

NEW RECORDS OF ARADIDAE FROM THE BALKAN COUNTRIES (HETEROPTERA, ARADIDAE)

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ABSTRACT: New and additional records for 29 species of Aradidae from the Balkan countries are reported. Among them, eight species records are new for the following countries: *Aradus aterrimus* Fieber for Serbia; *Aradus kuthyi* Horvath for Greece and Bosnia-Herzegovina; *Aradus ribauti* Wagner for Albania; *Aradus serbicus* Horvath for Greece; *Aradus somcheticus* Kiritschenko for Slovenia; *Quilnus discedens* (Horvath) for Romania; *Calisius salicis* Horvath for Bulgaria and *Mezira tremulae* Germar for Romania.

KEY WORDS: Heteroptera, Aradidae, new records, Balkan countries

INTRODUCTION

In order to obtain reliable distribution data for the fauna of Palaearctic Aradidae, important older (mostly misidentified) material and recent specimens from institutional or private collections, including rich material from the author's own collection were examined and identified. As a result, many new and unpublished records for most European countries were assembled. Those from the Balkan countries (including new species records for some countries) are communicated in this paper to facilitate future faunistic studies in this still insufficiently investigated area. Most misidentifications were observed in species of the "*betulae*" group, which are difficult to identify without examination of male genital structures.

Abbreviations used follow those of "Catalogue of Heteroptera of the Palaearctic Region" (HEISS, 2001):

For countries where the records originate:

AL - Albania; BA - Bosnia and Herzegovina; BG - Bulgaria; HR - Croatia; GR - Greece; MK - Macedonia; MN - Montenegro; RO - Romania; SI - Slovenia; RS - Serbia.

For institutions where the examined specimens are deposited :

MHNG - Muséum d' Histoire Naturelle, Geneva, Switzerland

MNHN - Muséum National d' Histoire Naturelle, Paris, France

MZHF - Zoological Museum, University of Helsinki, Finland

NHNV - Naturhistorisches Museum Vienna, Austria

NMPC - National Museum of Natural History, Dept. of Entomology, Prague, Czech Republic

OLML - Oberösterreichisches Landesmuseum, Linz, Austria

ZMUC - Zoological Museum, University of Copenhagen, Denmark

Material deposited in private collections is indicated, that in author's own collection being designated CEHI. The localities are cited for the most part as written on the labels (some place names have been anglicized). The numbers 2/5 mean two male / five female specimens examined; N/N = larger series.

List of Species

Aneurinae

Aneurus (Aneurus) laevis (F.)

- BG N/N Belasiza 900 m, on *Fagus* sp. and *Castanea* sp., 31 V 1989, Heiss and M. Josifov leg., CEHI
- HR 0/1 Zagreb, Gračani, 20 VI 1965, Bouček leg., NMPC;
2/1 Opatija, Mt. Učka, 950 m, 25 VI 1996, I. Wolf leg., CEHI
- GR 1/1 Makedonia, Imatha, Vermio Mts., Kato Vermio 1300 m, 6 VI 1999, V. Brachat leg., CEHI
N/N Makedonia, Vroundos Mts., Serres – Lelias on *Fagus* sp., 800 m, 18 IX 1996 B. and K. Thaler leg., CEHI
0/1 Thessaly, Larissa, Mt. Ossa above Stomio, 900 m, 24 V 2004, R. Schuh leg., CEHI
1/0 Vroundos Mts., NE Serres, 1800 m, 25 V 1991, Wunderlich leg., CEHI
0/1 Pindos Mts., Kalambaka – Kastanea, sifted 20 III 1997, A. Riedel leg., CEHI
1/1 Makedonia, Region of Kavala, Mt. Pangeou, 1700 m, 10 VI 2002, F. Wachtel leg., CEHI
4/3 Makedonia, Rodopi, N. of Skaloli, forest village of Elalia, 15 VI 2002, F. Wachtel leg., CEHI
- RO 1/0 Baile Herculane, Domogled Urwald, 900 m, 19 V 1994, J. Schmidl leg., CEHI
- SI N/N Studence – Ponikva, on *Corylus avellana*, VI 1995, M. Egger leg., CEHI

Aneurus (Aneurodes) avenius (Duf.)

