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Systematic position of *Kervillea (Kervillea) ancyrana* Bergevin, 1918 (Hemiptera, Fulgoromorpha, Issidae) from Turkey, with a new synonym of the species

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Abstract: Based on the study of specimens from the type locality, *Kervillea (Kervillea) ancyrana* Bergevin, 1918 is restored as a valid species and a valid type species of the genus *Kervillea* Bergevin, 1918. *Hysteropterum parvissimum* Dlabola, 1957 is synonymized with *K. (K.) ancyrana* Bergevin, 1918. *K. (K.) ancyrana* Bergevin, 1918 and *Kervillea (Kervillea) placophora* (Horvath, 1905) are redescribed and figured based on the examination of the materials from Turkey.

Key words: *Kervillea (Kervillea) ancyrana*, *Kervillea (Kervillea) placophora*, systematic position, syn. n., redescription, Turkey

Türkiye'den yeni bir sinonimi belirlenen *Kervillea (Kervillea) ancyrana* Bergevin, 1918 (Hemiptera, Fulgoromorpha, Issidae) türünün sistematik pozisyonu

Özet: *Kervillea (Kervillea) ancyrana* Bergevin, 1918, tip yerinden örneklerin incelenmesiyle yeniden geçerli bir tür ve *Kervillea* Bergevin, 1918 cinsinin geçerli tip türü haline getirilmiştir. *Hysteropterum parvissimum* Dlabola, 1957, *K. (K.) ancyrana* Bergevin, 1918 ile sinonimleştirilmiştir. *K. (K.) ancyrana* Bergevin, 1918 ve *Kervillea (Kervillea) placophora* (Horvath, 1905) türleri, Türkiye'den örneklerin incelenmesiyle yeniden tanımlanıp şekilleri çizilmiştir.

Anahtar sözcükler: *Kervillea (Kervillea) ancyrana*, *Kervillea (Kervillea) placophora*, sistematik pozisyon, yeni sinonim, yeniden tanım, Türkiye

Introduction

The genus *Kervillea* comprises 21 species belonging to 3 subgenera (*Kervillea*, *Corymbius* and *Falciopsis*). Seventeen of these species are described from Turkey and all of them are known only from their type localities and they are endemic.

Bergevin (1918) described the genus *Kervillea* by the type species *K. ancyrana* Bergevin, 1918 from the type locality: Ankara (Turkey). After examination and figuration of the lectotype of the species *Hysteropterum placophorum* Horvath, 1905, Dlabola (1980) placed this species in the genus *Kervillea* and

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synonymized *K. ancyrana* Bergevin, 1918 with this species. Gnezdilov (2002) examined the material (3 ♂♂, 1 ♀ and 1 ♂ syntype) from the type locality: Ankara (Turkey) of *K. (K.) ancyrana* and placed this species as a synonym under *K. (K.) placophora* Horvath, 1905 according to Dlabola (1980).

In the course of the present study, the specimens of the species *K. (K.) ancyrana* and *Hysteropterum parvissimum* are examined from Turkey. The examined materials were compared with the descriptions by Dlabola (1957, 1980) and with the figures in the paper by Gnezdilov (2002).

Materials and methods

The examined material in this study was swept from the steppe vegetation of Ankara and Yozgat in Turkey. The specimens were prepared according to the following method. Specimens taken with the aspirator were killed using ethyl acetate vapor. After the specimens were kept in a jar with 5% acetic acid for a few hours, the specimens and their genitalia were mounted on a specimen card with water-soluble glue.

The diagnostic characters of the examined specimens, and descriptions and figures given by Dlabola (1957, 1980) and Gnezdilov (2002) on the species of the genus *Kervillea* were studied.

Based on the examined specimens, the species are redescribed and figured. The terminology regarding the male and female genitalia was from Gnezdilov (2003).

The material examined is deposited in the collection of Ondokuz Mayıs University, Faculty of Science and Arts, Department of Biology, 55139, Samsun, Turkey.

