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Assesment of the checkered beetles (Coleoptera: Cleroidea: Cleridae) from eleven Romanian collections: biodiversity, distribution, and museology

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Abstract. Over the last 19 years, more entomological collections containing Cleridae material have been investigated by the author. This work presents data concerning 499 specimens belonging to 29 species, as parts of 11 entomological collections. The collections include 29 Western Palaearctic species belonging to 12 genera (out of a total of 13 genera and 27 species recorded in Romania to date). The collecting interval ranges from 1883 (The “Iosif Màllasz” Collection) until 2019 (The “Grigore Antipa” National Museum of Natural History's Coleoptera study collection). Even if some of the material was collected abroad and, in many cases, the specimen data is incomplete or missing, the material's good conservation status and the data pertaining to it are essential as museological patrimony and, in the case of the Romanian specimens, as biodiversity vouchers.

Key words: Cleridae, Romania, museology, collections.

Introduction

In the 11 collections investigated, most of the pieces are Romanian species, *T. apiarius* being the most collected, other Western palaearctic taxa being less represented. Most of the pieces bear complete identification and collecting data, but some of them lack most if not all the data concerning them, because, at the time that the collections from which they were part of were used mostly as comparison material. In some cases (unacceptable according to the current standards) the specimens bore only a catalogue number – which, as many authors underlined – is not a good practice, because if the catalogue is lost, all the data concerning those specimens will be also irremediably lost.

Also, a case of overcollecting is reported hereby, to be considered as a warning against local biodiversity loss by unethically population sampling, even in the case of well-known and common species.

Material and methods

The material was examined, and the morphological, nomenclatural, and zoogeographical data were compared to the literature (Gerstmeier 1998, Corporaal 1950, Löbl et al. 2007). In the case of old collections, additional data were provided by the collection's curators and by colleagues. The data were compiled, compared to the literature (where available) (Manolache 1930) and catalogued, its' analysis being more or less accurate due to the lack of completeness of the archived information – in some cases, only a catalogue number associated with the specimen or even any information at all is available. The taxa were ordered according to the Opitz's classification system (Opitz 2010), the specimens' data being ordered chronologically, and the examined collection being ordered in alphabetical order. The spatio-temporal distribution of the examined specimens was plotted on a UTM distribution map, according to the appropriate source (Lehrer & Lehrer 1990). The hungarian and saxon toponyms (where necessary) were translated and cross-checked with the appropriate sources (Suciu 1967, 1968).

Abbreviations:

Leg(it) = collected (by)
sic! = right so (lat.)
spec(s) = specimen(s)
s.d. (sine data) = without data
sub nom. (sub nomen) = named / identified as (used for synonims)

BZ = Buzău; CJ = Cluj; CL = Călăraşi; CS = Caraş-Severin; CT = Constanţa; CV = Covasna; GR = Giurgiu; HD = Hunedoara; HR = Harghita; IL = Ialomiţa; IF = Ilfov; MH = Mehedinţi; NT = Neamţ; PH = Prahova; SB = Sibiu; SM = Satu Mare; SV = Suceava; VN = Vrancea; VS = Vaslui; TL = Tulcea; TM = Timişoara; VS = Vaslui.

A.G. = Adrian Gagiu; A.-L.M. = Arnold-Lucien Montandon; A.P. = Alexandra Popa; A.P.-B. = Andrei Popvici-Bâznoşanu; A.R. = Atena Roşca; A.T. = Adalbert Tokàcs; Ar.-P. = Arion-Panin (George Arion & Sergius Panin); B. = Birthler; C.A. = Costică Adam; C.C. = Cristina Constantinescu; C.S. = Cătălin Stanciu; D.K. = Deszö (Dénes) Kenderessy; D.N.S. = Dr. Nicolae Săvulescu; E.E. = Eduard Eppelsheim; E.F. = Eduard Fleck; E.I. = Elena Iorgu; E.R. = Edmund Reitter. F.D. = Friedrich Deubel; F.E.P. = Franz Ernest Pipitz; F.T. = Florentina Togănel; G.C. = Gabriel Chişamera; G.P. = Gheorghe Paina; I.C. = Igor Ceianu; I.F. = Imre Frivaldzsky; I.I. = Ionuţ Iorgu; I.K. = Istvan Konya; I.M. = Iosif Màllasz; K.S. = Kàroly Sajó; L. = Lăzărescu; L.G. = Ludwig Ganglbauer; L.O.P. = Luis Ovidiu Popa; M.-A.I. = Mircea-Alexandru Ieniştea; M.B. = Mihai Brădescu; M.S. = Mihai Stănescu; M.V. de B. = Marcel Vauloger de Beaupré; P.I. = P. Istrate; R.C. = Richard Canisius; R.S. = Rodica Serafim; S = Solovăstru; T. = Thalhammer; V.G. = Viorel Gavril; V.V. = V. Vicol;

DMNS = Deva Museum of the Dacian and Roman Civilisations, The Natural Sciences Department
DZLC = The Descriptive Zoology Laboratory of the Bucharest Faculty of Biology Collection

GAHC = “Grigore Antipa” National Museum of Natural History – The Historical collection containing material from the collections:

GAHC - ALM = “Arnold-Lucien Montandon”

GAHC – DK = “Dionys Kenderessy”

GAHC – EF = “Eduard Fleck”

GAHC – GA/RC = “Grigore Antipa” and / or “Richard Canisius”

GAIC = “Grigore Antipa” National Museum of Natural History – The “Igor Ceianu” collection

GASC = “Grigore Antipa” National Museum of Natural History – The Coleoptera study collection