- GR 1/0 Peloponnesus, Taygetos Mts., Anavriti, 980 m, 37°02' N, 22°36' E, 15 VI 2002, leg., coll. J.C. Streito, Montpellier
- RO 1/1 Baile Herculane, Domogled Urwald 900 m, 19 V 1994, J. Schmidl leg., CEHI
0/1 Baile Herculane, Eichenmischwald 300 m, 28 V 1996, J. Schmidl leg., CEHI

Aradinae

Aradus aterrimus Fieb.

- RS 1/0 Mt. Kopaonik, 29 IV 1953, CEHI. **New record for Serbia.**
So far known only from Slovenia (GOGALA & GOGALA 1986, 1989; PROTIĆ 2001)

Aradus betulae (L.)

- BG N/N Sandansky, on *Populus nigra*, 29 V 1988, Heiss and M. Josifov leg., CEHI
 1/0 Batak, VII 1965, coll. Stehlik, Brno
 1/0 Macedonia, Strumjani, 17 V 1988, Pütz leg., coll. Günther, Ingelheim
 1/0 Macedonia, Stara Kresna, 20 V 1988, Pütz leg., coll. Günther, Ingelheim
 1/1 Schwarzes Meer, Veselic b. Kavacite, 30 VI 1986, Pütz leg., coll. Günther, Ingelheim
 HR 0/3 N-Velebit, W Pleševica, Doline, 1400 m, 2 VIII 2001, R. Schuh leg., CEHI
 GR 0/2 Ioannina, Smolikas Mts., on *Quercus* sp., 19 VI 1992, M. Egger leg., CEHI
 1/0 Makedonia, Pieria Oio, 7 km N of Litohoro, on *Populus* sp., 27 IV 2004, R. Schuh leg., CEHI
 1/1 Makedonia, Region of Grevena, Smolika Mts., Smixi, 1450 m, 18-20 VI 2002, F. Wachtel leg., CEHI
 0/1 Larissa, Stomio, 4 V 2004, C. Cocquempot leg., coll. J. C. Streito, Montpellier
 0/1 Larissa, Stomio, 3 VII 2003, leg., coll. H. Brustel, Toulouse
 0/1 Peloponnesus, Gialova, Messinia, 20 III 1992, Heinz leg., coll. W.Dorow, Frankfurt
 MK 0/1 Mt. Galičica, VIII 1930, Rambousek leg., NMPC
 RO 1/0 Baile Herculane, Domogled Urwald, 900 m, 19 V 1994, J. Schmidl leg., CEHI
 0/1 Baile Herculane, Topleť, Auwaldrest, 200 m, 19 V 1994, J. Schmidl leg., CEHI
 1/0 Carpathians, Barnar, Moldavia, Montandon leg., MNHN
 1/1 Carpathians, Sinaia, Walachia, Montandon leg., MNHN

Aradus betulinus Fall.

- RO 1/0 Carpathians, Brosteni, Moldavia, Montandon leg., MNHM
 0/1 Carpathians, Cince, Montandon leg., MNHN

Aradus brenskei Rt.

- GR 4/2 Thessalia, Larissa, Mt. Ossa above Stomio, 900 m, 24 V 2004 R. Schuh leg., CEHI
 0/1 Morea, Cumani, Brenske leg., (loc. typ.!) NHMV
 RO 1/1 Herkulesbad (Baile Herculane), Elisabethhöhe, 16 VI 1922, coll. Eckerlein NHMG
 N/N Herkulesbad (Baile Herculane), 1895, Ganglbauer leg., MHNW
 0/2 Vallée du Jiu, Montandon leg., MHNW
 1/1 Banater Gebirge, Mina Bigar, Strauss leg., NHMV
 MN 0/1 Podgorica, 11 XII 1986, Boness leg., coll. Günther, Ingelheim

Aradus cedri Put.

- GR 0/2 Peloponnesus, Arcadia, Parnon Mts., Anagiron, 800 m, V 1999, F. Wachtel leg., CEHI.
 Second record from Greece, the previous one also from the Parnon Mts. (Heiss, 1997)
 1/1 Peloponnesus, Laconia, Taygetos Mts., Pende Alonia, 11 km from Sparti, 1300 m, under bark of *Pinus* sp., 9 XI 2004, J. C. Bourdonné leg., coll. A. Matocq, Paris

Aradus cinnamomeus Panz.

