Bulletin S.R.B.E./K.B.V.E., 138 (2002) : 77-84

Notes on the Donaciines (Coleoptera Chrysomelidae Donaciinae) (1-10)

by Pascal LAYS

Museum, Institute of Zoology, University of Liège, Quai Ed. Van Beneden, 22. B-4020 Liège, Belgium. For correspondence : Rue F. Desoer 34, B-4031 Liège, Belgium.

Summary

Donacia bicolor ZSCHACH, 1788 and *D. brevicornis* AHRENS, 1810 are recorded for the first time from the Red Sea region. *Donacia brevitarsis* THOMSON, 1884, *D. springeri* MÜLLER, 1916 and *Macroplea mutica* (FABRICIUS, 1792) are recorded for the first time from France. *Macroplea appendiculata* (PANZER, 1794) is recorded from Spain for the first time. Faunistic data regarding *D. polita* KUNZE, 1818, *D. simplex* FABRICIUS, 1775, *Neohaemonia flohri* (JACOBY, 1884) and *N. melsheimeri* (LACORDAIRE, 1845) are provided.

Keywords : Coleoptera, Chrysomelidae, Donaciinae, *Donacia*, *Macroplea*, *Neohaemonia*, Faunistics.

Résumé

Donacia bicolor ZSCHACH, 1788 et *D. brevicornis* AHRENS, 1810 sont rapportés pour la première fois de la région de la Mer Rouge. *Donacia brevitarsis* THOMSON, 1884, *D. springeri* MÜLLER, 1916 et *Macroplea mutica* (FABRICIUS, 1792) sont rapportés pour la première fois de France. Première observation de *Macroplea appendiculata* (PANZER, 1794) en Espagne. Des données faunistiques concernant *D. polita* KUNZE, 1818, *D. simplex* FABRICIUS, 1775, *Neohaemonia flohri* (JACOBY, 1884) et *N. melsheimeri* (LACORDAIRE, 1845) sont fournies.

Faunistic data presented here concern the donaciines preserved in the General Collection of the Royal Belgian Institute of Natural Sciences (Dept. of Entomology) in Brussels, Belgium. All the material regarding the Haemoniini tribe is provided here. As for the material dealing with the two other tribes : Donaciini and Plateumarini, the data will be published later; only some noteworthy records of species are provided.

In order to avoid an overloading of the text, the bibliographical sources with regard to general distribution and host plants of species have not been systematically indicated; however, most of them will be found in LAYS (1997). With respect to host plants of each donaciine, the given list of genera and/or species of plants must be considered as a " raw " list, gathering data found in the literature, but it does not mean that all of them are their food plants, some being, perhaps, just adventitious (see LAYS, 2001).

As often in old collections, specimens, sometimes, do not bear any date of catching; at least, when it is known, one can provide data regarding the entomologists who owned those collections (and it does not imply they collected these insects); this gives only a vague idea of the probable period of collections : Félicien CHAPUIS (1824-1879), Ernest DONGÉ (1862-1929), Albert FAUVEL (1840-1921), Eugène Henri LE MOULT (1882-1965), P.M. MALLET (?- ?; but see JOLIVET below).

Abbreviations used : [ ] : data provided by the author; n.d. : no date; n.l. : no locality.

English names of countries appear in bold print, followed by the name, between [ ], in which they appear on the labels, usually in French in the present case.

1. *Donacia* (*Donaciomima*) *bicolor* ZSCHACH, 1788. First record for the Red Sea region

Red Sea [Mer Rouge]: 1♀, n.l., 16.IV.1893, Douadic (Le Moult *vendit.*)

" Mer Rouge " is the French name for Red Sea. Since donaciines are not sea living organisms (even if one species, *Macroplea mutica* F., lives on plants of brackish and marine waters),

this location indicates that the specimen was probably caught somewhere on the coasts of the Red Sea. With its some 5,000 km of coasts, from Suez to Aseb on the Western coast crossing Egypt, Sudan and Eritrea and from Elath to Ra's Bàb al-Mandab on the Eastern coast, crossing Southern tip of Israel, Jordan, Saudi Arabia and Yemen Arab Republic, theorically there are many places where the specimen could have been captured; unless it refers to one of these numerous islets that are scattered all over the Red Sea.