MAIC = Mircea Alexandru Ieniştea Collection

PMNS = Argeş Departmental Museum of Piteşti, Natural Sciences Section

SZSC = Sinaia Zoological Stationary Entomological Collection

TCMO = “Ţării Crişurilor” Museum in Oradea

TMNS = Tîrgu Mureş Natural Sciences Museum

TNSM = Tulcea Natural Sciences Museum

Results

Class: Insecta

Order: Coleoptera

Suborder: Polyphaga

Suprafamily: Cleroidea

Family: Cleridae Latreille, 1802

Subfamily: Clerinae Latreille, 1802

Genus: *Clerus* Geoffrey, 1762

Species: *C. mutillarius* Fabricius, 1775

DMNS: 1 spec., Banat, 1885, leg. B., 1 spec., Kalocsa (sic!), 1891, leg. T., 1 spec., 1891, leg. B., 1 spec., Râu de Mori (HD), 30.VI.1928, leg. I.M., 1 spec. s.d.; **DZLC:** 1 spec., Cotroceni (Bucharest)(IF); **GAHC-ALM:** 2 specs, Comana (GR), leg. A.-L.M.; 3 specs, Bucharest, leg. A.-L. M., 1 spec., Besançon (France), leg. A.-L.M.; **GAHC-DK:** 2 specs, Transsylvania, leg. D.K.; **GAHC-EF:** 1 spec., Germany, leg. E.F. [2561] / (84937); **GAHC-GA/RC**: 1 spec., V., Periş (IF); **GAIC:** 1 spec., Snagov (IF), 21.V.1950; 1 spec., Timişoara, Verde forest (TM), 3.V.1960; 1 spec., Huşi, Voloşeni (VS) (sic!), 10.V.1967; 1 spec. s.d.; **GASC:** 2 specs, Canaraua Fetii (CT), 10.VI.2015, leg. M.S.; 3 specs, Hagieni (CT), 14.VI.2013, leg. I.I.; 2 specs, Runcu (Eolian Park) (CT), 26.VI.2018, leg. C.S.; 1 spec., Ivrinezu Mare (CT), 24.VI.2017, leg. V.G.;1 spec., Podeni (MH), 10.VI.2015, leg. G. C.; 1 spec., Cocoş Monastery (TL), 15.V.1985, leg. D.N.S. ; 3 specs (from a mixed *Tilia* sp. – *Quercus* sp. forest), Slava Rusă (TL), 7.VII.2018, leg. C.S.; **MAIC:** 1 spec., Boys Lyceum yard, Târgovişte (DB), 1 spec. s.d.; **TMNS:** Meseş Mts. (HR), 3 specs, VI.1967, leg. A.T.; **TNSM:** 2 specs., leg. D.N.S.

Genus: *Opilo* Latreille, 1802

Species: *O. domesticus* (Sturm, 1837)

DMNS: 1 spec., Tavarnok (Tovarníky, Slovakia), 1893. leg. Kelecs. (sic!), 2 specs, Tavarnok (Tovarníky, Slovakia); **GAHC-ALM:** 1 spec., Alsace (France), leg. A.-L.M. [2557] / (84933); 1 spec., Besançon (France), A.-L.M.

Species: *O. mollis* (Linnaeus, 1758)

DMNS: 1 spec., Turnu Roşu (SB), 26.V.1884; 1 spec., Remetea, 1887; 1 spec. Turnu Roşu (SB), 1891; 1 spec., Turnu Roşu (SB); **GAHC-ALM:** 1 spec., Alsace (France), leg. A.-L.M. [2558] / (84934); **GAIC:** 1 spec., Nana (CL), 18.V.1991, leg. I.C.; **MAIC**: 1 spec., Baia Sprie (MM), 25-30. V. 1939; **TMNS:** 1 spec., Zălan (CV) leg. A.T.; 3 specs s.d.; **TNSM:** 2 specs., Băile Herculane (CS), 27.V.1978, leg. D.N.S.;

Species: *O. pallidus* (Olivier, 1795)

DMNS: 1 spec. Carinthia (Austria); 1 spec. Carinthia (Austria), 1891, leg. T.; **MAIC:** 1 spec., 14. VII. 1933, Valea Cerbului (Băile Herculane) (CS), leg. M.-Al.I.;

Species: *O. taeniatus* (Klug, 1842)

DMNS: 1 spec. Kalocsa sic!, 1888, leg. T.; 1 spec., Kalocsa (sic!), 1892, leg. T.; 1 spec., Kalocsa (sic!), 1894, leg. T.; 1 spec., Kalocsa (sic!), leg. T.; **GAHC-EF:** 1 spec., Lăculeşti, leg. E.F.; [2560] / (84936) 1 spec., Haţeg (CT), leg. E.F.

Genus: *Thanasimus* Latreille, 1806

Species: *T. femoralis* (Zetterstedt, 1828)

DMNS: 1 spec., Mecklenburg (Germany); 1 spec., Mecklenburg (Germany), 1889, leg. E.E.;1 spec., Wechsel Mts. (Austria), 1888, leg. L.G.; **GAHC-EF**: 1 spec., Azuga (PH), leg. E.F. [2562] / (84938).

Species: *T. formicarius* (Linnaeus, 1758)

DMNS: 1 spec., VIII.1886, Bistra; 4 specs, s.d.; [2563] / (84939) ; **DZLC:** 1 spec., Cotroceni (Bucharest) (IF) (sub. nom. *Clerus*); **GAHC-ALM**: 2 specs, Carpathian Mts., Northern Ialomiţa; 2 specs, Bârlad river valley; 2 specs, Comana (GR); 1 spec., Besançon (France); **GAHC-DK:** 3 specs, leg. D.K.; **GAHC GAHC-EF:** 4 specs, Azuga (PH), leg. E.F.; **GAHC-GA/RC**: 2 specs, Bucharest (IF), leg. R.C.; 1 spec., Periş (IF), V ; **MAIC:** 3 specs, Bolvaşniţa (CS), 4. VII. 1932; 5 specs, Parâng Mts., 10. VII. 1933; 1 spec., Bolvaşniţa (CS), 15. VIII. 1933, 1 spec. s.d.; **PMNS:** 1 spec., Retezat Mts., 14.VI.1955, leg. D.N.S.; 2 specs, Şaua Apei, 14.VIII. 1955, leg. D.N.S.;

Genus: *Trichodes* Herbst, 1792

Species: *T. alvearius* (Fabricius, 1792)

DMNS: 1 spec., Austria; 1 spec. Stettin, 1889; 2 specs s.d.; **GAHC-ALM**: 1 spec., Besançon (Jura) (France), 28.6.80, leg. A.-L.M.; [2567] / (84943); **GAHC-DK**: 1 spec., leg. D.K.; **GAHC-EF:** 1 spec., Limburg (Netherlands), 27.VII., leg. E.F.