- GR 0/1 Peloponnesus, Daria, 37°51' N, 22°32' E, 14 VI 2002, leg., coll. J. C. Streito, Montpellier
 0/1 Peloponnesus, Saidona, 36°90' N, 22°35' E, 1347 m, VI 2002, leg., coll. J. C. Streito, Montpellier
 SI 2/2 Istria, Stena-Dragonja, 1 IX 1989, Heiss leg., CEHI
 MN 2/1 Durmitor, 1900 m, 11 VIII 1987, H. Kippenberg leg., CEHI

Aradus conspicuus H.S.

- AL 1/1 Konja, Mader leg., no date, coll. Eckerlein, MHNG

- 1/1 Fuša, Rappojanit, Ricarvaš, 1800 m, Vermosa Rapsa, NHMV
- BA 1/0 Olovo, 50 km N of Sarajevo, 580 m, 6 VI 1972, Eckerlein leg., MHNG
- BG 1/4 Belogradtschik, on *Pinus* sp., 1 VI 1988, Heiss leg., CEHI
1/0 + L5 Stara Planina, Mt. Cepan, Bucinprohod, S of Petrohanski, 800 m on *Fagus* sp., 29 IV 1998, Bayer leg., CEHI
2/0 Mt. Belasica, 13-1600 m, 13-16 VIII 1960, L. Hoberlandt leg., NMPC
- HR 3/2 "Agram" (Zagreb), 1892, NMPC
- GR 1/0 Epirus, Ioannina, Vrosina – Vereniki, 8 VI 2002, F. Wachtel leg., CEHI
1/2 + L3-L5 Makedonia, Region of Kavala, Mt. Pangeou 1700 m, 10 VI 2002, F. Wachtel leg., CEHI
0/1 Chalcidice, Sithonia, Mt. Stratonika, 2 V 2005, C. Cocquempot leg., coll. J. C. Streito, Montpellier
1/1 Delphi, 6 VIII 1958, Eckerlein leg., MHNG
0/1 Pindos Mts., 12 VIII 1998, M. Egger leg CEHI
2/0 N Kastanea, 1200 m, 28 VI 1997, Bayer leg., CEHI
0/1 + L5 Umg. Metsovo, 24 VI 1997, M. Egger leg., CEHI
0/1 Florina, Mt. Vernon, Pisoderion, 9 IV 2002, Bremer leg., coll. W. Dorow, Frankfurt
1/1 Morea, Cumani, Brenske leg., NHMV
- RO 2/1 Baile Herculane, Eichenmischwald, 300 m, 28 V 1994, J. Schmidl leg., CEHI
1/0 Baile Herculane, E "Kalkbrenne", 700 m, 31 V 1996, J. Schmidl leg., CEHI
1/1 Arad, Region of Grosii Noi, on *Fagus* sp., 25-26 VI 2005, leg., coll. H. Brustel, Toulouse
0/3 Carpathians, Sinaia, Walachia, Montandon leg., MNHN
1/1 Herkulesbad (Baile Herculane), 1895, Ganglbauer leg., MHNW
1/0 Braşov env., 5 VI 1971, Burmeister leg., coll. Ch. Rieger, Nürtingen
- SI 0/1 + L5 Velika Planina, Pl. Dorja Raven, 1400 m, 29 VII 1994, I. Wolf leg., CEHI
1/1 "Krain", Küster leg., ZMUC
5/2 Kočevsky Rog, Podstenice, 26 V 2001, M. Egger leg., CEHI
- MN 0/1 Vrbanje Orjen BM91, NHMV

Aradus corticalis (L.)

- RO 1/0 Herkulesbad (Baile Herculane), Banat, 10 IV 1933, Dorn leg., MHNG
1/0 Huedin, 30 V 1971, Baehr leg., coll. Ch. Rieger, Nürtingen

Aradus depressus (F.)

