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NOTES ON GEOGRAPHIC DISTRIBUTION

New records of the leafhopper *Scaphoideus dellagiustinai* Webb & Viraktamath, 2007 (Hemiptera, Cicadellidae) from Albania and Italy, with a new host plant association

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Abstract. We report the leafhopper *Scaphoideus dellagiustinai* Webb & Viraktamath, 2007, which was originally described from southern France and Burkina Faso but also known from Italy, from two additional localities in Italy (Tuscany, Latium) and from one locality in Albania (new record for this country). In Italy, we collected it on *Tripidium ravennae* (L.) H. Scholz (Poaceae), its host plant also in France. In Albania, however, we observed it associated with *Arundo plinii* Turra (Poaceae), which is a new host plant association. A diagnosis for this leafhopper species and biological notes are given.

Keywords. Apennine Peninsula, Balkan Peninsula, Deltocephalinae

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Introduction

The leafhopper genus *Scaphoideus* Popenoe, 1885 (Cicadellidae, Deltocephalinae) includes 229 species worldwide (Dmitriev et al. 2026). Until 2006, in Europe it was represented only by *S. titanus* Ball, 1932, a species introduced from North America and considered a serious vineyard pest as a vector of the Flavescence dorée phytoplasma. In 2000, 2003 and 2004 on coastal dunes of southern France, Nusillard (2007) collected specimens of *Scaphoideus* living on *Tripidium ravennae* (L.) H. Scholz (= *Saccharum ravennae,* = *Erianthus ravennae*) [Poaceae]). He identified and published this material as the East Asian leafhopper *Scaphoideus rubroguttatus* Matsumura, 1914 (Nusillard 2007). However, Webb and Viraktamath (2007) later examined a male and a female from Nusillard's material together with specimens collected by light trapping in Burkina Faso in 1968; they recognized that the species had been misidentified and described it as a new species, *S. dellagiustinai* Webb & Viraktamath, 2007. This species differs from *S. rubroguttatus* in its smaller size, paler orange-yellow colouration, and distinctive male genitalia. Mazzoni et al. (2017) recorded *S. dellagiustinai* from Tuscany, Italy based on specimens collected in 1999 in a Malaise trap. Here, we document new records of *S. dellagiustinai* from Albania and additional localities in Italy, and we report a new host plant association in Albania.

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Methods

Specimens of *Scaphoideus dellagiustinai* were collected in 2021 and 2024 from three new locations: Latium (Fiumicino, Isola sacra) and Tuscany (Ansedonia, La Torba), Italy, and near Divjakë, Albania (Figures 1, 2). In all cases, sweeping and direct aspiration were used to collect adults from stands of their host plants. The material is stored in the Zoological collection of Sofia University (BFUS) and in the Collection of the Rosaurus Research Center of Auchenorrhynchology, Viterbo (CGB).

Photographs of live specimens were taken using a Canon 70D DSLR camera equipped with a Canon MP-E 65 mm macro lens and a Yongnuo YN-24EX macro flash. The distribution map (Figure 1) was

