

On the species status of *Otiorhynchus armadillo* (Rossi, 1792) and *Otiorhynchus salicicola* Heyden, 1908 (Coleoptera, Curculionidae, Entimini)

Autor(en): **Magnano, Luigi / Heijerman, Theodoor / Germann, Christoph**

Objektyp: **Article**

Zeitschrift: **Mitteilungen der Schweizerischen Entomologischen Gesellschaft = Bulletin de la Société Entomologique Suisse = Journal of the Swiss Entomological Society**

Band (Jahr): **81 (2008)**

Heft 3-4

PDF erstellt am: **22.07.2024**

Persistenter Link: <https://doi.org/10.5169/seals-402967>

Nutzungsbedingungen

Die ETH-Bibliothek ist Anbieterin der digitalisierten Zeitschriften. Sie besitzt keine Urheberrechte an den Inhalten der Zeitschriften. Die Rechte liegen in der Regel bei den Herausgebern.

Die auf der Plattform e-periodica veröffentlichten Dokumente stehen für nicht-kommerzielle Zwecke in Lehre und Forschung sowie für die private Nutzung frei zur Verfügung. Einzelne Dateien oder Ausdrucke aus diesem Angebot können zusammen mit diesen Nutzungsbedingungen und den korrekten Herkunftsbezeichnungen weitergegeben werden.

Das Veröffentlichen von Bildern in Print- und Online-Publikationen ist nur mit vorheriger Genehmigung der Rechteinhaber erlaubt. Die systematische Speicherung von Teilen des elektronischen Angebots auf anderen Servern bedarf ebenfalls des schriftlichen Einverständnisses der Rechteinhaber.

Haftungsausschluss

Alle Angaben erfolgen ohne Gewähr für Vollständigkeit oder Richtigkeit. Es wird keine Haftung übernommen für Schäden durch die Verwendung von Informationen aus diesem Online-Angebot oder durch das Fehlen von Informationen. Dies gilt auch für Inhalte Dritter, die über dieses Angebot zugänglich sind.

On the species status of *Otiorhynchus armadillo* (Rossi, 1792) and *Otiorhynchus salicicola* Heyden, 1908 (Coleoptera, Curculionidae, Entimini)

LUIGI MAGNANO¹, THEODOOR HEIJERMAN² & CHRISTOPH GERMANN^{3*}

¹ Via Montenero 53, 53036 Poggibonsi (Italy), Email: luigimagnano@libero.it

² Generaal Foulkesweg 37, 6703 BL Wageningen (The Netherlands), theodoor.heijerman@wur.nl

³ Mittlere Strasse 14, 3600 Thun (Switzerland), Email: germann.christoph@gmail.com

* Corresponding author

The species *Otiorhynchus salicicola* Heyden, 1908 is resurrected from the recently established synonymy with *O. apenninus* Stierlin, 1883. The lectotypes of *O. salicicola* and *O. apenninus* are designated. As a consequence of the examination of the type, the new synonymy of *O. apenninus* with *O. armadillo* (Rossi, 1792) is established. Furthermore, *O. wellschmiedi* Frieser, 1975 is synonymised with *O. armadillo*. In addition an overview of all synonyms of *O. armadillo* and *O. salicicola*, respectively, is given.

Keywords: Taxonomy, *Otiorhynchus*, *O. armadillo*, *O. salicicola*, new synonyms.

