microscope. Helicon focus software was

used for stacking images. Stacked pictures were cleaned with the help of Adobe Photoshop. Hand drawing of adult, and fore wing was performed manually. Identified specimens were deposited in the Department of Entomology, Pir Mehr Ali Shah Arid Agriculture University Rawalpindi, Pakistan. Distribution Map of studied taxon has been drawn with the help of ArcGIS software.

## 3. RESULTS AND DISCUSSIONS

### 3.1 *Urentius hystricellus* (Richter, 1870)

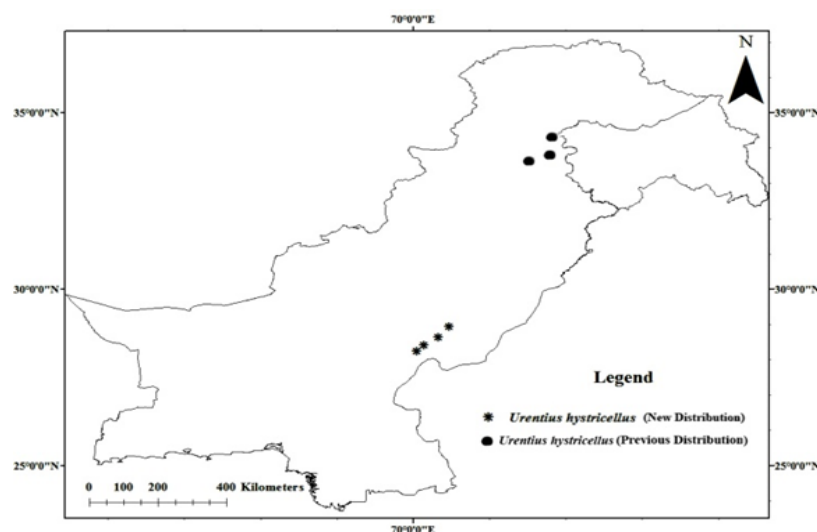
**Host Plant:** *Solanum melongena* L.

**Global distribution:** Israel, Tanzania, Zimbabwe, Uganda, Yemen, Zambia, Botswana, Ghana, Kenya, Mozambique, Namibia, Nigeria, South Africa (Transvaal) and USA [2], Sudan [16], Thailand, Africa, Egypt, Senegal, Ethiopia, Niger, Uganda [17], and India [18].

**Distribution in Pakistan (Fig. 1):** Pothwar: Rawalpindi, Islamabad, Chakwal, Jhelum [4]; South Punjab: Liaquatpur, Khanpur, Rahim Yar Khan, Sadiqabad (Current study).

**Systematics account:** *Tingis hystricellus* Richter, 1870: 84; *Urentius echinus* Distant, 1903b:134; *Urentius olivaceus* Distant, 1909c:115; *Urentius aegyptiacus* Bergevin, 1930a:18.