Results

Key to the examined species of *Kervillea* (*Kervillea*)

- 1 (2) Body very small, short formed. Hind tibiae with 3 lateral spines (Figure 1). Aedeagus short and strongly curved, with 4 spin-like apical processes. Ventral lobe of phallosome reaching base of apical processes. Dorsal margin of phallosome swollen before apex and subbasally

strongly narrowed. Phallosome without serrate lobe laterally (Figures 4-6). Hind margin of abdominal sternum VII of female is medially straight (Figure 10) *ancyrana*

- 2 (1) Body small, short formed. Hind tibiae with 2 lateral spines (Figure 13). Aedeagus long and curved, with 2 spin-like apical processes. Ventral lobe of phallosome reaching apex of apical processes. Dorsal margin of phallosome almost straight and subbasally not narrowed. Phallosome with serrate lobe laterally (Figures 16-18). Hind margin of abdominal sternum VII of female medially with 2 lobes (Figure 22) *placophora*

Genus: *Kervillea* Bergevin, 1918

Kervillea Bergevin, 1918: 104-105.

Hysterella Logvinenko, 1977: 852.

Quadrastylum Dlabola, 1979: 283.

Type species: *Kervillea ancyrana* Bergevin, 1918: 105-108, by monotypy

Hysteropterum parvissimum Dlabola, 1957: 31-32, figs. 33-35, 44. **syn. n.**

Kervillea parvissima (Dlabola, 1957): Dlabola, 1980: 218.

Subgenus: *Kervillea* Bergevin, 1918 s.str.

Type species: *Kervillea ancyrana* Bergevin, 1918

Species: *Kervillea (Kervillea) ancyrana* Bergevin, 1918

Kervillea ancyrana Bergevin, 1918: 105-108.

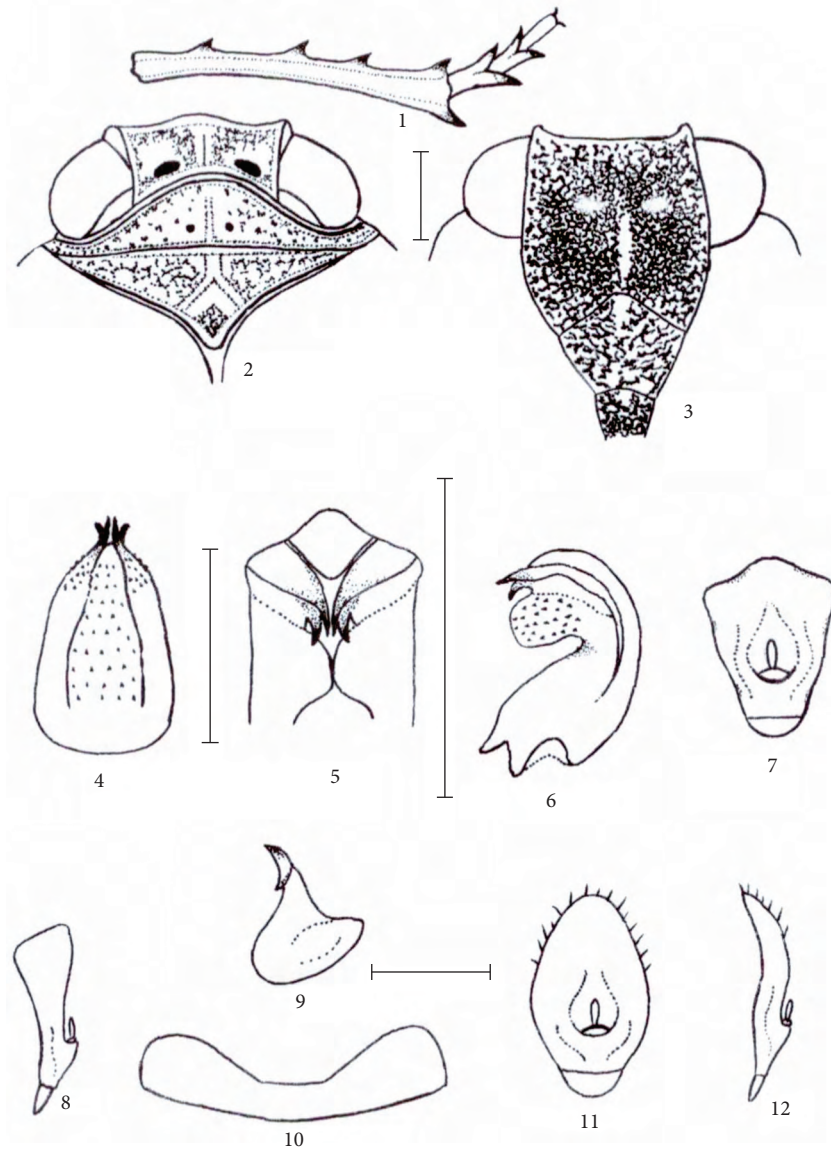
Hysteropterum parvissimum Dlabola, 1957: 31-32, figs. 33-35, 44. **syn. n.**