INTRODUCTION

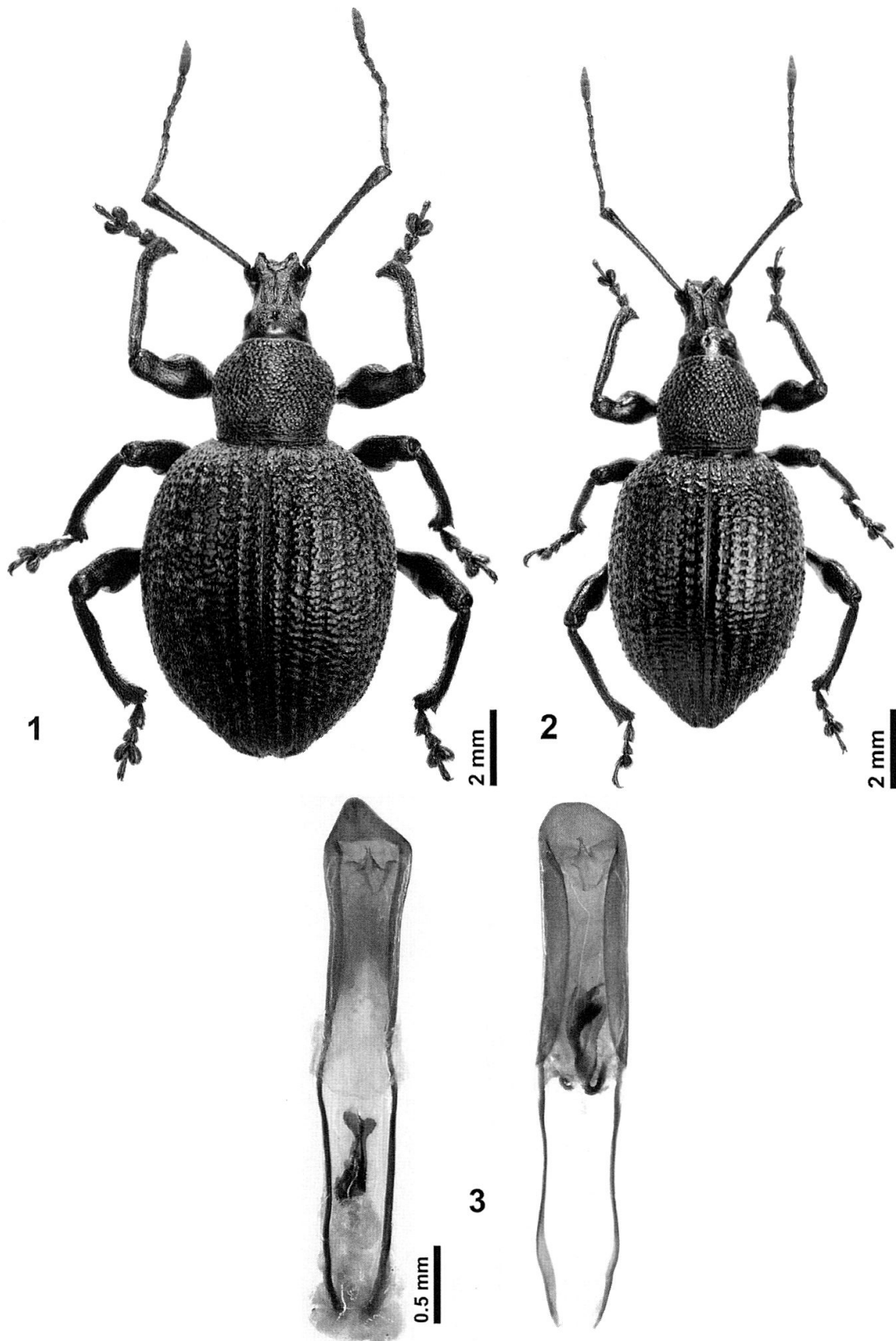
The species *O. apenninus* Stierlin, 1883 and *O. salicicola* Heyden, 1908 were considered synonymous by Reitter (1913), Lona (1932, 1936), Pesarini & Cavallo (2000) and by one of us (Magnano 2001). Lona (1932, 1936) treated *O. apenninus* Stierlin, 1883 and *O. pseudonothus* Apfelbeck, 1897 as «varieties» of *O. salicicola*, while to *O. armadillo* not a single «variety» was attributed.

Pesarini & Cavallo (2000) changed the name *O. salicicola* Heyden, 1908 into *O. apenninus* Stierlin, 1883 because this species was described first, and thus, based on the priority rule, the name *O. salicicola* was abandoned. Furthermore, they considered *O. salicicola* and *O. pseudonothus* as subspecies of *O. apenninus* affirming that they are «sottospecie geografiche ben definite, anche se non perfettamente differenziate». Magnano (2001) changed the name *O. salicicola* into *O. apenninus* without a comment.

The situation of *O. armadillo* is more clear, although this species has a lot of synonyms because of the presence of many, quite distinct populations. However, none of these have any taxonomical relevance.

Barclay (2003) has recorded both species for Great Britain, including a long list of locations. Furthermore he maintained the nomenclature of Lona (1932, 1936).

The discovery of both species, *Otiorhynchus salicicola* Heyden, 1908 (figs. 1–3) and *O. armadillo* (Rossi, 1792) (figs. 3–5) in The Netherlands by one of us (T.H.) led us to verify the species' validity and their distribution in Europe, as well as the validity of all synonyms attributed to the species. The result is surprising, as



Figs. 1–3.— Figs 1 and 2: Habitus of *Otiorhynchus salicicola* Heyden, 1908: 1) male, 2) female. — Fig. 3: Aedeagi of *Otiorhynchus salicicola* Heyden, 1908 (left) and *Otiorhynchus armadillo* (Rossi, 1792) (right) (specimens from Nieuw-Vennep, The Netherlands, 19.07.2007).

the synonyms proposed by Lona (1932, 1936), by Pesarini & Cavallo (2000) and by one of us (Magnano 2001) have to be revised.