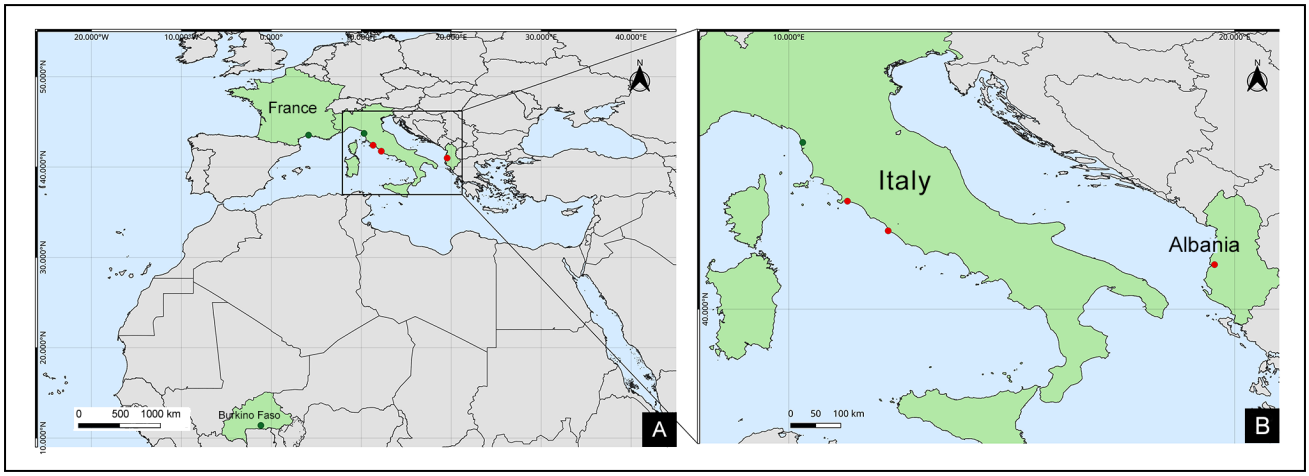


Figure 1. Distribution of *Scaphoideus dellagiustinai* Webb & Viraktamath, 2007. **A.** General distribution, green: present, grey: not present. **B.** Distribution in Europe, green dots: known localities from previous studies, red dots: localities where the species was recorded in the present study.

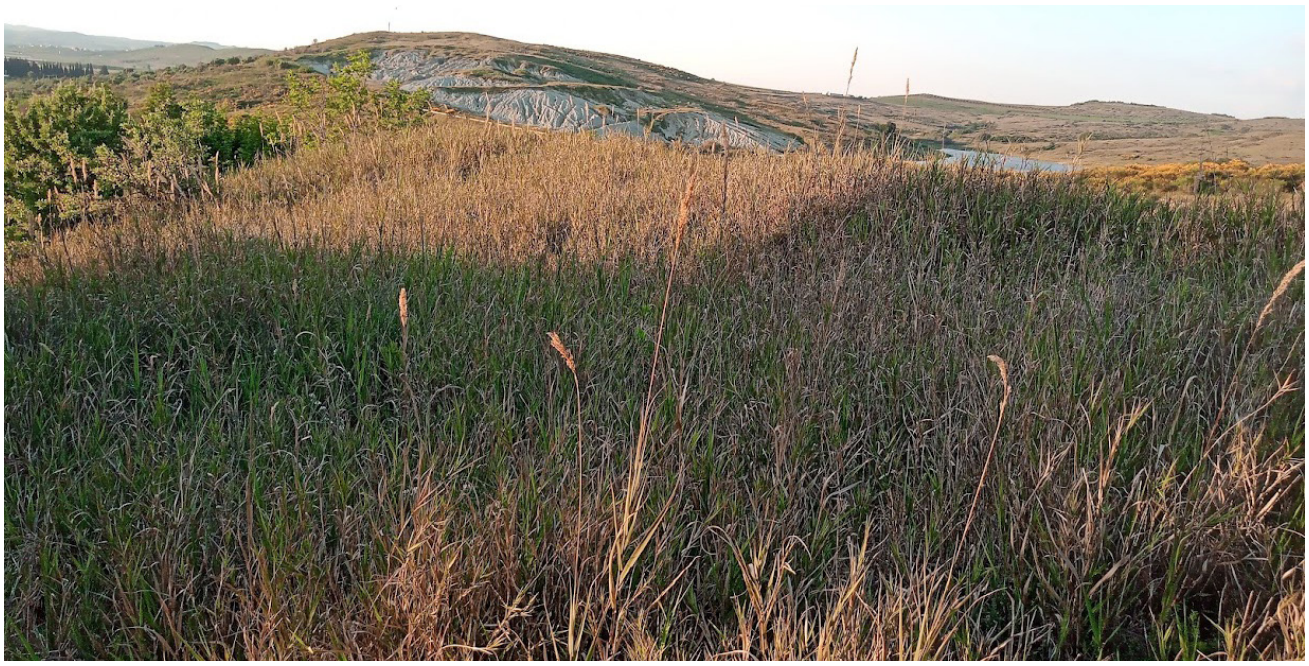


Figure 2. Habitat of *Scaphoideus dellagiustinai* Webb & Viraktamath, 2007 near Divjakë, Albania.