Species: *T. ammios* (Fabricius, 1787)

DMNS: 1 spec., Italia, 1889, *leg.* F.E.P.; **GAHC-ALM:** 2 specs, Oued Riou, Oran (Algeria), leg. M.V. de B.; 1 spec., Algeria, leg. A.-L.M. [2571] / (84947); **GAHC-DK:** 2 specs, leg. D.K. [2568] / (84944);.

Species: *T. apiarius* (Linnaeus, 1758)

DMNS: 1 spec., VI.1885, Sibiu (SB); 1 spec. 1886; 1 spec., Monsta, 1905; 1 spec., Arad (AR), 1905; 1 spec., Pacs (Hungary), 20.IV.1905; 1 spec., Eger (Hungary), 1905, leg. I.M.; 1 spec., Deva (HD), 1910-1913, leg. I.M.; 1 spec., Râu de Mori (HD), 30.VI.1928, leg. I.M.; 1 ex. Tismana (GJ), 1929, leg. I.M.; 4 ex., Deva (HD), Col. Mallasz; 2 specs without other data, Col. Mallasz.; 1 spec. s.d.; **DZLC:** 1 spec., Bucureşti (IF); **GAHC-ALM:** 2 specs, Măcin (TL), leg. A.-L.M.; 1 spec., Duernstein a/Donau, Nieder-Oesterreich (Austria); 1 spec., Besançon (France); 1 spec. s.d.; [2565] / (84941); **GAHC-DK:** 1 spec., Transilvania; 2 specs, Haţeg (CT); **GAHC-EF**: 1 spec., Piteşti (AG); 1 spec., Drobeta Turnu Severin (MH); 1 spec. Azuga (PH); **GAHC-GA/RC**: 1 spec., VII, S. Grâuşor (sic !); 1 spec., IV., S. Brassov (Braşov) (BV); 1 spec., VI, S. Ferestrau (sic!) (Herăstrău / Mihai I park); 1 spec., S. Novaci (sic !); 2 specs., leg. R.C., VII, Torzburg [Bran Castle]; **GAIC:** 1 spec., Fundu Aţei (NT), 14.VII.1949; 1 spec., Câmpulung Moldovenesc, Carasu (SV), 22.VII.1952; 1 spec., Broşteni, Drăgoiasa (SV), 26.VII.1958; 1 spec., Baba Novac (SM), 26.VII.1960; 2 specs, Câmpulung Moldovenesc, Poiana Boba (SV),

17.VII.1962; 1 spec., Câmpulung Moldovenesc, Carasu (SV), 20.VIII.1962; 1 spec. Bogdana (Voloşeni) (VS), 16 – 20 (sic!).V.1968; 2 specs s.d.; **GASC:** 2 specs, Pasărea (IF), 28.IV.1951, leg. D.N.S.; 1 spec., Băile Herculane (CS), 10.VI.1951, leg. D.N.S.; 1 spec., Timişoara (Pădurea Verde) (TM), 13-15.VI.1951, leg. D.N.S.; 2 specs, Băile Herculane (CS), 26.VI.1970, leg. A. R.; 1 spec., Argineşti Forest (Gura Motrului) (MH), 23.VI.1983, leg. D.N.S.; 1 spec., Cheile Râmeţului (AB), 02.VI.2012, leg. I.I.; 1 spec., Soveja, Cremeneţ river valley (VN) 12.VI.2014, leg. C.C.; 2 specs, Ungureanca river (Cremeneţ river tributary) (VN), 20.VI.2014, leg. C.C.; 1 spec., Munţii Măcin (Vf. Moroianu, Greci) (TL) 23.VI.2014, leg. E.I.; 1 spec., Tălmaciu, Şuvara Saşilor (SB), 2.VII.2014, leg. C.C.; 2 specs, Soveja (VN), 25.VII.2014, leg. C.C.; 2 specs, Soveja (Pârâul Ungureanca) (VN), 26.VII.2014, leg. C.C.;1 spec. ROSCI Frumoasa, Dobra river valley (SB), 16.VIII.2014, leg. C.C.; 1 spec., Valea Dobrei (SB), 16.VIII.2014, leg. C.A.; 2 specs, Cheile Şugăului - Munticelu (NT), 27.VI.2015, leg. C.A.; 1 spec., Retezat Mts. (Gemenele Scientific Reserve) (HD), 03.VII.2015, leg. C.A.; 1 spec., Cheile Şugăului - Munticelu (NT), 08.VIII.2015, leg. V.G.; 1 spec., Dăbâca (CJ), 13.VI.2017, leg. A.P.; 19 specs (sic!), Ivrinezu Mare (CT), 24.VI.2017, leg. V.G.; 8 specs, Ivrinezu Mare (CT), 05.VII.2017, leg. V.G.; 2 specs, Brebu (BZ), 19.VI.2018, leg. L.O.P.; 1 spec, Brebu Mănăstirii (PH), 18.VII.2019, leg. R.S.; 2 specs, Băile Herculane (CS), leg. D.N.S.; **MAIC:** 1 spec., Bucureşti, Lic. Cantemir; 1 spec., Lic. Băieţi Blaj; 4 specs, Valea Răstoliţei, 12. VII. 1931; 1 spec., Ocna Sibiului (SB); 1 spec., Braşov (BV), 15. VII. 1930; **PMNS:** 1 spec., Băile Herculane (CS), 12.VII.1960, leg. D.N.S.; 1 spec., Băile Herculane (CS), 7.VIII.1960, leg. D.N.S.; 1 spec., Băile Herculane (CS), 15.VI.1965, leg. D.N.S.; **SZSC:** 1 spec., Borsec (HR), 24.VI.1932, leg. A.P.-B. (?); **TCMO:** 1 spec., Salonta (BH) (from the field), 15.VI.1960; 1 spec., Salonta (BH) (str. Cloşca nr. 10, on *Rosa* sp.), 10.V.1962; 1 spec., Oradea, Pály-Erdõ [Paleu forest] (BH), 4.V.1965; 2 specs, Răbăgani (BH), 2.VI.1973, leg. G.P.; 2 specs, Păd. Săldăbagiu (BH) (on flowers, on the hill), 22.V.1966; 1 spec., Băile 1 Mai (Băile Peţa) (BH), (on *Fagus* spp. leaves), 19.VI.1958; 1 spec., Băile 1 Mai (BH), 25.VI.2003, leg. A.G.; **TMNS:** 1 spec., Zălan (CV), V.1958, leg. A.T.; 1 spec., Târgu Mureş, Hipodrom (MS),