The revision of the synonyms and the examination of a large number of *O. salicicola* specimens by one of us (L.M.) revealed that *O. armadillo* (Rossi, 1792) and *O. salicicola* Heyden, 1908 are two well-separated and valid species. *O. well-schmiedi* Frieser, 1975 from Croatia is listed among the synonyms of *O. armadillo*. As a consequence of our findings, the synonyms of the two species have to be modified, which is reported here. All this demonstrates that species with many synonyms have to be treated with special care to avoid the taxonomical complications that we encountered in the present cases.

Because both species are known as pests, some research was done to estimate their range of food plants (Del Bene & Parrini 1986, Landi 1990, 1991). However, as a result no preferences were found, they are both very polyphagous and were imported into a wide area all over Europe.

NOTES ON TAXONOMY AND DISTRIBUTION

***Curculio armadillo* Rossi, 1792**

Curculio armadillo Rossi, 1792: 43

The species was originally described as *Curculio nigrita* Rossi, 1790 and later changed into *Curculio armadillo* Rossi, 1792 by the same author because the name *nigrita* was already occupied by *Curculio nigrita* Fabricius, 1781.

***Curculio sulphurifer* Herbst, 1797**

Curculio sulphurifer Herbst, 1797: 62

The description and the figure confirm the synonymy. It was described from «Italien».

***Curculio orbicularis* Olivier, 1807**

Curculio orbicularis Olivier, 1807: 371, not *Curculio orbicularis* Herbst, 1795: 340

Described upon material from the surroundings of Paris, where it was found only rarely. The figure provided is not really informative, but it shows most likely an *Otiorhynchus* belonging to *armadillo*. Note that the name is a homonym and is not available as it is preoccupied by *O. orbicularis* (Herbst, 1795).

***Otiorhynchus scabripennis* Gyllenhal, 1834**

Otiorhynchus scabripennis Gyllenhal, 1834: 565

This form shows a pronounced elytral sculpture. However, this trait is very variable and in accordance with Apfelbeck (1901) we consider *O. scabripennis* as a synonym of *O. armadillo*. Reitter (1913) also considered *O. scabripennis* as synonym of *O. armadillo*.

***Otiorhynchus obsitus* Gyllenhal, 1834**

Otiorhynchus obsitus Gyllenhal, 1834: 567

This is a form with red femurs that occurs in the mountainous regions of north-eastern Italy, but it does not have any taxonomical value. Reitter (1913) considered *O. obsitus* as an aberration of *O. armadillo*. Lona (1932, 1936) considered it as subspecies of *O. armadillo*.

***Otiorhynchus multipunctatus*: sensu Stierlin, 1858**

Otiorhynchus multipunctatus: sensu Stierlin, 1858: 268

Otiorhynchus (Otiorhynchus) multipunctatus: sensu Stierlin, 1872

Otiorhynchus (Otiorhynchus) multipunctatus: sensu Stierlin, 1872: 340

O. multipunctatus: Stierlin, 1858: 268 and 1872: 340 are erroneous interpretations of *O. armadillo* (Rossi), because with that name, Stierlin intended to describe a species with a striolated last sternite. The «true» *O. multipunctatus* (Fabricius, 1792), which could have been the species Stierlin had in mind (as he wrote an «F.» after the species name), does not fit Stierlin's description and does not occur in Switzerland either. However, Stierlin (1858: 268) described *O. multipunctatus* and mentioned that it was most similar to *O. scabripennis* Gyllenhal. Further he recorded it from Schaffhausen. Stierlin (1872: 340) mentioned the species a second time, but did not change anything concerning its status, nor did he mention any locality. Because *O. scabripennis* is a synonym of *O. armadillo* it can easily be concluded that *O. multipunctatus* Stierlin, 1858: 268 is also a synonym of *O. armadillo* (Rossi, 1792).

***Otiorhynchus (Otiorhynchus) latissimus* Stierlin, 1861**

Otiorhynchus (Otiorhynchus) latissimus Stierlin, 1861: 79

Corresponds to a big sized form without taxonomic relevance living in the Engadine (Switzerland). Considered by Reitter (1913) as synonym of *O. armadillo* «a.» [aberration] *obsitus*, and by Lona (1932, 1936) as synonym of *O. armadillo* «var.» [variety] *obsitus*.

