# HOST PLANT PREFERENCES OF *RICANIA HEDENBORGI* STAL, 1868 (HEMIPTERA: RICANIIDAE)

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ABSTRACT: This study was conducted to determine the host plant preferences and the vertical distribution of the *Ricania hedenborgii* Stal, 1868 (Hemiptera: Ricaniidae). Totally 151 individuals which of 103 ♂ and 48 ♀ was obtained. *R. hedenborgii* was survived on the *Crataegus azarrolus* L., *Acasia* sp. *Prunus amygdalus* L. , *Junglans regia* L., *Malus comminis* Poir, *Morus* sp., *Elaeagnus* sp., *Capparis ovata*, *Rosa canina* L., *Quercus* sp. (Meşe), *Punica granatum* L., *Glycyrrhize glabra*, *Eleagnus agnustifolia*, *Vitis vinifera* L., *Triticum* sp., *Hordeum* sp., L., *Poa annua* L., *Bromus inermis* Leysser, *Poa bulbosa* L., *Lolium rigidum* Gaudin, *Bromus tectorum* L., *Hordeum murinum* L., *Aegilops cylindrica* Host., *Avena sterilis* L., *Secale montanum* L., *Bromus inermis* Leysser, *Hordeum geniculatum* All., *Phalaris brachysatchys* L., *Alopecurus myosuroides* Hudson in nature. As a result, The inrease the population of *R. hedenborgii* were determined in parallel to air temperature and humidity values.

KEY WORDS: *Ricania hedenborgi,* host plant preferences, temperature, humidity, ecology.

Ricaniidae family species are generally widespread over the tropical zones. *Ricania hedenborgii* Stal, 1865, located within this family is disseminated at Armenia, tropical zones of Africa, Sicily, Greece, Aegean Islands, Middle East countries, North Africa and Turkey (Nast, 1987). This species has been identified in our country at the cities of Diyarbakır (Ergani), Elazığ, İzmir (Selçuk), Mardin (Nusaybin), Muğla (Marmaris), Manisa (Muradiye) (Lodos and Kalkandelen, 1981; Tezcan and Zeybekoğlu, 2001; Demir, 2009). It has been reported that this species is present in nature from mid-June to mid-August and that it is located within *Vitex agnus-castus*, *Punica granatum* (Pomegranate), *Prunus avium* (Cherry) and weed host plants (Lodos & Kalkandelen, 1981; Tezcan & Zeybekoğlu, 2001).

This study has been conducted in 2007-2008 in order to determine the host plants of *R. hedenborgii* in the cities of Diyarbakır and Mardin, and especially the vertical distribution therefore in the Pınarkaya and Yolköprü sampling areas bound to Ergani district of Diyarbakır province. The data of this study pose a significance in terms of the ecological and biological studies to be conducted in the future years for *R. hedenborgii*, and this study shall provide the basic data for the studies aimed at determining the behavior of this specifies within the habitat, its feeding relations and the relations with natural enemies.

## MATERIALS AND METHODS

The material of the study is comprised of *R. hedenborgii,* host plants and sampling tools. This study has been conducted in 2007-2008 in the cities of Diyarbakır and Mardin. Surveys have been performed with sweep net and knock

down methods on the plants that may be the host of *R. hedenborgii* and agricultural and non-agricultural areas with non-periodical outings.

**Sweep net method:** Nets were thrown over the weeds at locations covering single-year culture plants and perennial plants and *R. hedenborgii* individuals were obtained.

**Knock down method:** By hitting on perennial fruit trees, shrubs and other perennial trees on four edges with pulse tool, the *R. hedenborgii* individuals were caused to fall on the Japan umbrella.

The individuals obtained with sweep net and knock down methods were classified as ♂ and ♀, and prepared for diagnosis.

## RESULT AND DISCUSSION

*R. hedenborgii* was collected over many plants in nature. These plants are perennials and single, presence imposition, the number of host plants and sex ratio are given below.