1.VI.1965, leg. I.K.; 1 spec., Tîrgu Mureş (MS), IV.1967, leg. V.V.; 1 spec., Sovata (MS), 23.VII.1982, leg. V.V.; 3 specs, Răstoliţa (MS), 8.VI.1993, leg. F.T.; Băile Herculane (CS), 1 spec., Sântana (MS), 8.VII.1994, leg. V.V.; 1 spec., Stânceni (MS), 26.VI.1999, leg. F.T.; 1 spec., 4.VI.1995, leg. F.T.; 1 spec., 30.VI.1995, leg. F.T.; 2 specs, Vaidacuta (Suplac) (MS), 8.VII.1995, leg. F.T.; 1 spec., Târnăveni (MS), VI.1997, leg. V.V.; 1 spec., 28.VI.1998, leg. F.T.; 1 spec., Reghin (MS), 20.V.2000, leg. P.I. at 500 m; 1 spec., 11.VII.2001, leg. S.; **TNSM:** 4 specs., Letea (TL), 25.VI.1962, leg. D.N.S., 1 spec., Letea (TL), 28.VI.1962, leg. D.N.S., 3 specs., C.A. Rosetti (TL), 11.VII.1980, leg. M.B., 2 specs., C.A. Rosetti (TL), 12.VII.1980, leg. M.B., 2 specs., C.A. Rosetti (TL), 17.VII.1980, leg. M.B., 2 specs., C.A. Rosetti (TL), 18.VII.1980, leg. M.B., 3 specs., C.A. Rosetti (TL), 19.VII.1980, leg. M.B.

Species: *T. crabroniformis* (Fabricius, 1787)

DMNS: 2 specs s.d., Turkey.

Species: *T. favarius* (Illiger, 1802)

DMNS: 1 spec., Hungary, 1886, leg. K.S.,1 spec. s.d.; **GAHC-ALM:** 1 spec., Turpine (Italy) [2566] / (84942); **GAIC:** 1 spec., Cerhat (SM), 21-24.IV.1964 (sic!); 2 specs., Cernica (IF), 25.VI.1987; 1 spec. s.d.; **GASC:** 1 spec., Cheile Şugăului (Munticelu) (NT), 12.VII.2015, leg. C.A.; 3 specs, Argineşti forest (Gura Motrului) (MH), 23.VI.1983, leg. R.S.; 5 specs, Băile Herculane (CS), leg. D.N.S.; 4 specs, Hagieni forest (CT), leg. D.N.S.; **TNSM:** 5 specs., Băile Herculane (CS), 5.VII.1970, leg. D.N.S.

Species: *T. octopunctatus* (Fabricius, 1787)

GAHC-DK: 1. spec., leg. D.K. [2570] / (84946);

Species: *T. punctatus* Fischer von Waldheim, 1829

Aberration: *T. punctatus* ab. *viridifasciatus* Chevrolat, 1843

GASC: 1 spec., Argineşti forest (Gura Motrului) (MH), 23.VI.1983, leg. R.S.; **TMNS:** 1 spec., Răcătău, VII.1969, leg. L. (sub nom. *T. apiarius*).

Species: *T. quadriguttatus* Adams, 1817

GAHC-ALM: 1 spec., Măcin (TL), leg. A.-L.M. [2572] / (84948); **GAHC-EF:** 1 spec., Dobroudja; **GAIC:** 1 spec., Hagieni (CT), 21.VI.1964; **GASC:** 3 specs, Hagieni (CT), 14.VI.2013, leg. I.I.; 2 specs, Canaraua Fetii (CT), 10.VI.2015, leg. M.S.; 1 spec., Ivrinezu Mare (CT), 24.VI.2017, leg. V.G.; 2 specs, Runcu Aeolian Park (CT), 26.VI.2018, leg. C.S.; **MAIC:** 2 specs, Ecrene (Bulgaria), 19. VII. 1935, leg. Ar.-P.; **PMNS:** 5 specs, Hagieni (CT), 18.VI.1967, leg. D.N.S.; **TNSM:** 2 specs., Hagieni (CT), 12.VI.1961, leg. D.N.S.; 4 specs., Hagieni (CT), 15.VI.1961, leg. D.N.S.; 1 spec., Hagieni (CT), 4.VI.1962, leg. D.N.S.

Species: *T. umbellatarum* (Olivier, 1795)

GAHC-ALM: 1 spec., Algeria (Philippeville), leg. A.-L.M.; 1 spec., Algeria (Atlas Mts.), leg. A.-L.M. [2569] / (84945); **GAHC-DK:** 2 specs s.d.