***Otiorhynchus (Otiorhynchus) rhaeticus* Stierlin, 1862**

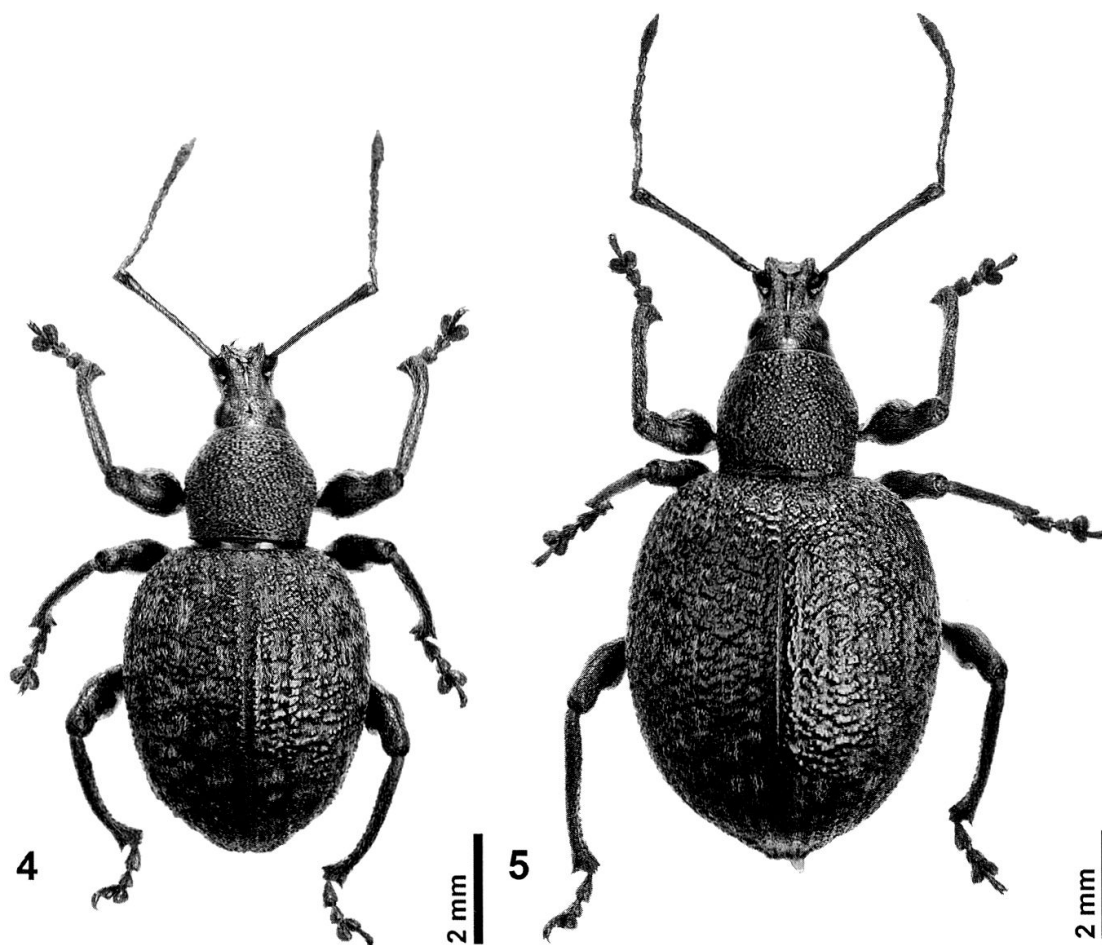
Otiorhynchus (Otiorhynchus) rhaeticus Stierlin, 1862: 358

O. rhaeticus is another form without taxonomic relevance to be found in the Engadine (Switzerland), Trentino Alto Adige (Italy) and Carniola (Austria). Considered by Reitter (1913), Lona (1932, 1936) and by us as synonym of *O. armadillo*.

***Otiorhynchus collinus* Gredler, 1863**

Otiorhynchus collinus Gredler, 1863: 329

O. collinus is another form of *O. armadillo* living in Trentino Alto Adige (Italy). *O. collinus* was compared by Gredler (1863) with the two other forms of *O. armadillo*, *O. rhaeticus* and *O. obsitus*. However, Gredler himself synonymised *O. collinus* in the description with the following sentence: «Ein Bindeglied von *rhaeticus*, *amplipennis* und *obsitus*, die unseres Erachtens nicht wol [sic!] getrennt wer-



Figs. 4–5: *Otiorynchus armadillo* (Rossi, 1792): 4) habitus of male, 5) habitus of female. (specimens from Nieuw-Vennep, The Netherlands, 19.07.2007).

den sollten...». Apart from the synonymy with *O. amplipennis* Fairmaire, 1859 (which is a good species) we agree with the proposition of Gredler and therefore also with the synonymy proposed later by Lona (1932, 1936).