**Material examined:** Liaquatpur (Agricultural land) (28.9394°N'70.94874°E), 23-vi-2021, 07♂ and



**Fig. 1.** Distribution map of *Urentius hystricellus* (Richter, 1870) in Pakistan

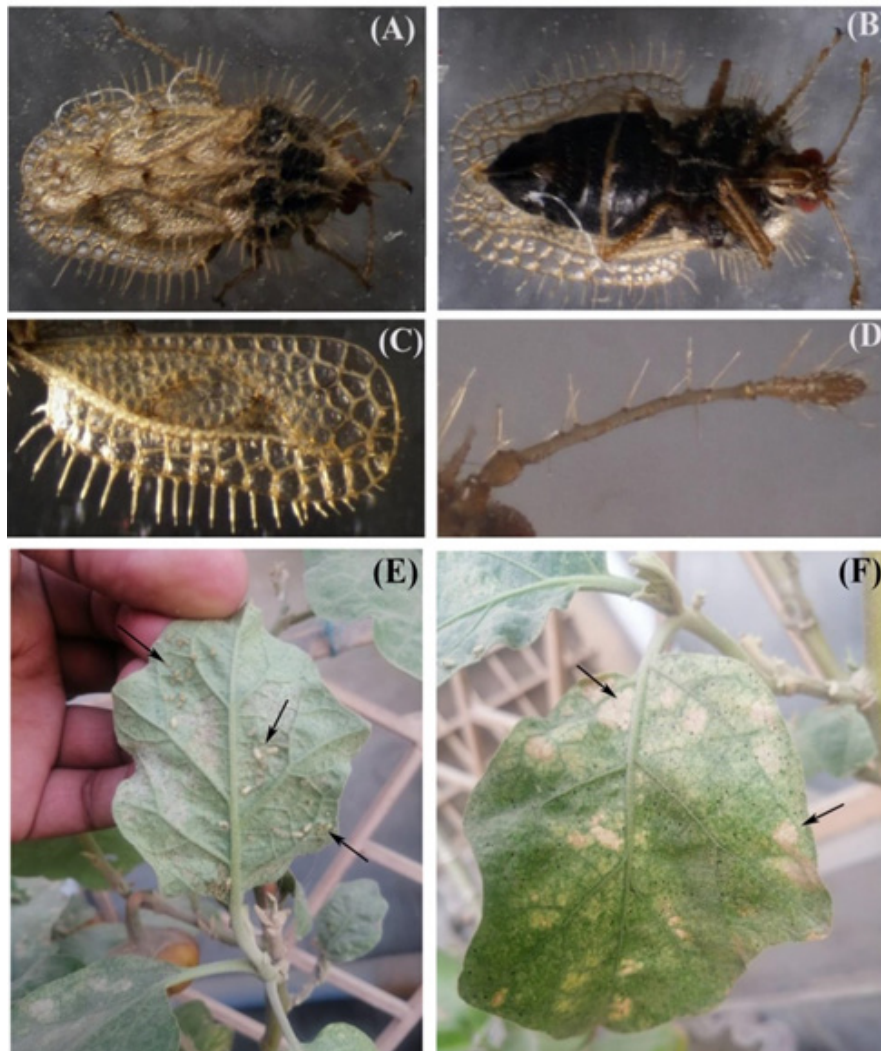
05♀; Khanpur (28.63318°N' 70.65737°E), 05-vii-2021, 04♂ and 03♀; Rahim Yar Khan (Cropped area) (28.42116°N'70.29887°E), 12-vii-2022, 02♂ and 03♀; Sadiqabad (28.24696°N'70.09795°E), 15-viii-2022, 01♂ and 02♀.

**Diagnosis:** Body pale ochraceous dorsally; with distinctly long spines along lateral aspect (Fig 2A, Fig 3A). Head with three spines (Fig 2B, Fig 3A). Antennae dark brownish; small, having small row of 15-18 setae in overall view (Fig 2D); apical segment thicker comparatively; basal segment sub globose; second antennal segment elongated and triangular (Fig 2D); pronotal sheath covering head, posterior margin of sheath reaching toward ocular margin dorsally; pronotal disc carinate irregularly (Fig 2A, Fig 3A), inner

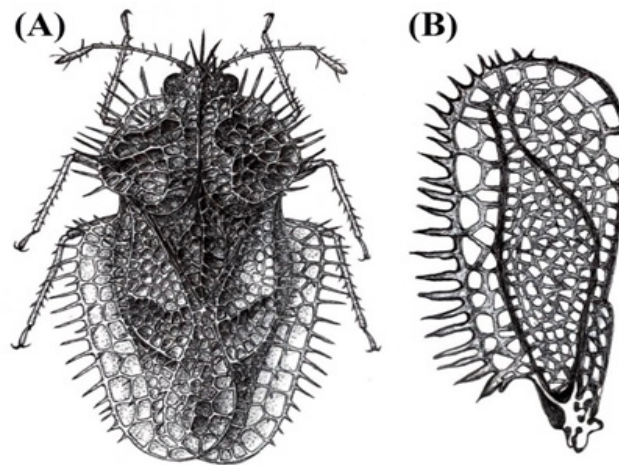
margin with continuous single row of cell running toward costal margin; outer margin with series of 11-12 long spines conspicuously (Fig 3A). Wings hyaline (Fig 2C); costal margin broad. Double rows of cell in hemelytron costal area (Fig 2C, Fig 3B); slight brownish patches present on wing. Legs with a number of small, conspicuous setae; tibia and tarsi dark brownish comparatively in overall view.

#### 4. CONCLUDING REMARKS

*Urentius hystricellus* was found in association with brinjal plants and caused chlorotic spotting appearance on leaves. High infestation of this pest leads in dryness and reduces the beauty of plant. According to the latest published records, *Urentius hystricellus* (Richter, 1870) has been considered



**Fig. 2.** *Urentius hystricellus* (Richter, 1870); (A) Habitus dorsal view (B) Habitus ventral view (C) Forewing (D) Antenna (E) Live specimen on brinjal leaf (F) Damaging symptoms



**Fig. 3.** Line Drawing of *Urentius hystericellus* (Richter, 1870)  
(A) Habitus in dorsal view (B) Fore wing

as invasive species of family Tingidae with wide range of distribution across the world [2]. However, this species was only recorded from Pothwar region of Pakistan. In present study, we have also noticed the distribution of *U. hystericellus* in southernmost region of Punjab.

## 5. ACKNOWLEDGEMENTS

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## 6. CONFLICT OF INTEREST

The authors declared no conflict of interest

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