**1. Host Plant**: *Acasia* sp.
**Material examined:** Diyarbakır (Ergani, Pınarkaya, 14.VII.2007- 2 ♀, 12 ♂ ). **Totally:** 14 specimens.
**2. Host Plant**: *Crataegus azarrolus* L.
**Material examined:** Diyarbakır (Ergani, Pınarkaya, 14.VII.2007- 2 ♀, 8 ♂). **Totally**: 10 specimens.
**3. Host Plant**: *Prunus amygdalus* L.
**Material examined:** Mardin (Mazıdağı, 06.VII.2007- 2 ♀, 2 ♂). **Totally**: 4 örnek.
**4. Host Plant**: *Triticum* sp.,
**Material examined:** Diyarbakır (Ergani, Pınarkaya, 26.VII.2007- 1 ♂, 09.VIII.2007- 8 ♂). **Totally**: 9 specimens.
**5. Host Plant**: *Junglans regia* L.
**Material examined:** Mardin (Mazıdağı, 06.VII.07-6 ♂). **Totally**: 6 specimens.
**6. Host Plant**:: *Morus* sp.
**Material examined:** Diyarbakır (Ergani, Pınarkaya, 26.VII.2007-10 ♂). **Totally**: 10 örnek.
**7. Host Plant:**: *Malus comminis* Poir
**Material examined:** Diyarbakır (Ergani, Pınakaya, 26.VII.2007-6 ♂, 09.VIII.2007-6 ♂). **Totally**: 12 specimens.
**8. Host Plant:**: *Eleagnus agnustifolia*
**Material examined:** Diyarbakır (Ergani, 26.VII.2007-6 ♂, 30.06.2008-1 ♀). **Totally**: 7 specimens.
**9. Host Plant:**: *Capparis ovata*
**Material examined:** Mardin (Derik, 06.VII.2007-4 ♂). **Totally:** 4 specimens.
**10**. **Host Plant:**: *Rosa canina* L.
**Material examined:** Diyarbakır (Ergani, Pınarkaya, 22.VIII.2007-2 ♂, 26.VII.2007-6 ♀). **Totally**: 8 specimens.
**11**. **Host Plant:** *Quercus* sp.
**Material examined:** Diyarbakır (Ergani, Kayapınar-6 ♀). **Totally:** 6 specimens.
**12. Host Plant:** *Glycyrrhize glabra*
**Material examined**: Diyarbakır (Ergani, Yaslıca, 09.VIII.2007- 2 ♂). **Totally**: 2 specimens.
**13**. **Host Plant:** *Punica granatum*
**Material examined:** Diyarbakır (Ergani, Pınarkaya, 14.VII.2007-6 ♂, 23.VI.2008-1 ♂, **Mardin** (Derik, 06.VII.2007-1 ♂, 6 ♀). **Totally**: 14 specimens.
**14. Host Plant:** *Triticum* sp., *Hordeum* sp., L., *Poa annua* L., *Bromus inermis* Leysser, *Poa bulbosa* L., *Lolium rigidum* Gaudin, *Bromus tectorum* L., *Hordeum murinum* L., *Aegilops cylindrica* Host., *Avena sterilis* L., *Secale montanum* L., *Bromus inermis* Leysser, *Hordeum geniculatum* All., *Phalaris brachysatchys* L., *Alopecurus myosuroides* Hudson.

**Material examined: Diyarbakır** (Ergani, Pınarkaya, 14.VII.2007-13 ♂, 26.VII.2007-3 ♂, 2 ♂, 12.VII.2008, 4♂, 23♀ ). **Totally:** 45 specimens.