created using QGIS v. 3.40 (QGIS Development Team 2024) and Database of Global Administrative Areas (GADM 2022) shapefile.

Results

Order Hemiptera Linnaeus, 1758
Suborder Auchenorrhyncha Duméril, 1805
Infraorder Cicadomorpha Evans, 1946
Superfamily Membracoidea Rafinesque, 1815
Family Cicadellidae Latreille, 1825
Subfamily Deltocephalinae Fieber, 1869
Tribe Scaphoideini Oman, 1943
Subtribe Scaphoideina Oman, 1943
Genus *Scaphoideus* Popenoe, 1885

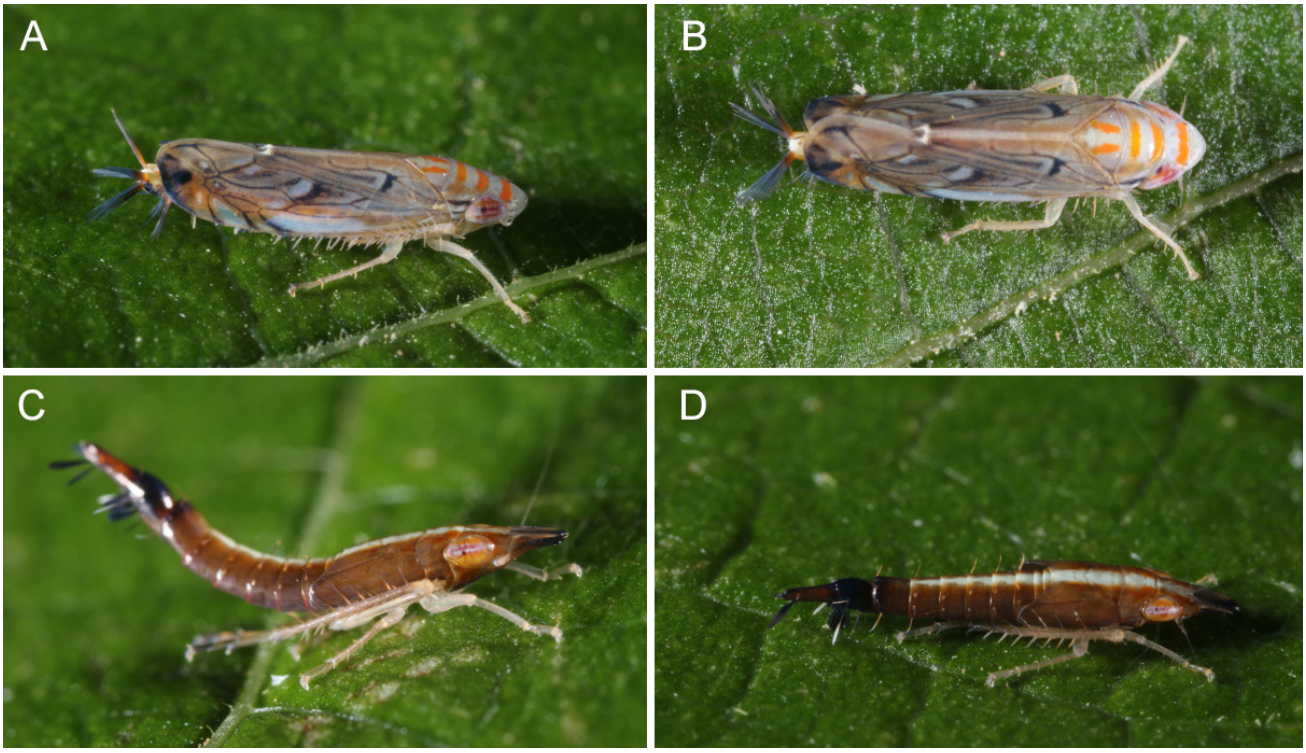


Figure 3. Habitus of *Scaphoideus dellagiustinai* Webb & Viraktamath, 2007 near Divjakë, Albania. **A, B.** Male, **C, D.** Nymph.