Kervillea parvissima (Dlabola, 1957): Dlabola, 1980: 218.

Kervillea (Kervillea) placophora (nec Horvath, 1905) Gnezdilov, 2002: 148, figs. 1-10.

Type locality: Ankara (Turkey).

Material examined: 1 ♂: Çubuk Barajı, Ankara, 850 m, 21.05.1978; 1 ♀: Keçiören, Ankara, 850 m, 03.06.1978; 1 ♂: Beytepe, Ankara, 850 m, 10.06.1978; 1 ♀: Keçiören, Ankara, 850 m, 17.06.1978; 9 ♂♂, 5 ♀♀: Çubuk Barajı, Ankara, 850 m, 01.05.1980; 13 ♂♂, 17 ♀♀: Çubuk Barajı, Ankara, 850 m,



Figures 1-12. *Kervillea (Kervillea) ancyrana* Bergevin, 1918. 1- Hind right tibia and tarsus dorsal view, 2- Forebody dorsal view, 3- Head ventral view, 4- Aedeagus ventral view, 5- Apex of aedeagus caudo-dorsal view, 6- Aedeagus lateral view, 7- Anal tube ventral view, 8- Anal tube lateral view, 9- Stylus lateral view, 10- Abdominal sternum VII of female ventral view, 11- Female anal tube dorsal view, 12- Female anal tube lateral view. Scales: 0.5 mm.

05.05.1980; 1 ♂: Kızılcahamam, Ankara, 850 m,
 08.05.1980; 1 ♂: Fen Lisesi, Ankara, 850 m,
 15.05.1980; 13 ♂♂, 6 ♀♀: Fen Lisesi, Ankara, 850 m,
 23.05.1980; 1 ♂: Fen Lisesi, Ankara, 850 m,
 06.06.1980; 5 ♂♂, 2 ♀♀: Çubuk Barajı, Ankara, 850
 m, 29.04.1981; 1 ♂: Çubuk Barajı, Ankara, 850 m,
 25.05.1982; 1 ♂: Çamlık, Yozgat, 1300 m, 07.07.1982;
 1 ♀: Çamlık, Yozgat, 1300 m, 21.08.1982; 1 ♀: Pınarlı,
 Çorum, 950 m, 14.06.2005; all leg. Kartal, V.

Redescription

Body very small, short form, smaller than other known species of the subgenus *Kervillea* Bergevin, 1918. Hind tibiae with 3 lateral spines (Figure 1). Vertex slightly concave, 2.8 times as wide as long. Anterior margin of vertex slightly convex, lateral margins parallel, with median ruffle. Pronotum approximately as long as vertex, with weak median