***Otiorynchus (Otiorynchus) apenninus* Stierlin, 1883**

Otiorynchus (Otiorynchus) apenninus Stierlin, 1883: 426

This taxon was supposed to be a subspecies of *O. salicicola* by Lona (1932, 1936). This was the reason for the changes proposed by Pesarini & Cavallo (2000) and Magnano (2001) in nomenclature. The species is just one of the many populations of *O. armadillo* (Rossi, 1792), described from the Apennin. One of us (C.G.) designated the lectotype, in order to preserve stability of nomenclature, based upon the following material: 1 male: «*O. apenninus* [sic!] n. sp. m. [m. = mihi] Ital. Apennin», labelled as: Lectotype *Otiorynchus apenninus* Stierlin, 1883, des. Germann 2001 (printed on red paper) from the Stierlin collection (deposited in the collection of the Deutsches Entomologisches Institut). Reitter (1913) and Lona (1932,

1936) considered *O. apenninus* as «var.» [variety] of *O. salicicola*. These authors started the series of misinterpretations.

***Otiorhynchus (Otiorhynchus) halbherri* Stierlin, 1890**

Otiorhynchus (Otiorhynchus) halbherri Stierlin, 1890: 243

O. halbherri is a small sized form from the prealps of Veneto, some specimens have reddish femurs. Stierlin pasted *halbherri* near to *apenninus* and very close to *armadillo*, *rhaeticus* and *scabripennis*. Reitter (1913), Lona (1932, 1936) and Frieser (1981) considered *O. halbherri* to be a valid species endemic to Monte Baldo (Veneto and Trentino-Alto Adige). However, recently and in accordance with one of us (L.M.), Colonnelli (2003) considered it as a synonym of *O. armadillo*.

***Otiorhynchus ventricola* Weise, 1894**

Otiorhynchus ventricola Weise, 1894: 249

O. ventricola Weise, 1894 is the replacement name for *O. multipunctatus* Stierlin, 1858, preoccupied by *O. multipunctatus* (Fabricius, 1792). Considered by Lona (1936) and by us as synonym of *O. armadillo*.

***Otiorhynchus pseudonothus* Apfelbeck, 1897**

Otiorhynchus pseudonothus Apfelbeck, 1897: 450

O. pseudonothus is another «form» of *O. salicicola* with large and flattened elytra with a regular and dense pubescence. It was described from Switzerland, from southern France, from north-western Italy and from Trentino. After Pesarini & Cavallo (2000) it is a subspecies «discretamente ben definita» of *O. apenninus*. One of us (L.M.) found that the differentiation characters are not constant between *O. salicicola* and *O. pseudonothus*, only in north-eastern Italy the latter form seems to dominate. However, the aedeagus is identical with the one from *O. salicicola* Heyden. Reitter (1913) and Lona (1932, 1936) ranked it as a «variety» of *O. salicicola*.

***Otiorhynchus liguricus* Apfelbeck, 1897**

Otiorhynchus liguricus Apfelbeck, 1897: 451

The species is to be attributed to Apfelbeck, who described the species in literis based on material from Daniel. It is a form of *O. salicicola* that was recognised by Daniel, but not described. It has smaller granuli (especially on the pronotum) and small tomentous tufts on the striae of the elytra. Apfelbeck (1897) stated that he had examined specimens from Monte Grigna, Val Pesio (Daniel's collection), Val Vedro and from Grono, here mixed with specimens of *O. pseudonothus* (collection of the Natural History Museum Bern), and also from St. Martin Lantosque and Digoin. The specimens from Grono and Val Vedro were examined by one of us (C.G.) revealing that they were exclusively *O. salicicola*, in the sense of this present paper. Already Lona (1932, 1936) considered *O. liguricus* as a synonym of *O. salicicola*. Reitter (1913) and Lona (1932, 1936) ranked it as synonym of *O. salicicola* «ab.» [aberration] *apenninus*.