***Scaphoideus dellagiustinai* Webb & Viraktamath, 2007**
Figures 1–3

Distribution. Europe: Southern France, Italy, Albania (first record). West Africa: Burkina Faso (Figure 1).

New records. ALBANIA — Qarku i Fierit District • hills near Divjakë; 40.9934°N, 19.5524°E; 50 m alt.; 08.VII.2021; I. Gjonov leg.; sweeping on *Arundo plinii*; 3 ♂ pinned, BFUS-I-IG032085–BFUS-I-IG032087; 1 ♀ pinned, BFUS-I-IG032084; 1 nymph pinned, BFUS-I-IG032083 • same locality; 27.VI.2024; I. Gjonov leg.; sweeping on *Arundo plinii*; 2 ♂ pinned, BFUS-I-IG032057, BFUS-I-IG032058; 12 nymphs pinned, BFUS-I-IG032059–BFUS-I-IG032070; 7 ♂ in ethanol, BFUS-I-IG032075–BFUS-I-IG032081; 1 ♀ in ethanol, BFUS-I-IG032082; 4 nymphs in ethanol, BFUS-I-IG032071–BFUS-I-IG032074.

ITALY — Latium • Rome, Fiumicino, Isola sacra; 41.7503°N, 12.2300°E; 0 m alt.; 18.VII.2024; A. Guglielmino, C. Bückle leg. (loc. 977); open area near coast with *Tripidium ravennae* (L.) H. Scholz, *Juncus* L., *Scirpoides* Ség. (= *Holoschoenus*), *Schoenus* L., *Verbascum* L., *Dittrichia viscosa* (L.) Greuter; 1 ♂ pinned, CGB-977-001; 11 ♀ pinned, CGB-977-002–CGB-977-012 • same locality; 24.VI.2025; A. Guglielmino, C. Bückle leg. (loc. 1022); 1 ♂ pinned, CGB-1022-001; 5 ♀ pinned, CGB-1022-002CGB-1022-006; 1 nymph pinned, CGB-1022-007 — Tuscany • Grosseto, Ansedonia, La Torba; 42.4119°N, 11.3162°E; 0 m alt.; 23.VII.2024; A. Guglielmino, C. Bückle leg. (loc. 980); open area in the coastal plain with *Tripidium ravennae*, *Carex* L., *Juncus*, *Leymus* Hochst.; 2 ♂ pinned, CGB-980-001, CGB-980-002; 20 ♀ pinned, CGB-980-003–CGB-980-022 • same locality; 03.VII.2025; A. Guglielmino, C. Bückle leg. (loc. 1029); 2 ♂pinned, CGB-1029-001, CGB-1029-002; 2 ♀ pinned, CGB-1029-003, CGB-1029-004; 6 nymphs pinned, CGB-980-005–CGB-980-009.