Distribution : *Donacia bicolor* is largely distributed in continental Europe, but occurs also in the United Kingdom and Ireland (MENZIES & COX, 1996), South of Scandinavia (BOROWIEC, 1984 : 481, map 10); elsewhere, recorded in Caucasus, Kazakhstan, Turkey, West Siberia, Uzbek SSR, North Iran, Israel, but does not occur in Maghreb (JOLIVET, 1968). In the Mediterranean region, this species is present in the countries that delimit the northern part of that sea, from Spain to Turkey (although rather localized in the latter country).

As far as the author knows no donaciine has ever been recorded in the Red Sea region. In Africa, all the Palaearctic species that occur are only located to the Maghreb (Morocco and Algeria; though some species must also exist in Tunisia). As JOLIVET (1972 : 45) pointed out, no *Donacia* occurs in the desert or subdesert regions between Tunisia and Saudi Arabia. It seems that this region is rather avoided by donaciines, although some species have been recorded in the Arabian Peninsula : *Donacia microcephala* and in Israel : *Donacia bicolor* and *D. marginata*. In the Near East, *Donacia bicolor* occurs in Turkey (limited to the North-West), North Iran and, as just mentioned, in Israel. So far, the southernmost locality was in Israel; the last observation of *D. bicolor* in that country dates back to 1946, where the donaciine was living on bur reeds : *Sparganium erectum neglectum* (BEEBY) K. RICHT (= *S. neglectum* BEEBY) in Lake Hula (or Huleh); owing to anthropogenic factors, the populations of the donaciine's food plant were drastically reduced and this seems to have contributed to a local extinction of *D. bicolor* (along with an other species : *D. marginata*) (FURTH, 1976, 1993).

Objectively, it is not possible to find out the locality of this capture from the Red Sea; *a priori*, it should be rather located in the North of that sea, perhaps along the coasts of the Gulf of Aqaba or the Gulf of Suez ? That seems more probable than on the littoral of Eritrea or Yemen. My colleague P. JOLIVET, who has visited several islets in the Red Sea, states (pers. com., 17/VII/2001) that they are entirely dry and unsuited to donaciines, but that they may inhabit the coasts of Egypt.

Host plants : has been reported on many species, and some must be just adventitious : *Carex* spp. (*C. lasiocarpa* E. & *C. rostrata* ST.); *Glyceria maxima* (H.), *Phragmites* spp., *Sagittaria* spp., *Scirpus* spp., *Sparganium erectum* L. (= *ramosum* HUDS.; = *neglectum* BEEBY), *Typha* spp.

2. *Donacia* (*Donaciomima*) *brevicornis* AHRENS, 1810. First record for the Red Sea region

Red Sea [Mer Rouge]: 1♀, n.l., 16.IV.1893, Douadic (Le Moult *vendit.*)

The specimen has a label, with the manuscript inscription : *Donacia impressa*, Catal.[ogue] n° 13. It is not known who identified this specimen and to what catalogue it refers to.

This specimen exhibits some characters that occur in *D. impressa* : anterior and posterior angles of prothorax well developped; anterolateral calli larger than the posterolateral calli, and in *D. brevicornis* : prothorax : on the posterolateral calli, presence of a tiny striated oblique surface surrounded with punctures; laterally, large pubescent area; elytra : depressions well distinct; pygidium : deeply emarginate; ovipositor and spermatheca are similar to *D. brevicornis*' (compared with a specimen of France). There are more arguments in favor of *D. brevicornis* than *D. impressa*.

Distribution : the occurrence of this species in the Middle East is rather surprising compared with its general distribution : mainly in continental Europe (BOROWIEC, 1984 : 482, map 11), but also recorded in Algeria (JOLIVET, 1968, 1972), Russian and Kazakhstan. As for the preceding species, the exact locality of this capture can not be determined. *Donacia brevicornis* is the second Palaearctic donaciine species, with *D. marginata*, that occurs both in the Maghreb and in the Middle East.

The fact that this specimen and the preceding one were captured the same day (16 April 1893) by the same person (Douadic) indicates perhaps that they may come from the same locality, or at least from close localities. Since donaciines usually live in great numbers, it is probable that more than these two specimens were collected and may be discovered one day in some collections.