Subfamily: Korynetinae Laporte De Castelnau, 1836

Genus: *Korynetes* Herbst, 1792

Species: *K. caeruleus* (DeGeer, 1775)

DMNS: 1 spec., Austria, 1884, leg. F.E.P.; (sub. nom. *Corynetes*) [2573] / (84949); **DZLC:** 1 spec., Sinaia (PH) (sub. nom. *Corynetes*); **GAHC-ALM:** 1 spec., Măcin (TL), leg. A.-L.M.; 1 spec., leg. A.-L.M.; **GAHC-DK:** 1 spec., Dalmatia, leg. D.K.; 5 specs, Haţeg (CT), leg. D.K.; **GAHC-EF:** 4 specs, Azuga (PH), leg. Fleck ; 1 spec.,

Cormarnic (PH), leg. E.F.; **GAHC-GA/RC:** 5 specs, Prague (Czech Republic); 19 specs., leg. R.C.

Species: *K. ruficornis* Sturm, 1837

DMNS: 2 specs, Schaffhausen (sic!), 1 spec. s.d.

Genus: *Necrobia* Olivier, 1795

Species: *N. ruficollis* (Fabricius, 1775)

DMNS: 1 spec. Austria, 1884, *leg.* K.S., 1 spec. Austria, 3 specs s.d.; **MAIC:** 1 spec., 13. IX. 1932, Bucharest (IF), 1 spec., s.d.;

Species: *N. rufipes* (DeGeer, 1775)

DMNS: 1 spec., 1889, Someşeni, Cluj (CJ); 1 spec., Styria (Austria), 1884, leg. F.E.P.; [2575] / (84951); **GAHC-ALM:** 1 spec., Bucharest (IF), leg. A.-L.M.; **GAHC-DK:** 1 spec., Oran (Algeria), leg. D.K.; **GAHC-EF:** 2 specs, leg. E.F.;

Species: *N. violacea* (Linnaeus, 1758)

DMNS: 3 specs, Sibiu (SB), 8.III.1885; 1 spec., Szeged (Hungary), 1905, leg. I.M., 1 spec., Deva (HD), 1910, leg. I.M.; 6 specs, Deva (HD), 1913, leg. I.M.; 1 ex. Câmpuşel, Retezat, 29-31.07.1928, leg. I.M.; 16 specs, Deva, leg. I.M.; 11 specs, Kassa, 1905/ Comloşu Mare, 1905 / Mohok, 1905 (sic!), leg. I.M.; 1 spec. 10.V.1890; 1 spec., 17.07.1928, leg. I.M.; 20 specs s.d., col. Mallasz; **DZLC:** 1 spec., Cotroceni (Bucharest) (IF); 1 spec., Sinaia (PH); **GAHC-GA/RC**: 3 specs. Kronstadter Gebirge [Braşov Mts.] (BV), leg. F.D. [2574] / (84950); **MAIC:** 1 spec., 20. V. 934, Chişinău (Republic of Moldavia); 1 spec., VII 1935, Chişinău (Republic

of Moldavia); 1 spec., 1.VI. 1935, Bucureşti (IF); 1 spec., 16. IX. 27, Bucureşti (IF); 1 spec., 16. IX. 1927, Bucureşti (IF); 1 spec., 10. V. 1947, Valea Cerbului (Băile Herculane) (CS); 2 specs s.d.;

Genus: *Opetiopalpus* Spinola, 1844

Species: *O. sabulosus* (Motschoulsky, 1840)

GAHC-EF: 1 spec., Bârlad (sic!), leg. E.F., [2577] / (84953).

Species: *O. scutellaris* (Panzer, 1797)

DMNS: 1 spec., 1889, Someşeni, Cluj (CJ); 1 spec. Kalocsa (sic!), 1888, *leg*. T.; 1 spec. s.d.; [2576] / (84952) **GAHC-ALM:** 1 spec., leg. A.-L.M.; **GAHC-DK:** 1 spec., Haţeg (CT), leg. D.K.; **GAHC-EF:** 1 spec., leg. E.F.

Subfamily: Neorthopleurinae Opitz, 2009

Genus: *Dermestoides* Schaffer, 1771

Species: *D. sanguinicollis* (Fabricius, 1782)

DMNS: 1 spec., Sibiu (SB), 1883; 1 spec., 30.V.1889.

Subfamily: Tarsosteninae Jacquelin Du Val, 1862

Genus: *Tarsostenus* Spinola, 1844

Species: *T. univittattus* (Rossi, 1792)

DMNS: 1 spec., Mehadia (CS), 1888, leg. I.F.

Subfamily: Tillinae Leach, 1815

Genus: *Tillus* Olivier, 1829

Species: *T. elongatus* (Linnaeus, 1758)

DMNS: 1. spec., Sibiu (SB), 1885; 1 spec, Sibiu (SB), 1886; 1 spec., Sibiu (SB), V.1889; **GAHC-EF:** 2 specs., Azuga (PH), leg. E.F.; 1 spec., 26.VIII., Azuga (PH), leg. E.F. [2554] / (84930); **MAIC:** 1 spec., Buşca (SM), 18. V. 1932; 1 spec., Băile Herculane (CS), 15. VII. 1933; 1 spec., Buşca (SM), 1-10.V.1939;

Genus: *Tilloidea* Laporte De Castelnau, 1832

Species: *T. transversalis* (Charpentier, 1825)

DMNS: 3 specs, Greece, 2x leg. P.; 1 spec. Greece, 1889; **GAHC-ALM:** *Tilloidea* (sub nom. *Tillus*) *transversalis* Charp. [2555] / (84931): 1 spec., Ain Sefra (Hénon) (Algeria), leg. et Coll. M.V. de B.; 2 specs, Algeria, leg. M.V. de B.; **GAHC-DK:** 1 spec. Hispania [Spain]; 1 spec. s.d.; **GAIC:** 3 specs, Jegălia (CL), 1955; 1 spec., Jegălia (CL), 22.VI.1955; 1 spec., Jegălia (CL), 16.V.1956; 1 spec., Jegălia (CL), 18.V.1956; 1 spec., Jegălia (CL), 20.V.1956; 1 spec., Cotul Ciorii (BZ), 27.V.1963; 2 specs s.d.;