***Otiorhynchus salicicola* Heyden, 1908**

Otiorhynchus salicicola Heyden, 1908: 46

O. salicicola was described by Stierlin 1858 as *Otiorhynchus salicis*. Heyden (1908) replaced the name with *salicicola* because *salicis* was preoccupied by *Curculio salicis* Ström, 1788. Reitter (1913) and Lona (1932, 1936) considered it as a valid species. One of us (C.G.) designated the lectotype, in order to preserve stability of nomenclature, upon the following material: 1 male, «*Gallia* var. *salicis* Stenz», labelled as: Lectotype *Otiorhynchus salicicola* Heyden, 1908, des. Germann 2001 (printed on red paper) from the Stierlin collection (deposited in the collection of the Deutsches Entomologisches Institut). The type locality is not explicitly mentioned in the description. The various localities given there most likely refer to the species distribution in Switzerland, as the title of the whole paper runs «Die schweizerischen Otiorhynchen». Later, in his revision of the European *Otiorhynchus* species (Stierlin 1861: 77), he also mentions the Mont Blanc massif in France to be within the range of *O. salicicola*. To summarize, the lectotype chosen was labelled by Stierlin as «var. *salicis* Stenz.», which perfectly agrees with the first description. Only the type locality «*Gallia*», which refers to France, was not explicitly mentioned in the description, most probably just because Stierlin did not mention any type locality.

***Otiorhynchus* (s. str.) *wellschmiedi* Frieser, 1975**

Otiorhynchus (s. str.) *wellschmiedi* Frieser, 1975: 5

The species was described from Opatija (Istria, Croatia). A paratype from the Luigi Magnano collection was examined, with the result that it is a big sized form of *O. armadillo* without any taxonomical relevance.

LIST OF SYNONYMS

***Otiorhynchus armadillo* (Rossi, 1792)**

- Curculio nigrita* Rossi, 1790: 133, not *Curculio nigrita* Fabricius, 1781: 229
Curculio armadillo Rossi, 1792: 43, replacement name for *Curculio nigrita* Rossi, 1790: 133
Curculio sulphurifer Herbst, 1797: 62
Curculio orbicularis Olivier, 1807: 371, not *Curculio orbicularis* Herbst, 1795: 340
Otiorhynchus scabripennis Gyllenhal, 1834: 565
Otiorhynchus obsitus Gyllenhal, 1834: 567
Otiorhynchus multipunctatus sensu Stierlin, 1858: 268
Otiorhynchus (*Otiorhynchus*) *latissimus* Stierlin, 1861: 79
Otiorhynchus rhaeticus Stierlin, 1862: 358
Otiorhynchus collinus Gredler, 1863: 329
Otiorhynchus (*Otiorhynchus*) *apenninus* Stierlin, 1883: 426, syn. nov.
Brachyrrhinus apenninus Fauvel, 1885: 288
Brachyrrhinus latissimus Fauvel, 1885: 298
Brachyrrhinus obsitus Fauvel, 1885: 298
Brachyrrhinus scabripennis Fauvel, 1885: 298
Otiorhynchus (*Otiorhynchus*) *halbherri* Stierlin, 1890: 243
Otiorhynchus ventricola Weise, 1894: 249, replacement name for *Otiorhynchus multipunctatus* sensu Stierlin, 1858: 269
Otiorhynchus (s. str.) *wellschmiedi* Frieser, 1975: 5, syn. nov.

Distribution of *O. armadillo*: Austria, Croatia, Czech Republic, France, Germany, Hungary, Italy, Poland, Romania, Slovenia, The Netherlands, Sweden, Switzerland, United Kingdom.

***Otiorhynchus salicicola* Heyden, 1908**

- Otiorhynchus salicis* Stierlin, 1858: 266 not *Curculio salicis* Ström, 1788: 57
Otiorrhynchus pseudonothus Apfelbeck, 1897: 450
Otiorrhynchus liguricus Apfelbeck, 1897: 451
Otiorrhynchus (Otiorrhynchus) salicis var. *pseudonotus* [incorrect spelling]: Heyden, Reitter & Weise, 1906: 593
Otiorrhynchus salicicola Heyden, 1908: 46 replacement name for *Otiorhynchus salicis* Stierlin, 1858: 266
Otiorhynchus (Otiorhynchus) salicicola: Reitter, 1913: 42
Otiorhynchus (Otiorhynchus) salicicola «a.» *apenninus*: Reitter, 1913: 42 [misidentification]
Otiorhynchus (Otiorhynchus) salicicola «v.» *pseudonotus* [incorrect spelling]: Reitter, 1913: 42
Otiorhynchus (Otiorhynchus) salicicola «v.» *pseudonotus* [incorrect spelling]: Lona, 1932: col. 1406 [misidentification]
Otiorhynchus (Otiorhynchus) salicicola «v.» *apenninus*: Lona, 1932: col. 1406 [misidentification]
Otiorhynchus (Otiorhynchus) salicicola «v.» *apenninus*: Lona, 1936: 79 [misidentification]
Otiorhynchus (Otiorhynchus) salicicola «v.» *pseudonotus* [incorrect spelling]: Lona, 1936: col. 1405 [misidentification]
Otiorrhynchus (s. str.) salicicola var. *pseudonotatus* [incorrect spelling]: Hoffmann, 1950: 53, 60
Otiorhynchus (Otiorhynchus) apenninus: Pesarini & Cavallo, 2000: 42, replacement name for *Otiorhynchus salicicola* Heyden, 1908: 46 [misidentification]
Otiorhynchus (Otiorhynchus) apenninus subsp. *salicicola*: Pesarini & Cavallo, 2000: 42 [misidentification]
Otiorhynchus (Otiorhynchus) apenninus subsp. *pseudonotus* [incorrect spelling]: Pesarini, 2000: 43 [misidentification]
Otiorhynchus (Otiorhynchus) apenninus: Magnano, 2001: 76 [misidentification]