- BG 1/0 S. Rhodopes, Plovdiv, 20 km S of Asenovgrad, Radjuve Planine, 1000 m, on *Carpinus* sp. and *Corylus* sp., 2 VIII 1998, Bayer leg., CEHI
1/0 Montana, 10 km W of Mihajlovgrad, 28 VI 1998, Bayer leg., CEHI
2 L5 Sofia, N of Berkovica, 400 m, 29 IX 1998, Bayer leg., CEHI
1/1 Rilski Monastir, 26 VII 1977, Scharmann leg., CEHI
- RO 1/1 Carpathians, Sinaia, Walachie, Montandon leg., MHNG
- SI 1/0 Kočevsky Rog, Podstenice, 26 V 2001 M. Egger leg., CEHI

Aradus dissimilis A.Costa

- RO 1/1 Carpathians, Sinaia, Walachie, Montandon leg., MZHF, 1/1 MNHN
1/0 Carpathians, Vallée de la Prahova, Montandon leg., MZHF

Aradus flavicornis Dalm.

- AL 1/0 Elbasan, IX 1918, Priesner leg., OLML
- GR 0/1 Larissa, Mt. Ossa, SW of Stomio, 10 VIII 1998, M. Egger leg., CEHI
1/0 Larissa, Mt. Ossa, SW of Stomio, 27 VII 2004, M. Egger leg., CEHI
N/N Epirus, Mesovouni, S. of Ioannina, in daylight, 2 VIII 1998, M. Egger leg., CEHI

L5 Peloponnesus, Arcadia, Taygetos Mts., Langadapass, IV 1999, F. Wachtel leg., CEHI
 1/0 Peloponnesus, Kanali – Nea Sinopi, 3 VIII 1998, M. Egger leg., CEHI
 0/1 Delphi, 6 VIII 1958, Eckerlein leg., MHNG
 1/0 Plakka, 12 VII 1973, Brueckner leg., MHNG
 0/3 Peloponnesus, Kaiafas, 30 VII 1992, leg., coll. P. Kott, Pulheim

Aradus graecus Heiss

GR 6/1 Pindos Mts., Kalambaka – Kastanea, sifted 20 III 1997, A. Riedel leg., CEHI

Aradus krueperi Rt.

BG 1/0 Macedonia, Stara Kresna, 20 V 1988, Pütz leg., coll. Günther, Ingelheim
 0/1 Macedonia, Locevika nr. Melnik, 14 V 1988, Pütz leg., coll. Günther, Ingelheim
 GR 1/0 + L5 Peloponnesus, Killini, 37°45 N, 22°25E, on *Abies cephalonica*, 13 VI 2001, J. Schmidl leg., CEHI
 0/1 + L5 Peloponnesus, Kemitsa env., 650 m, 38°08 N, 22°13 E, 17 IV 2001, J. Schmidl leg., CEHI
 3/1 + L5 Peloponnesus, Achaia, Agios Nikolaos, IV 1999, F. Wachtel leg., CEHI
 1/1 Peloponnesus, Agios Nikolaos, Kato Klitoria, 25 IV 1999, I. Wolf leg., CEHI
 1/0 Makedonia, Kastoria See, 3 IV 1994, W. Schawaller leg., CEHI
 0/1 Larissa, Mt. Ossa, V 1988, H. Mühle leg., CEHI
 0/1 Larissa, Mt. Ossa, on *Abies* sp., 25 VI 2003, leg., coll. H. Brustel, Toulouse
 MK 1/0 Macedonia, Mt. Kožuf, 9 VI 1974, J. Hladil leg., coll. Stehlik, Brno

Aradus kuthyi Hv. (Fig. 1)

GR 0/1 + L5 Achaia, Kalavrita, Chelmos forest 1200 m, 9 V 2000, C. Cocquempot leg., CEHI.
 Very rare species, to date recorded only from Albania, Austria, Czech Republic, and Hungary (HEISS, 2001). **New record for Greece.**
 BA 0/1 “Zher. Potok“, 16 V 1957, unknown collector, NMPC
 The abbreviated locality could not be identified with certainty. Most probably it refers to Žeravečki Potok BQ69, between Derventa and Slavonski Brod (information kindly supplied by Ljiljana Protić). **New record for Bosnia Herzegovina.**

Aradus lugubris Fall.