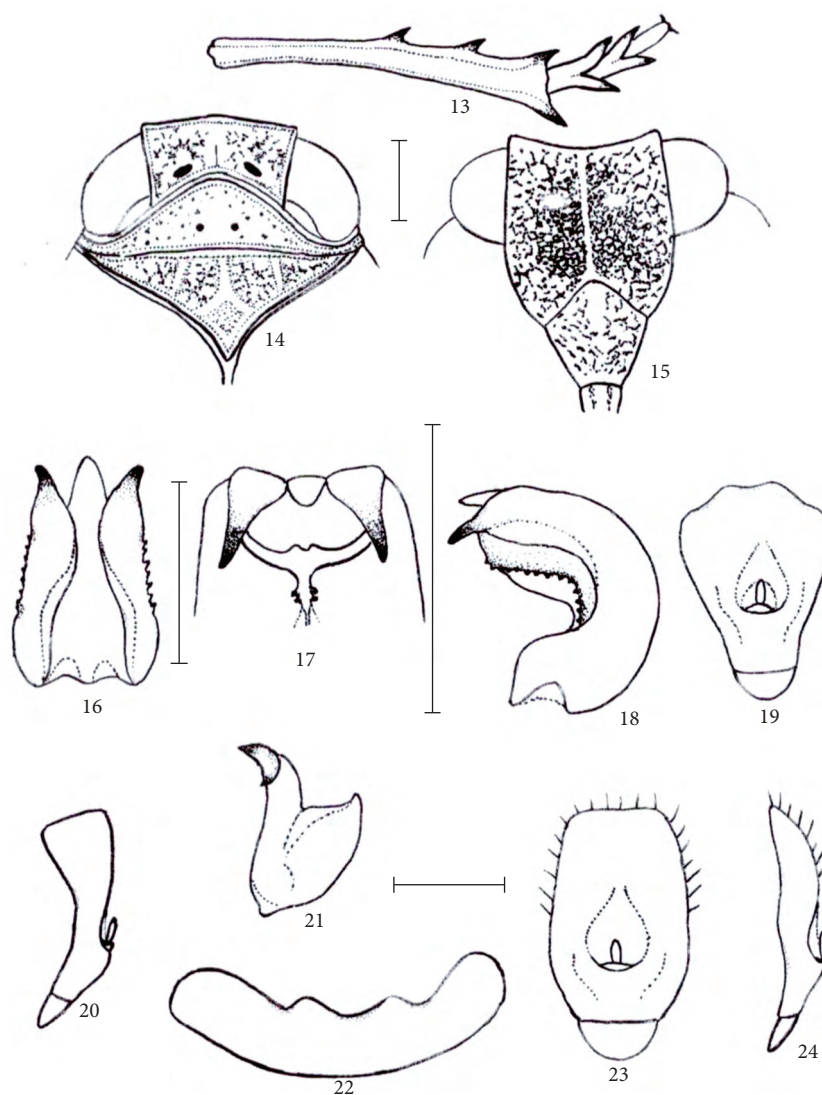
keel. Anterior margin of pronotum widely rounded, posterior margin rather regular. Mesonotum about 2 times as long as pronotum, with median keel (Figure 2). Frons without keel, somewhat broader than its median length. Anterior margin of frons slightly concave and lateral margins slightly convex (Figure 3). Forewings rather coarse with strongly developed venation. Body measurements of examined specimens are given in Table 1.

Body brown, almost the whole of body and forewings dark brown or black pigmented, irregularly

spotted or reticulated. Vertex and pronotum with 2 black spots near hind margins. Frons with 2 yellowish brown spots.

Male genitalia

Aedeagus short and strongly curved, with 4 spine-like processes apically. 2 ventral processes thin and straight, 2 lateral processes thick and laterally curved. Ventral lobe of phallosome reaching base of processes (Figures 4, 5). Dorsal margin swollen before apex, and strongly narrowed subbasally (Figure 6). Anal tube



Figures 13-24. *Kervillea (Kervillea) placophora* (Horvath, 1905). 13- Hind right tibia and tarsus dorsal view, 14- Forebody dorsal view, 15- Head ventral view, 16- Aedeagus ventral view, 17- Apex of aedeagus caudo-dorsal view, 18- Aedeagus lateral view, 19- Anal tube ventral view, 20- Anal tube lateral view, 21- Stylus lateral view, 22- Abdominal sternum VII of female ventral view, 23- Female anal tube dorsal view, 24- Female anal tube lateral view. Scales: 0.5 mm.

Table 1. Body measurements of *Kervillea (Kervillea) ancyrana* (mm)

Sex	Total length	Maximal body width	Vertex length	Vertex width	Head width (incl. eyes)	Pronotum length	Forewing length	Forewing width	N
♂♂	2.89 (2.63-3.13)	2.17 (2-2.33)	0.21 (0.18-0.24)	0.59 (0.52-0.64)	1.23 (1.16-1.34)	0.23 (0.2-0.26)	2.37 (2.13-2.59)	1.49 (1.28-1.65)	60
♀♀	3.21 (3-3.55)	2.27 (2.1-2.66)	0.23 (0.2-0.27)	0.63 (0.58-0.69)	1.31 (1.26-1.39)	0.23 (0.21-0.26)	2.68 (2.4-2.88)	1.69 (1.48-1.9)	48

triangular, apical part broadest and apical margin arched, ventral margin convex (Figures 7, 8). Stylus strongly narrowed caudad and subapically, with pointed apical tooth (Figure 9).