Distribution of *O. salicicola*: Austria, France, Germany, Italy, Slovenia, Switzerland, The Netherlands, United Kingdom.

ACKNOWLEDGEMENTS

We thank Charles Huber (Natural History Museum of Bern) for the possibility to work in the collection and Lutz Behne (Deutsches Entomologisches Institut, Müncheberg) for the loan of type material and for providing literature. We also thank Peter Sprick (Hannover) for revising the manuscript.

ZUSAMMENFASSUNG

Die erst kürzlich etablierte Synonymie von *Otiorhynchus salicicola* Heyden, 1908 mit *O. apenninus* Stierlin, 1883 wird aufgehoben. Die Lectotypen von *O. salicicola* und *O. apenninus* wurden designiert. Als Konsequenz der Untersuchung des Typus wird die neue Synonymie von *O. apenninus* mit *O. armadillo* (Rossi, 1792) etabliert. Im Weiteren wird *O. wellschmiedi* Frieser, 1975 mit *O. armadillo* synonymisiert. Zusätzlich werden alle bisherigen Synonyme der beiden Arten *O. armadillo* und *O. salicicola* aufgeführt.

REFERENCES

- Apfelbeck, V. 1897. Kritike rasprave o evropiskim vrstama Otiorrhyncha — Glasnika zemaljskog muzeja u Bosni i Hercegovini IX: 447–456.
 Apfelbeck, V. 1901. Kritische Abhandlungen über europäische *Otiorhynchus*-Arten. I. Verwandte des *armadillo* Rossi. II. Die Verwandtschaft des *Ot. alutaceus* Germ. mit *Ot. goerzensis* Hbst. und *Ot. spatatrensis* Schh. — Verhandlungen der K. K. zoologisch-botanischen Gesellschaft in Wien: 530–540.
 Barclay, M. 2003. *Otiorhynchus (s. str.) armadillo* (Rossi, 1792) and *Otiorhynchus (s. str.) salicicola* Heyden, 1908 (Curculionidae: Entiminae: Otiorhynchini) - two European vine weevils established in Britain. — The Coleopterist 12 (2): 41–56.