Host plants : mentioned on several Cyperaceae : *Carex* spp., *Eriophorum* spp., *Scirpus lacustris* L. and on one Poaceae : *Glyceria maxima* (H.)

3. *Donacia* (*Donaciomima*) *brevitarsis* THOMSON, 1884. **France fauna nov.**

France : Paris : Paris : 1♂ (n° 10412), n.d. (Coll. L. Pandellé); Loiret : Montargis : 3♀♀ (n° 2326), n.d., F. Taupin (Coll. Mallet/Jolivet); 1♀, n.l., n.d. (Coll. A. Fauvel); Seine-et-Oise : Forêt de Sénart: 1♂-1♀, v-1882 (Coll. Dongé; Le Moult *vendit.*); **Germany** [Germania; Allemagne]: Aix-la-Chapelle [Aachen] : 2♀♀, n.d. (Coll. Dongé; Le Moult *vendit.*); 3♂♂-1♀, n.l., n.d., Reitter (Coll. Dongé; Le Moult *vendit.*). **Unknown origin** : 1♀, n.d. (Coll. Chapuis).

In these collections, all specimens but one were identified as *D. antiqua* KUNZE, 1818; only the specimen from Paris was identified as *D. simplicifrons* LACORDAIRE, 1845, a taxon that has been placed in synonymy with *D. antiqua* KUNZE. The aedeagus of all males was dissected, examined (including endophallus) then mounted. *Donacia brevitarsis* can be easily misidentified with some other species, and more specially with *D. antiqua* KUNZE. It is quite certain that close examinations of series of *antiqua* in the collections will reveal the presence of *brevitarsis* in several parts of Europe and Western Russia.

The last author who published a complete list of the Donaciinae of France (providing also a dichotomic key) was BORDY (1983). As far as the present author knows, no new donaciine species has been added since that publication.

Description of the imago and/or key can be found in NYHOLM (1950), MOHR (1966), RAVIZZA (1973), REITTER (1920), THOMSON (1884). BOROWIEC (1992) designated its lectotypes. RAVIZZA (1972) provides a photograph of a living specimen on its food plant. The shape of the endophallus (illustrated in NYHLOM, 1950 and RAVIZZA, 1973) remains an excellent character to identify this taxon.

NYHOLM (*loc. cit.*) and MOHR (*loc. cit.*) recommend, amongst other characters used for species identification, the use of the length of tarsi's articles; the existing differences are often minute and vary within and between conspecific populations and, therefore, in many cases, it can not be retained as a valid taxonomic character.

Distribution : Denmark, Finland (South), Germany, Italy (North-West), Poland, Sweden (South and Centre), Russia (North-West) (BOROWIEC, 1984, 1989; CLAVAREAU, 1913; GOECKE, 1960; MOHR, 1966; RAVIZZA, 1972, 1973; RUFFO, 1964; SILFVERBERG, 1987).

Host plants : palynophagous species : in Italy, has been recorded on *Carex hudsonii* A. BENN.(= *elata* ALL.), *C. rostrata* STOKES and, mainly, on *C. vesicaria* L. (RAVIZZA, 1972, 1973).

Phenology : owing to its wide distribution, a mean period of activity can not be given; aside from the fact that data are still needed, this species lives in lowland but can also reach stations around 1,000 m. above sea level. In North Italy, around an altitude of 1,100 m., adults were mainly observed between mid-June to the beginning of July; and in a station at alt. 275 m. adults occurred mainly between mid-April and beginning of May (RAVIZZA, 1972, 1973). RAVIZZA (1973) notes that the phenology of adults of *D. brevitarsis* corresponds with the flowering of its food plants.