Identification. Specimens of *Scaphoideus* are typically identified by the orange bands on the head and thorax, recurved veins in the forewing and an apical group of very long macrosetae on the pygofer in both sexes (Figure 3A, B). *Scaphoideus dellagiustinai* (♂) differs from the other members of the *rubroguttatus–unimaculatus–quangtriensis* group (Webb and Viraktamath 2007) by the aedeagus having a very short, stout shaft (much shorter than the basal apodeme) with paired short apical processes and basal serrate flanges; in *S. unimaculatus* Webb & Viraktamath, 2007 and *S. quangtriensis* Webb & Viraktamath, 2007 the shaft is elongate (roughly as long as or longer than the basal apodeme), with *S. unimaculatus* also showing a dorsal facial diamond-shaped mark (vs. *S. quangtriensis* with a single narrow band below the ocelli). Compared with *S. titanus*, another species present in Europe, *S. dellagiustinai* lacks the *S. titanus* aedeagal apical condition with a more prominent apical "shield" (Webb and Viraktamath 2007; Enciso Garcia et al. 2025). In contrast, *S. titanus* completes development on

grapevines (including *Vitis vinifera* L. and other *Vitis* spp.), whereas *S. dellagiustinai* appears associated with tall grasses in sandy habitats. The nymphs of *S. dellagiustinai* have a distinctly elongate head and abdomen (Figure 3C, D), the latter bearing apical macrosetae of a characteristic lanceolate shape, and the abdomen is highly mobile, as the nymphs can twist it and direct it upwards.

Life cycle. End of June/beginning of July, nymphs, males, and females were collected both in Italy and Albania. In Italy, females prevailed distinctly over males in the second half of July (other year), and no nymphs were found. Nusillard (2007) indicated the presence generically of nymphs, males, and females from end of July until end of September, and a maximum of individuals in the middle of August. These data may suggest that the species has two generations. Sampling in spring and autumn should furnish further information about its life cycle. The situation in Burkina Faso is probably rather different: the specimens were collected in November.

Discussion

To facilitate the discussion that follows, the key information outlined above is summarized in Table 1.

The discovery of *Scaphoideus dellagiustinai* in Albania expands the known range of this species in the Western Palaearctic. Presently, the distribution of *S. dellagiustinai*—with records from France, Burkina Faso, Italy, and Albania—appears disjunct. Such a pattern raises questions about the species' origin and dispersal history.

One hypothesis is that *S. dellagiustinai* was overlooked until recently, and it is native to the Mediterranean region, or there were ancient biogeographical links between Mediterranean and West African grassland faunas. Its presence on widespread Mediterranean grasses such as *T. ravennae* and *A. plinii,* both native in the Mediterranean region but not in Burkina Faso (POWO 2026), would be consistent with the idea of an established, possibly native, population in southern Europe.

However, the record from Burkina Faso, a sub-Saharan West African country with a markedly different climate and flora, offers an alternative hypothesis: if the species is indeed native to Africa, then its presence in Europe might be the result of accidental introduction. Such movement could have occurred via trade in ornamental grasses, food plants, or other plant material, especially given the use of such plants in landscaping and habitat restoration. In addition, we have to consider, that despite its distinctive appearance the species was never found by any of the entomologists who collected Auchenorrhyncha in the 19th and 20th in France and Italy, and then, after the first finding in Europe 1999 (in Italy), the species was collected in four further sites within the last 25 years. This consideration favours a hypothesis of a recent introduction.

We may add to these two scenarios a third one: it is possible that neither West Africa nor the Mediterranean area represent the regions where the species originated. If we suppose introduction happened due to the transfer of cultivated plants, many regions worldwide are candidates for the origin of *S. dellagiustinai*. We present only one example: *Saccharum officinarum* L., Sugar Cane, displays similar morphological characteristics as *Tripidium ravennae* and is indeed closely related to it. Moreover, that species is cultivated both in West Africa and in the Mediterranean area, and, of course, in many other countries with tropical or subtropical climate (POWO 2026). This opens a large range of

Table 1. Summary of collected specimens information presented above.