- Colonnelli, E. 2003. A revised checklist of Italian Curculionoidea (Coleoptera). — *Zootaxa* 337: 142 pp.
- Del Bene, G. & Parrini, C. 1986. Note sulla biologia di specie di *Otiorrhynchus* (Coleoptera, Curculionidae) dannose a piante ornamentali in vivai della Toscana. — *Redia* 49: 341–359.
- Fauvel, A. 1885. Rectifications au Catalogus Coleopterorum Europae et Caucasi (Suite). — *Revue d'Entomologie*, Caen 4 (10): 285–310.
- Frieser, R. 1975. Ein neuer *Otiorrhynchus* aus Istrien. — *Nachrichtenblatt Bayerischer Entomologen* 24: 5–6.
- Frieser, R. 1981. *In*: Freude, H., Harde, K. W. & Lohse, G. A. Die Käfer Mitteleuropas. — Band 10: 184–223, Goecke & Evers, Krefeld.
- Gredler, V. M. 1863. Die Käfer von Tirol nach ihrer horizontalen und vertikalen Verbreitung verzeichnet. — I: 300–375, J. Eberle, Bozen.
- Gyllenhal, L. 1834. *In*: Schoenherr, C.J. Genera et species curculionidum, cum synonymia hujus familiae. Species novae aut hactenus minus cognitae, descriptionibus a Dom. Leonardo Gyllenhal, C.H. Boheman, et entomologis aliis illustratae. — Vol. 2(2): 329–669, Roret, Paris.
- von Heyden, L. 1908. Bemerkungen und Berichtigungen zum Catalogus Coleopterorum Europae, Caucasi et Armeniae Rossicae. — *Wiener Entomologische Zeitung* 27 (1): 43–48.
- von Heyden, L., Reitter, E. & Weise, J., 1906. Catalogus Coleopterorum Europae, Caucasi et Armeniae Rossicae. Editio secunda. — Edmund Reitter, Berlin-Paskau-Caen. 774 pp.
- Herbst, J. F. W. 1797. Natursystem aller bekannten in- und ausländischen Insekten, als eine Fortsetzung der von Büffonschen Naturgeschichte. Die Käfer. Siebenter Theil. Mit 26 illuminirten Kupfertafeln. — Berlin. 346 pp. (*Otiorrhynchus*: 60–63).
- Hoffmann, A. 1950. Faune de France. 52. Coléoptères Curculionides. — Paris, Lechevalier, 486 pp.
- Landi, S. 1990. Possibilità di controllo biologico di *Otiorrhynchus* spp. su piante ornamentali in vivaio. — *Redia* 78 (2): 261–273.
- Landi, S. 1991. Contributo alla conoscenza di *Otiorrhynchus salicicola* Heyd. (Coleoptera Curculionidae). — *Redia* 74 (1): 127–134.
- Lona, C. 1932. *In*: Winkler, A. (Ed.). Catalogus Coleopterorum regionis palearcticae, pars 12: 1393–1520. — A. Winkler, Wien.
- Lona, C. 1936. *In*: Junk, W. & Schenkling, S. (Eds.). Coleopterorum Catalogus auspiciis et auxilio Pars 148. Curculionidae: Otiorrhynchinae I, pars secunda. — Junk, Berlin, 226 pp.
- Magnano, L. 2001. Sulla posizione sistematica di alcuni *Otiorrhynchus* Germar, 1822, con note sinonimiche e designazione di lectotipi. (Coleoptera, Curculionidae). (XXXVIII contributo alla conoscenza dei Curculionidi). — *Bollettino del Museo Civico di Storia Naturale di Verona* 25, Botanica Zoologia: 63–81.
- Olivier, A. G. 1807. Entomologie, ou histoire naturelle des insectes, avec leur caractères généraux et spécifiques, leur description, leur synonymie, et leur figure enluminée. Coléoptères. Tome 5. — Desray, Paris, 612 pp.
- Pesarini, C. & Cavallo, O. 2000. I Coleotteri «Curculionidi» del Museo Civico «F. Eusebio». — *Alba Pompeia* 21 (2): 29–70.
- Reitter, E. 1913. Bestimmungs-Tabellen der europäischen Coleopteren. LXIX Heft (69). Curculionidae (20. Teil). Die ungezähnten Arten der Gattung *Otiorrhynchus*. — *Wiener Entomologische Zeitung* 32 (2–3): 25–118.
- Rossi, P. 1790. Fauna estrusca sistens insecta quae in provinciis florentina et pisana praesertim collegit. — Liburni, Typis Thomae Masi & Sociorum, Praesidium facultate, XXII + 272 pp.
- Rossi, P. 1792. Mantissa insectorum exhibens species nuper in Etruria collecta a Petro Rossio adjec-tis faunae etruscae illustrationibus, ac emendationibus. — Polloni, Pisis, 148 pp.
- Stierlin, G. 1858. Die Schweizerischen Otiorrhynchen. — *Berliner Entomologische Zeitung* 2: 250–310.
- Stierlin, G. 1861. Revision der Europäischen *Otiorrhynchus*-Arten. — *Berliner Entomologische Zeitschrift* 5, Beiheft: 1–344.
- Stierlin, G. 1862. Erster Nachtrag zur Revision der Europäischen *Otiorrhynchus*-Arten. — *Berliner Entomologische Zeitschrift* 6: 358–378.
- Stierlin, G. 1872. Dritter Nachtrag zur Revision der Europäischen *Otiorrhynchus*-Arten. — *Berliner Entomologische Zeitschrift* 16: 321–368.
- Stierlin, G. 1883. Bestimmungstabellen der Europäischen Coleopteren. IX Curculionidae. — *Mitteilungen der Schweizerischen Entomologischen Gesellschaft* 6 (8 & 9): 403–645.
- Stierlin, G. 1890. Bemerkungen über Curculioniden und Beschreibung neuer Arten. — *Mitteilungen der Schweizerischen Entomologischen Gesellschaft* 8 (6): 240–247.
- Weise, J. 1894. Bemerkungen über einige in den Karpathen gesammelte oder verwandte Arten. — *Deutsche Entomologische Zeitschrift* (1–2): 248–250.

(received April 22, 2008; accepted August 26, 2008)