4. *Donacia* (*Donaciomima*) *polita* KUNZE, 1818

Algeria [Algérie] : Alger : 1♀ (n° 1707), n.d. (Coll. Chapuis); n.l. : 1♂, n.d. (Le Moult *vendit.*) [*]; n.l. : 1♂-1♀, n.d., Reitter (Coll. Dongé); **Croatia** : Dalmatia, Metkovi¢ : 3♂♂-1♀, n.d. (Coll. Mallet / Jolivet) [**]; **Italy** : Modène : 1♂-1♀, n.d. (Coll. Mallet / Jolivet); Pisa : 6♂♂-7♀♀, n.d. (Le Moult *vendit.*); Toscana : 2♀♀ (n° 1708), n.d., Pizazz (Coll. Chapuis); n.l. : 4♂♂-1♀, n.d. (Coll. Mallet / Jolivet); **Morocco** [Maroc] : Tanger : 1♂-1♀ (n° 118 Db), Vauchu [or : Vaucher] (Le Moult *vendit.*); n.l. : 1♀ , n.d. (Coll. Fauvel); **Unknown origin** : 1♀ (n° : 21 Db// Lcd 127), n.d. (Le Moult *vendit.*); 1♂, n.d. (Coll. Chapuis); 1♀, n.d. (Coll. Chapuis).

[*] : There are also 2 females, without labels of origin, coming from the material of Le Moult and that were beside this male and mounted on the same kind of mounting card; they could come from Algeria.

[**] : In 1949, P. JOLIVET acquired the P.-M. MALLET collection, itself being made, amongst others, from the collections of Félix ANCEY (1835-1919), J. DUCHAÎNE and HEYNE (CONSTANTIN, 1992).

Distribution : Endemic to the Mediterranean region : Spain, Sardinia, Italy, Balkan Peninsula, Algeria, Morocco (BOROWIEC, 1984 : 487, map 21; JOLIVET, 1968 : 314; 1972 : 45; LACORDAIRE, 1845 : 129; RUFFO, 1964 : 55). In his notes on the African donaciines, JOLIVET (1968, 1972) does not mention *D. polita* from Algeria; one presumes this must be a simple omission since he consulted LACORDAIRE (1845), who, for Algeria, gives the locality of La Calle (= El Kala [Arabic

toponym]), a small coastal town between Annaba and the border of Tunisia. In Morocco, JOLIVET (1968 : 314) reports this species from the North and the Middle Atlas mountains up to an altitude of 1,900 m.

Host plants : unknown according to BOROWIEC (1984).

5. *Donacia* (*Donaciomima*) *simplex* FABRICIUS, 1775

Morocco [Maroc] : Maroc / ~~Tanger~~ : 1♂-2♀♀, n.d. (Le Moult *vendit.*).

The fact that the name of the town Tangier (Tanger in French) is crossed implies these specimens were collected somewhere else in Morocco, but it remains impossible to find out where. With regard to the time of capture of these specimens, no date is available, as it is often the case with the specimens of E.H. LE MOULT (who was an insects dealer); however, when dates exist they range from 1869 to 1928.

Distribution : very large distribution throughout Eurasia (BOROWIEC, 1984 : 488, map 23), also in Morocco and Algeria (JOLIVET, 1968 : 315); JOLIVET (*loc. cit.*) reports only 4 specimens captured in Morocco between 1939 and 1967.

Host plants : observed on *Carex*, *Glyceria*, *Juncus effusus* (L.), *Phragmites*, *Sparganium emersum* R. (= *simplex* HUDS.), *Typha latifolia* (L.)

6. *Donacia* (*Donaciomima*) *springeri* MÜLLER, 1916. **France fauna nov.**

France : Isère : Sassenage [5°39' E. - 45°13' N.; alt. : ± 500 m], 3♂♂-3♀♀, 6.v.1922 (n° 2341); 1♀, 10.v.1921; 5♂♂, n.d. [but prob. in the 1920's]; Savoie : Avressieux [5°41' E. - 45°13' N.; alt. : 290 m], 1♂-2♀♀, n.d. [but prob. in the 1920's or 30's].

All the specimens belong to the former collection of P.M. MALLET, that was later acquired by P. JOLIVET, and were placed under the label of *Donacia antiqua*. The aedeagus of all males was dissected, examined (including endophallus) then mounted by the author.

No new taxonomic key is provided here, but descriptions and/or keys will be found in GOECKE (1943), KIPPENBERG (1967), MOHR (1966), MÜLLER (1916), NYHOLM (1950) and REITTER (1920).