GR 0/1 Ioannina, gorge nr. Vikos, 12 V 2005, leg., coll. H. Brustel, Toulouse
 0/1 Loutraki, N of Corinth, 14 VIII 1935, Klinger leg., OLML
 3 L5 Peloponnesus, Arkadia, Taygetos Mts., Langadapass, 19 IV 1999, M. Egger leg. CEHI
 0/1 Peloponnesus, Parnon Mts., Eos, 4 VIII 1992, leg., coll. P. Kott, Pulheim. These are the second records from Greece (HEISS 1997)
 RO 0/1 Carpathians, Sinaia, Walachia, Montandon leg., MNHN

Aradus obtectus Vas.

BA 1/0 Sutjeska Perućica, 2 VI 1967, P. Lauterer leg., coll. Stehlik, Brno
 1/0 “Bosnia“, U. Sahlberg leg., MZHF
 GR 3/6 + L5 Pindos Mts., Katara Pass, 1700 m on *Abies cephalonica*, 2 VIII 1998, M. Egger leg., CEHI
 N/N Mt. Giona, on *Abies cephalonica*, 10 IX 1989, Drosopoulos leg., coll. Kott Pulheim
 RO 1/0 Herkulesbad (Baile Herculane), Banat, 10 VI 1933, coll. Eckerlein MHNG
 1/1 “Carpathians“, Montandon leg., OLML
 2/1 Brosteni, Modavie, Montandon leg., 1/1 MZHF

- SI 0/2 Kočevje, Ledenik 1000 m, 26 V 2001, M. Egger leg., CEHI
 MN 1/2 Žabljak Podgor, 1400 m, 26 VI 1958, M. Haperl leg., NMPC
 1/0 Žabljak, Canyon of the Tara, 1000-1200 m, 30 V 1958, Mihalyi leg., NMPC
 0/1 Durmitor, Barno Jezero 1480 m, 3 V 1958, Mihalyi leg., NMPC

Aradus pallescens frigidus Kir.

- BG N/N + L5 Mt. Pirin, Bajunidubsky, 2200 m under flat stones on *Helianthemum* sp., 20 IX 1987, Heiss and M. Josifov leg., CEHI
 1/1 Mt. Pirin, Banderiza, 27 VIII 1972, Beron leg., MHNG

Aradus pictus Baer.

- GR 1/1 Peloponnesus, Taygetos Mts., Artemisia 1700 m, 5 V 1979, Hladilovi leg., coll. Stehlik, Brno
 1/2 Kefalonia, Mt. Enos, 1250 m, 38°09' N, 20°38' E on *Abies cephalonica*, B. and K. Thaler leg., CEHI
 1/1 Peloponnesus, Chrisoritsi, 3 VIII 1992, leg., coll. P. Kott, Pulheim
 1/0 Thessaly, Mt. Ossa, Stomio, 1000 m, 27 V 1990, Persohn leg., coll. Koschwitz, Eppenbrunn

Aradus reuterianus Put.

- GR 0/1 Achaia, Kalavrita, 1200 m, 9 V 2000, C. Cocquempot leg., coll. J. C. Streito, Montpellier.
 Second record for Greece (HEISS 1998)
 1/0 Achaia, Kalavrita, 1200 m, 18 IV 2000, C. Cocquempot leg., CEHI

Aradus ribauti Wgn.

- AL 0/1 Ruskuli, Mader leg., MHNG, 1/0 CEHI.
 2/1 Ruskuli, 23 XI 1918, coll. Priesner OLML. **New records for Albania.**
 BG 1/1 Harmanli, Island in Marica River, 80-120 m, 21 V 1978, K. Majer leg., coll. Stehlik, Brno, and CEHI

Aradus serbicus Horv. (Fig. 4)

- BG L5 NW of Sofia, Cerezovica, 600 m, 28 VI 1998, Bayer leg., coll. Günther, Ingelheim
 GR 2/0 Makedonia, Pieria Mts., 1000 m, on *Fagus* sp., 9 IV 1999, Schülke leg., CEHI
 0/1 Makedonia, Vermion, Imathia, 1300 m, 11 IV 1998, Schülke leg., CEHI
 1/0 Makedonia, Kávala, Pangéo, 700 m, on *Fagus* sp., 30 IV 1994, Schawaller leg., CEHI
New record for Greece

Aradus somcheticus Kir. (Fig. 2)

- RO 1/0 Carpathians, Sinaia, Walachie, Montandon leg., MMZHF
 SI 0/1 Kočevski Rog, Podstenice, 26 V 2001, M. Egger leg., CEHI. **New record for Slovenia.**
 Note: The records of *Aradus truncatus* Fieb. reported from BA, MK and RS by PROTIĆ (2001: 12) refer to *somcheticus*, as the true *truncatus* is a Euro-Siberian northern element and has not yet been confirmed from the Balkan countries [See note in HEISS (2001: 18)].