As a result of this study, it was determined that *R. hedenborgi* was present in the nature from the end of June until the end of August. It has been determined that in nature, *R. hedenborgi* can be found on, *Crataegus azarrolus* L. (Hawthorn), *Acasia* sp. (acacia), *Prunus amygdalus* L. (Almond), *Junglans regia* L. (Walnut), *Malus comminis* Poir (Apple), *Morus* sp. (Mulberry), *Elaeagnus* sp. (Oleaster), *Capparis ovata* (Capers), *Rosa canina* L. (Rosehip), *Quercus* sp. (Oak), *Punica granatum* L. (Pomegranate), Licorice, *Vitis vinifera* L. (Vine), *Triticum* sp., *Hordeum* sp., L., *Poa annua* L., *Bromus inermis* Leysser, *Poa bulbosa* L., *Lolium rigidum* Gaudin, *Bromus tectorum* L., *Hordeum murinum* L., *Aegilops cylindrica* Host., *Avena sterilis* L., *Secale montanum* L., *Bromus inermis* Leysser, *Hordeum geniculatum* All., *Phalaris brachysatchys* L., *Alopecurus myosuroides* Hudson. It has been determined that *R. hedenborgii* was especially creating an epidemic at Pınarkaya location of Ergani district and had a distribution on several plants.

When the dates that the species abound in the nature are analyzed, an increase was observed near the middle of the July months in 2007 when the average humidity and temperature demonstrated an increase (Figure 2). Likewise, an increase was observed in the species population when the temperature increased towards the middle of July in 2008 (Figure 3).

151 individuals (103 ♂ and 48 ♀) were collected from the nature from *R. hedenborgii* from totally fourteen host plants. The insect has been seen to fly in the period of end of June until the start of August. The insect demonstrated flight most intensely during the July month, and it has been observed especially that the species flew during the arid period of the region towards Pınarkaya and Yolköprü areas where the plant vegetation is varied and abundant, and that the species abounded more in the areas near water accumulations.

Furthermore, it has been determined that the species is present in high quantities during the times when the average humidity and temperature increases. Of the 27 host plants determined with this study, 26 has been determined for the first time. This finding shows that *R. hedenborgii* creates an epidemic at a certain time frame and distributes over a wide area.

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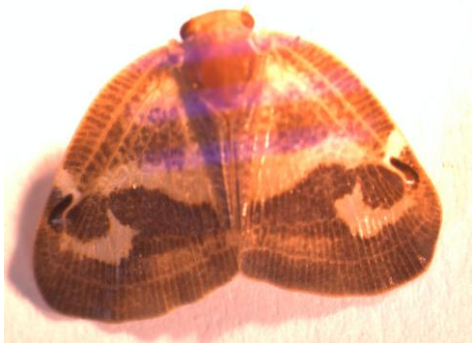

Figure 1. The Adult of *Ricania hedenborgii* (Stal, 1895).

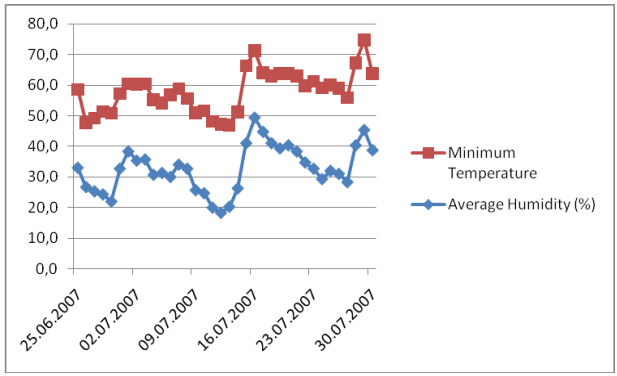


Figure 2. The temperature and humidity degrees of Ergani (Pınarkaya) location in 2007.

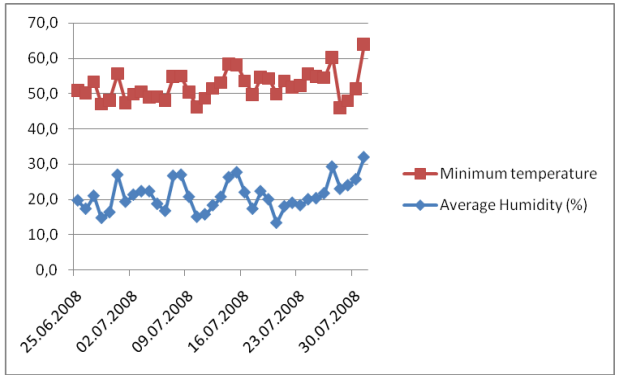


Figure 3. The temperature and humidity degrees of Ergani (Pınarkaya) location in 2008.