Species: *T. unifasciata* (Fabricius, 1787)

DMNS: 1 spec., 1883; 1 spec. 2.IV.1889; 1 spec. 1890; 1 spec. s.d.; **DZLC:** 1 spec., Bucharest (IF) (sub nom. *Tillus*); **GAHC-ALM:** (sub nom. *Tillus unifasciatus* Charp.) [2556] / (84932); 3 specs, Alsace (France), leg. A.-L.M.; **GAHC-DK:** 1 spec., Transilvannya, leg. D.K.; 3 specs, leg. D.K.; **GAHC-EF:** 1 spec., Babadag (TL), 6.VI, leg. E.F.; **MAIC**: 1 spec., Buşca (SM),18. V. 1932; 1 spec., Băile Herculane (CS), 15. VII. 1933; 1 spec., Buşca (SM), 1-10.V.1939;

Subfamily: Enopliinae Gistel, 1856

Genus: *Enoplium* Latreille,1802

Species: *E. serraticorne* (Olivier, 1790)

DMNS: 1 spec., Kies. (sic!), Italy, *leg.* E.R.

Discussions

In terms of biodiversity, the investigated material contains 29 Western Palaearctic species belonging to 12 genera (out of a total of 13 genera and 27 species recorded in Romania until now (Table 1).

Table 1. The number of collected specimens (the Western Palaearctic species which are non-native to to the Romanian fauna are marked by an asterisk *).

Nr.	Taxa	Romania	Abroad	Unknown	Total
1	*Clerus mutillarius*	33	3	4	40
2	*Opilo domesticus*	-	4	-	4
3	*O. mollis*	9	1	3	13
4	*O. pallidus*	1	2	-	3
5	*O. taeniatus*	4	1	-	5
6	*Thanasimus femoralis*	3	1	-	4
7	*T. formicarius*	27	-	2	29
8	*T. alvearius*	-	4	3	7
9	*Trichodes ammios**	-	4	2	6
10	*T. apiarius*	134	5	11	150
11	*T. crabroniformis**	-	2	-	2
12	*T. favarius*	21	2	2	25
13	*T. octopunctatus**	-	-	1	1
14	*T. punctatus* ab. *viridifasciatus*	2	-	-	2

15	*T. quadriguttatus*	23	2	-	25
16	*T. umbellatarum**	-	2	2	4
17	*Korynetes caeruleus*	12	7	20	39
18	*K. ruficornis*	-	2	1	3
19	*Necrobia ruficollis*	2	2	4	8
20	*N. rufipes*	2	2	2	6
21	*N. violacea*	37	3	13	53
22	*Opetiopalpus sabulosus*	1	-	-	1
23	*O. scutellaris*	2	1	3	6
24	*Dermestoides sanguinicollis*	1	-	1	2
25	*Tarsostenus univittatus*	1	-	-	1
26	*Tillus elongatus*	9	-	-	9
27	*Tilloidea transversalis*	8	8	3	19
28	*T. unifasciata*	6	3	7	16
29	*Enoplium serraticorne**	-	1	-	1
Total number of specimens		**338**	**62**	**84**	**484**

The examined material is very heterogenous in terms of collecting range (Table 2), period and completeness of specimen's data. From the oldest collected material (DMNS, first collecting date: 1883) to the newest (GASC, latest collecting date: 2019), a great variation in terms of collecting periods (Table 3 and Fig. 2) and number of records for Romania and abroad (Fig. 1) is shown.

In terms of geographic coverage, most of the collected specimens with complete (or almost complete) data cover almost all the Romanian historical provinces (Table. 3).

Table 2. Collecting periods of the investigated material with collecting date.

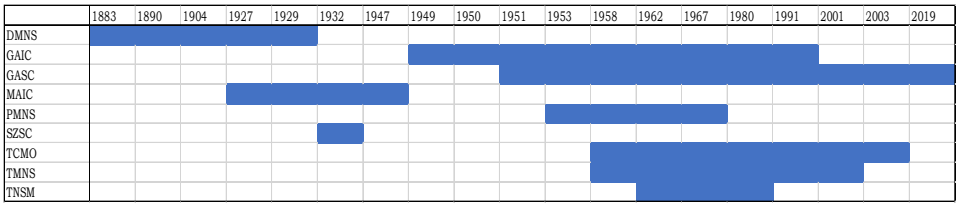

Table 3. The collecting range per entomological collection of the investigated specimens (the collecting period is indicaten in brackets, where no data was available, the date is replaced by a question mark).

Collection / Collecting range	**1850-1900**	**1901-1950**	**1951-1990**	**1990-2023**	**s.d.**	**Total specimens per collection**
DMNS (1883-1929)	39	29	-	-	73	141
DZLC (?-?)	-	-	-	-	7	7
GAHC-GA/RC (?-?)	-	-	-	-	37	37
GAHC-ALM (?-?)	-	-	-	-	34	34
GAHC-DK (?-?)	-	-	-	-	27	27
GAHC-EF (?-?)	-	-	-	-	25	25
GAIC (1949-1991)	-	6	15	1	6	28
GASC (1951-2019)	-	1	10	69	11	91
MAIC (1927-1947)	-	28	-	-	8	36
PMNS (1953-1967)	-	-	6	-	-	6
SZSC (?-1932-?)	-	1	-	-	-	1
TCMO (1958-2003)	-	-	8	1	-	9
TMNS (1962-1980)	-	-	7	13	4	24
TNSM (1958-2001)	-	-	30	-	3	33
Total specimens per collecting range	**39**	**65**	**76**	**84**	**235**	**499**