Aradus versicolor H.S.

- BA 1/0 "Bosnia" Prozor, Leonhard leg., NHMV
 GR 1/2 Volos, Pilio 2 km E of Miles, 3 IV 1997, A. Riedel leg., CEHI



Figs.1–4. 1 – *Aradus kuthyi*, female from Kalavrita, Greece; 2 – *Aradus somcheticus*, female from Postenice, Slovenia; 3 – *Quilnus discedens*, male from Bijelo Brdo, Bosnia-Herzegovina; 4 – *Aradus serbicus*, male from Stara Planina, Serbia.

- 1/1 Delphi, 6 VIII 1958, Eckerlein leg., MHNG
 SI 0/1 Zagorje, Nova Gorica, 300 m in submontane *Fagus* sp. forest, VI 1998, J. Schmidl leg., CEHI
 1/0 "Krain", Küster leg., ZMUC
 RO 2/0 + L5 Baile Herculane, Eichenmischwald, 300 m, 28 V 1994, J. Schmidl leg., CEHI
 1/1 Herkulesbad (Baile Herculane) V 1931, NHMV

Quilnus discedens (Horv.) (Fig. 3)

- BA 1/1 brach. Herzegovina, Domanovići, CEHI
 1/1 brach. "Bosnia", CEHI
 RO Carpathians, Moldavia, Barnar, Montandon coll. and CEHI. **New record for Romania.**

Quilnus parvicollis (Stal)

- GR 0/2 brach. Peloponnesus, Arkadia, Taygetos Mts., Profitis Ilias 750 m, IV 1999, F. Wachtel leg., CEHI.
 0/1 brach. Peloponnesus, Taygetos Mts. 1700-1800 m, 8 VIII 1980, Guglielmi leg., CEHI
 1/0 Peloponnesus, Argolis, Mt. Oligyrtos, NW of Skotini 1230 m, 37°47' N, 22°24' E, 16 V 2005, H. and R. Rausch leg., CEHI

Calisiinae

Calisius salicis Hv.

- BG 2/3 + L5 Jamina Poljana, S of Burgas, on *Quercus* sp., 24 VII 2004, M. Egger leg., CEHI
New record for Bulgaria

Mezirinae

Mezira tremulae (Germ.)

- GR 1/1 Oiti Mts. 1500 m, 18-25 V 1956, Borchmann leg., OLML
 RO 0/1, Herkulesbad (Baile Herculane), Hurgaxia, no date and collector, OLML
 1/0 Baile Herculane, Eichenmischwald, 300 m, 28 V 1994, J. Schmidl leg., CEHI,
 included in Cat. Het. Pal. IV (Heiss, 2001) but without data. **First records for Romania.**

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ИЗВОД**НОВИ ПОДАЦИ О ФАМИЛИЈИ ARADIDAE БАЛКАНСКИХ ЗЕМАЉА
(HETEROPTERA, ARADIDAE)**

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У раду су обрађени примерци фамилије Aradidae, који су уловљени на Балканском полуострву и чувају се у музејским збиркама Природњачких музеја у Женеви, Паризу, Бечу, Прагу, Линцу, затим у Золошким музејима у Хелсинкију и Копенхагену, а највише у збирци аутора. Углавном се ради о старом материјалу, чија је идентификација делимично нетачна, нарочито код групе "betulae". На Балканском полуострву регистровано је 29 врста фамилије Aradidae. Од утврђеног броја 29, осам врста су нове за фауну балканских земаља: *Aradus aterrimus* Fieber за Србију, *Aradus kuthyi* Horvath за Грчку и Босну и Херцеговину; *Aradus ribauti* Wagner за Албанију; *Aradus serbicus* Horvath за Грчку; *Aradus somcheticus* Kiritshenko за Словенију; *Quilnus discedens* (Horvath) за Румунију; *Calisius salicis* Horvath за Бугарску и *Mezira tremulae* Germar за Румунију.

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