Female genitalia

Hind margin of sternum VII is wide concave and straight medially (Figure 10). Anal tube egg-like, strongly tapering apicad (Figure 11), apical side of anal tube curved to ventral side (Figure 12).

Species: *Kervillea (Kervillea) placophora* (Horvath, 1905)

Hysteropterum placophorum Horvath, 1905: 188

Kervillea placophora (Horvath, 1905): Dlabola, 1980: 217-218, figs: 180-187

Type locality: Between Eskişehir and Ilgın (Turkey).

Material examined: 6 ♂♂, 4 ♀♀: Akdağmadeni, Yozgat, 1350 m, 08.07.1982; 3 ♂♂, 9 ♀♀: Akdağmadeni, Yozgat, 1350 m, 26.07.1983; all leg. Kartal, V.

Redescription

Body small, short form, larger than the species of the subgenus *K. (K.) ancyrana* Bergevin, 1918. Hind tibiae with 2 lateral spines (Figure 13). Vertex slightly concave, 2.5 times as wide as long, anterior margin

wide angled, lateral margins parallel, with median ruffle. Pronotum approximately as long as vertex, without keels, widely rounded on the anterior margin, posterior margin rather regular. Scutellum about 2 times as long as pronotum, with median and lateral keels, weakly concave at apex (Figure 14). Frons with slightly median keel, somewhat broader than its median length, anterior margin slightly concave and lateral margins slightly convex (Figure 15). Forewings rather coarse with strongly developed venation. Body measurements of examined specimens are given in Table 2.

Body brown, almost the whole body and forewings dark brown or black pigmented, irregularly spotted or reticulated. Vertex and pronotum with 2 black spots near hind margins. Frons with 2 yellowish brown spots.

Male genitalia

Aedeagus short and curved, with 2 spine-like processes apically. The processes strongly and light curved laterally. Ventral lobe of phallosome reaching apex of processes (Figures 16, 17). Dorsal margin of phallosome almost straight, and not narrowed subbasally. Phallosome with serrate lobe laterally (Figure 18). Anal tube triangular, apical part broadest and apical margin with 2 wide lobes, ventral margin convex (Figure 19, 20). Stylus strongly narrowed

Table 2. Body measurements of *Kervillea (Kervillea) placophora* (mm).

Sex	Total length	Maximal body width	Vertex length	Vertex width	Head width (incl. eyes)	Pronotum length	Forewing length	Forewing width	N
♂♂	3.17 (3-3.36)	2.3 (2.2-2.55)	0.25 (0.22-0.28)	0.63 (0.62-0.65)	1.31 (1.27-1.34)	0.27 (0.25-0.28)	2.61 (2.5-2.66)	1.57 (1.45-1.66)	9
♀♀	3.49 (3.1-3.7)	2.49 (2.2-2.75)	0.26 (0.23-0.3)	0.65 (0.59-0.69)	1.38 (1.3-1.47)	0.28 (0.24-0.31)	2.9 (2.40-3.18)	1.75 (1.52-1.85)	13

caudad, caudal edge with short process, apical tooth pointed (Figure 21).

Female genitalia

Hind margin of sternum VII is wide concave and with 2 lobes medially (Figure 22). Anal tube elongate, slightly tapering apicad, apical margin slightly convex (Figure 23), apical side of anal tube curved to ventral side (Figure 24).

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Discussion and conclusion

The species *K. (K.) ancyrana* is synonymized incorrectly with *Hysteropterum placophorum* Horvath, 1905 by Dlabola (1980). Both of these names are valid. *Hysteropterum parvissimum* Dlabola, 1957 is a junior synonym of *K. (K.) ancyrana*.

K. (K.) ancyrana is a valid species and a valid type species of the genus *Kervillea*.