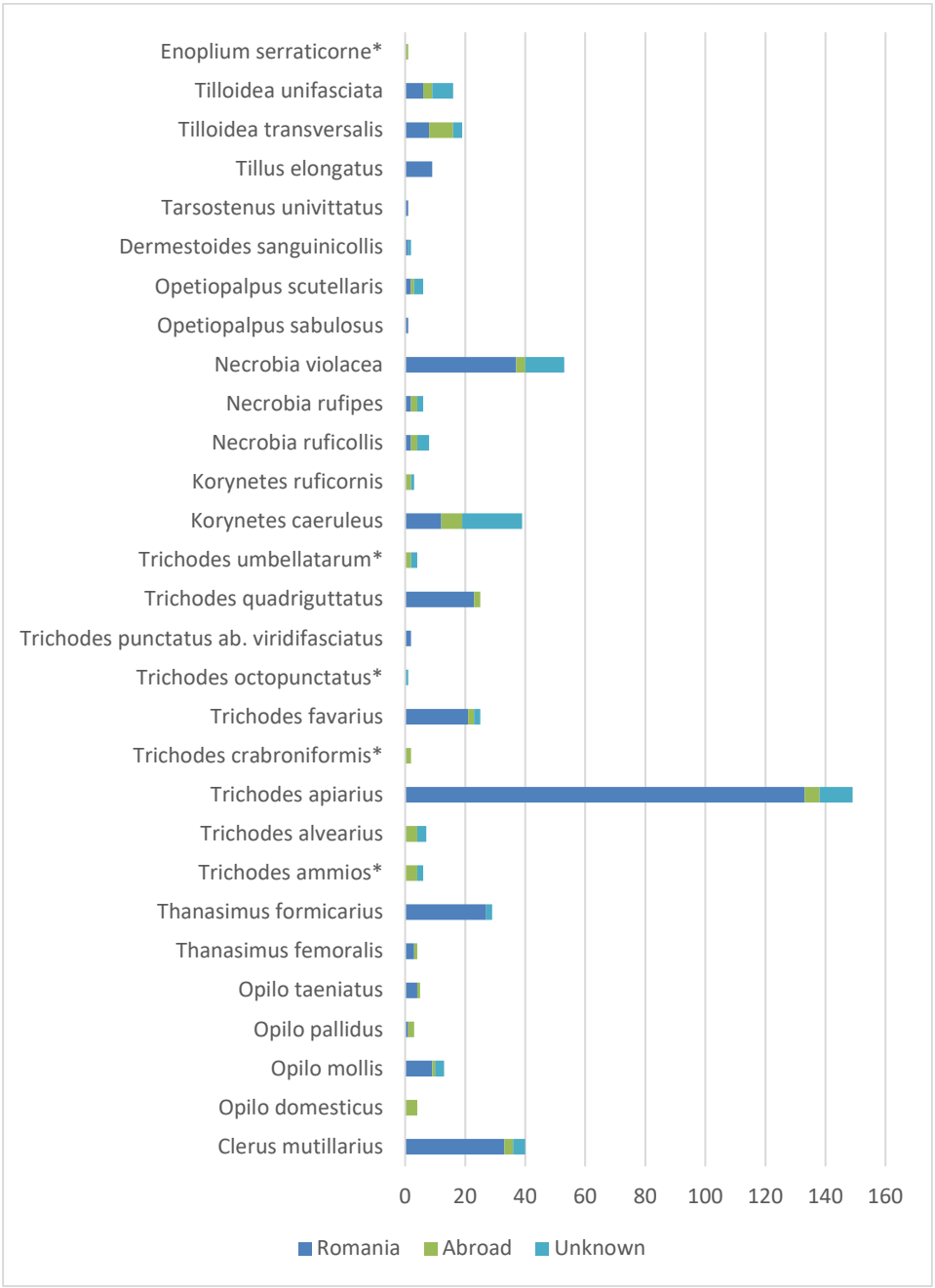

Figure 1. The number of the collected specimens per country.

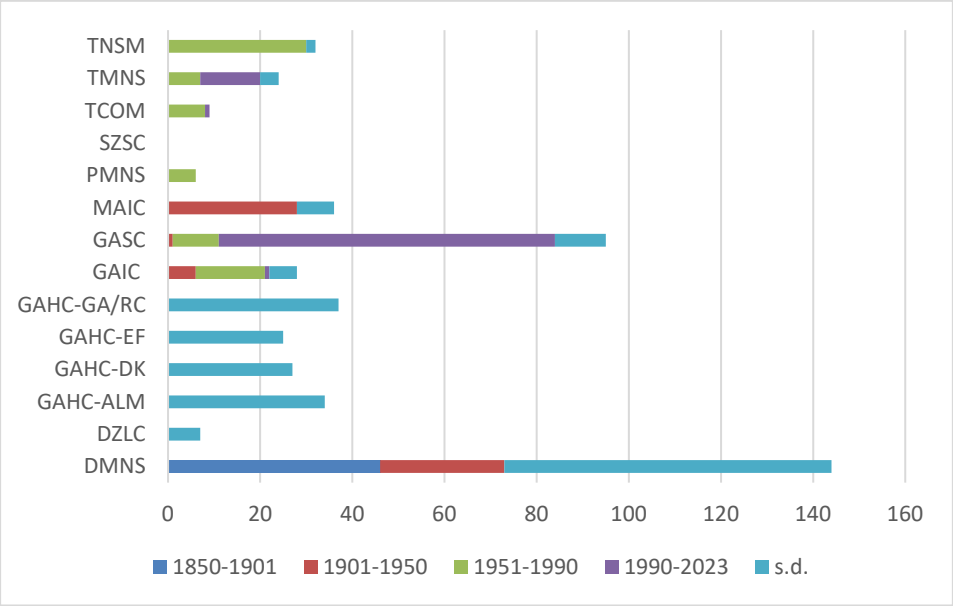

Figure 2. The total number of investigated specimens collected over time.