Collector, year	Collection method	Collection date	Specimens	Country	Locality	Host plant	Reference
1968 (uncertain)	Light trap	7–9 Nov.	5 ♂, 2 ♀	Burkina Faso	Nobere	No data	Webb and Viraktamath 2007
Mazzoni 1999	Malaise trap	27 Jul.–3 Aug.	1 ♂	Italy	Pisa, Parco San Rossore	No data	Mazzoni et al. 2017
Nusillard 2000–2004	Sweeping (uncertain)	end Jul.–end Sep.	♂, ♀, nymphs, several times and in large numbers	France	Grau du Roi, Carnon	*Tripidium ravennae*	Nusillard 2007; Webb and Viraktamath 2007
Gjonov 2021	Sweeping, aspirator	8 Jul.	3 ♂, 1 ♀, 1 nymph	Albania	Divjakë	*Arundo plinii*	This study
Gjonov 2024	Sweeping, aspirator	27 Jun.	9 ♂, 1 ♀, 16 nymphs	Albania	Divjakë	*Arundo plinii*	This study
Guglielmino, Bückle 2024	Sweeping	18 Jul.	1 ♂, 11 ♀	Italy	Fiumicino	*Tripidium ravennae*	This study
Guglielmino, Bückle 2024	Sweeping	23 Jul.	2 ♂, 20 ♀	Italy	Ansedonia	*Tripidium ravennae*	This study
Guglielmino, Bückle 2025	Sweeping	24 Jun.	1 ♂, 5 ♀, 1 nymph	Italy	Fiumicino	*Tripidium ravennae*	This study
Guglielmino, Bückle 2025	Sweeping	3 Jul.	2 ♂, 2 ♀, 6 nymphs	Italy	Ansedonia	*Tripidium ravennae*	This study

areas from which the leafhopper could have been introduced wherever suitable conditions and host plants are offered.

In summary, introduction of the species from Africa to Europe, a Mediterranean origin, or introduction from other regions, are equally plausible hypotheses at present. The decision to favour any of them should be deferred to the future, when more data, possibly including molecular phylogeographic studies, come available.

The presence of the species on *Tripidium ravennae* in Italy is consistent with previous records in France (Nusillard 2007). However, the new host record from Albania (*A. plinii*) suggests a broader host range than previously recognized, potentially including multiple large-statured Poaceae species in coastal or disturbed habitats.

To date, no specific host plants have been recorded for the species in Burkina Faso as the specimens were collected in a light trap (Webb and Viraktamath 2007). In the San Rossore park (Italy), where Mazzoni put his Malaise trap and collected one specimen of *S. dellagiustinai*, *T. ravennae* is present (Bertacchi et al. 2021). Thus, it is probable that in this case *T. ravennae* was the host plant as well. Our new records provide further host plant observations: *S. dellagiustinai* was found on two tall grasses: *T. ravennae* and *A. plinii*. These grasses are not closely related—one is a plume grass and the other is a giant reed — suggesting that *S. dellagiustinai* is not narrowly host-specific. Rather, it appears to exploit a broader range of robust, perennial grasses in open habitats. This host range could explain its ability to occupy diverse regions, such as coastal dunes, river valleys, and savannas, and may have facilitated its spread. Its association with *T. ravennae*, which is native to the Mediterranean and western Asia, is particularly interesting. This plant can form dense stands in disturbed areas, so *S. dellagiustinai* may have colonized such stands in Italy as an opportunistic habitat. Likewise, *A. plinii* is common in the western Balkans and in Italy, and our record from Albania indicates that *S. dellagiustinai* can use these reed habitats. Further surveys should investigate whether *S. dellagiustinai* occurs on other ecologically similar grasses, such as *A. donax* L. (Giant Reed; not native in the Mediterranean) (POWO 2026) and on *Saccharum* L. species.

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Additional information

Conflict of interest

The authors declare that no competing interests exist.

Ethical statement

No ethical statement is reported.

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Author contributions

Conceptualization: IG, AG, CB. Formal analysis: IG, AG, CB. Funding acquisition: IG. Investigation: IG, AG, CB. Methodology: IG, AG, CB. Resources: IG, AG, CB. Visualization: IG. Writing – original draft: IG, AG, CB. Writing – review and editing: IG, AG, CB.

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Data availability

All data that support the findings of this study are available in the main text.

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