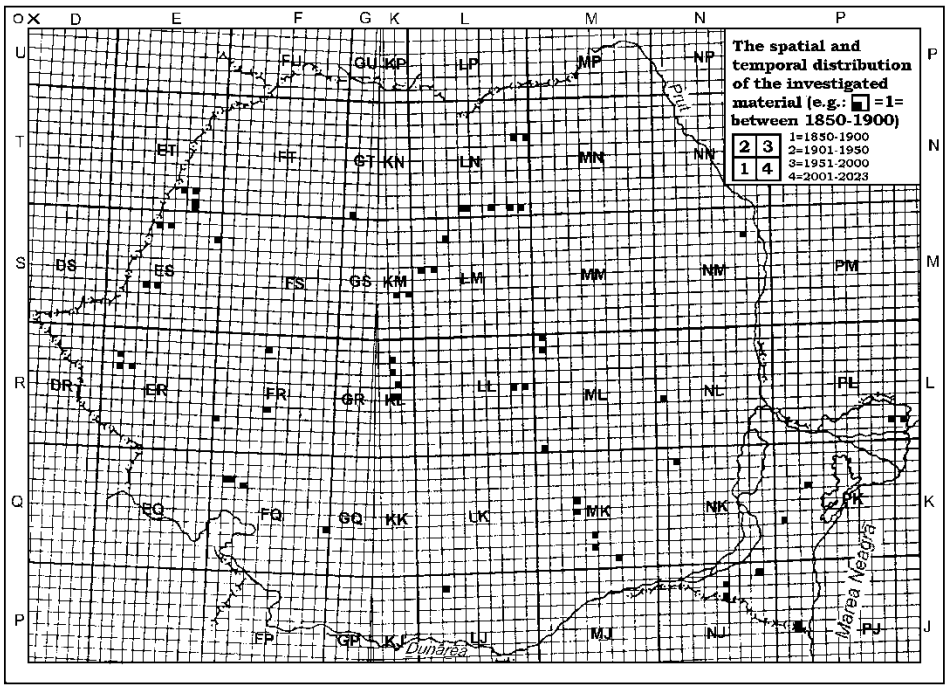

Figure 3. The spatio-temporal distribution of the specimens bearing complete collecting data.

The most diverse (in terms of biodiversity) is the Màllasz collection (DMNS), followed by the collections now part of the GAHC. As distribution, the collecting localities are local (GAHC-EF, TMNS, TNSM, TCMO), national (GAIC, GASC, MAIC) or western Palaearctic (DMNS, GAHC-ALM, GAHC-DK). In terms of completeness of the specimens' associated data (*locum, datum, legit*), the GASC ones are the most complete, while in the case of older collections, they can lack at all (GAHC), mostly (DMNS) or less (DZLC, MAIC, GAIC, TCOM, TMNS). The locality written as Kalocsa mentioned as such in the text may refer to Călacea (Dej county, Romania) or to Kalocsa (Bács-Kiskun county, Hungaria) (Suciu, 1967). Also, in the case of the 11 specimens of *N. violacea* from the DMNS collection collected in 1905, the locality could not be identified, the toponyms being written as they were found in the entomological collections written inventory.

An explanation for the lack of data associated to te specimens from older collections is the fact that at the time those collections were gathered, one of the scopes of a collection was rather to be used as a comparison material, in order to identify faster the collected specimens than a biodiversity database, as they are today. So, the zoogeographical value can be considered as low, in contrast to the specimens' age, which constitutes a value which increases by its' age. In the case of some specimens from the investigated collections, there are no indications concerning the collector, so, it can be presumed that the respective specimens have been collected by the owner of the collection itself even if it's not mentioned as such on the specimens' labels.

The examined material is contained in wooden entomological boxes, kept on shelves (DMNS, GAIC, GASC, PMNS, TCMO, TMNS, TNSM) or in entomological cabinets (DZLC, GAHC, MAIC). Even if now the conservant used is naphthalene, in some cases creosote was used – as its' characteristic smell remained associated with the material (GAHC).

The material is pinned on classical, black enameled entomological pins with sizes varying from 0 to 2 (most of them), only a small portion being glued on carton boards, which are pinned directly on the bottom of the entomological boxes (which

can be covered or not with a cork layer), or, in the case of newer collections in polystyrene foam. The labels are original, partially printed and / or hand-written in black China ink, or, in some cases in pencil and contain different amounts of data associated with the specimens. In some cases, a collection catalogue was gathered (DMNH), containing all the specimens' data.

The material is arranged in vertical columns (DZLC, GAHC, MAIC, PMNS, TCMO, TMNS, TNSM) or in horizontal rows (DMNS, GAIC, GASC). The disposition of the material in the boxes is the original one, except for the GAHC, where the material from the older collections (ALM, DK, EF, GA/RC) was gathered in one entomological box a long time ago.

The number of obstacles between the exterior and the material (the entomological box and the entomological cabinet not included) varies from 4 (GAHC, GAIC, GASC), 3 (DMNS, MAIC, PMNS, TCMO, TMNS, TNSM) to 2 (DZLC, SZSC).

Even so, there are more factors contributing to the conservation status of the examined collections, as in the case of TCMO, where even if there are three obstacles, the door of the collection room is doubled by a anti-fire metal door which closes hermetically, or, as in the case of other collections, the extensive use of the naphthalene and its' replacement as soon as necessary, or, the tightness of the entomological boxes' lids and of the entomological cabinet *per se* contribute to a superior conservation status of the material.

Conclusions

The examined material presented here is important, both as historic and museological patrimony, as its' general conservation status is a good one. The specimens are important as biodiversity vouchers, distribution data and for the history of the Romanian zoology. This catalogue contributes to a better knowledge concerning the Romanian Cleridae taxa biodiversity, distribution, and museology.

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