The imaginal habitus is provided by KIPPENBERG (1967) and RAVIZZA (1971 : 215, fig. 3) gives a picture of a living adult. A drawing of the dorsal view of its pronotum can be found in KIPPENBERG (1967) and MOHR (1966). NYHOLM (1950) and RAVIZZA (1973) provided a very good drawing of the aedeagus (lateral view), median lobe and its endophallus. The drawing of the male genitalia (dorsal view, distal part) reported as being *D. springeri*'s by MOHR (1966 : 106, Aed. 2 : 12) is not reliable and, perhaps, concerns another species, unless the drawing is too rough. The shape of *D. springeri*'s median lobe is well typical : long (1,8 mm), narrow (0,325 mm), straight, very pointed; fine, but net striae (a microstructure quite common amongst the Donaciinae), running lengthwise, cover the distal half of median lobe's ventral side (better seen when viewed from above) and could not be mistaken with any other French species. What has been said above (see *D. brevitarsis*) regarding the use of the length of tarsi's articles recommended by NYHOLM (*loc. cit.*) and MOHR (*loc. cit.*) for identification purposes is also true here.

Distribution : occurs in some parts of Europe : Sweden (Prov. Skania); in the meridional part of its geographic area, the species seems limited to the Alps and its spurs where it has been observed, so far, in Italy (North), Germany (Bavaria) and Austria (North Tyrol) (BOLLOW, 1940; BOROWIEC, 1984; GOECKE, 1960; IHSSEN, 1943, MOHR, 1966; RAVIZZA, 1971 & 1973; REITTER, 1920; SCHERER, 1978) and this is, again, confirmed by these new records from S.E. France.

Host plants : palynophagous species; in North Italy (Lombardy), recorded on the inflorescence of *Carex acuta* L. (= *gracilis* CURT.) (RAVIZZA, 1971); still in the same country observed on the spikes of *Carex hudsonii* A. BENN. (= *elata* ALL.) (RAVIZZA, 1973). In Austria, *D. springeri* has been reported on *Carex goodenowi* GAY and *Scirpus lacustris* L. (KIPPENBERG, 1967).

Phenology : In North Italy, adults have a short phenology, being mainly active in April (site of observation at an altitude of 275 m) (RAVIZZA, 1973); but at a higher altitude (1,300 m, North Tyrol, Austria), and as expected, they are active later : May, mainly in June, but still observed in the beginning of July (KIPPENBERG, 1967). The paucity of data does not allow the determination of the adults' phenology in France; only the month of May is reported here but, as just illustrated above, phenology correlatively fluctuates with altitude as well as latitude.

7. ***Macroplea appendiculata*** (PANZER, 1794). **Spain fauna nov.**

France : Bas-Rhin : Strasbourg : 1♂, n.d., P. Sirguey *leg.* (Coll. P. Sirguey); Strasbourg : 2♂♂-2♀♀, n.d. (Coll. Dongé); Strasbourg : 1♀, n.d. (Coll. A. Fauvel); Meurthe-et-Moselle : Nancy : 1♂, n.d. (Le Moult *vendit.*); Marne : Env.[-iron] de Reims, 1♂, n.d. (Coll. A. Fauvel); Reims : 2♂♂, n.d. (ex-Musée Tours; Coll. P. Sirguey); Reims : 2♂♂-5♀♀, n.d., Mr Bellevoy (Coll. Dongé); Moselle : Metz : 1♂, v.1870 (Le Moult *vendit.*); Metz : 2♀♀, n.d. (Coll. A. Fauvel); Metz : Moselle, 3♂♂-3♀♀, n.d. (Coll. Dongé); Somme : Amiens : 1♀ (n° : 2437), n.d. (Le Moult *vendit.*); no Department or locality given : dans la Maine [a river]: 1♀, n.d. (Coll. A. Fauvel); St-Julien [1] : 1♂ (n° 1731) - 1♀ (n° 1732), 20.ix.1877, M. LeBrun; **Germany** [Allemagne] : 2♂♂-2♀♀, n.l., n.d. (Coll. L. Pandellé, n° 6000); **Spain** [Espagne] : 1♀ (n° 49 & 1734), n.l., n.d. [old specimen]; **Sweden** (Suède) : 1♂, n.l., n.d. (Coll. A. Fauvel); **Unknown origin** : 3♂♂-3♀♀, n.d. (Coll. F. Chapuis); 1♂-1♀, n.d. (Coll. A. Fauvel); 2♀♀, n.d. (J. Havenith *vendit.*); 1♂-1♀, n.d.; without origin, but prob. from France : 1♂-1♀, inondations [= floods], janvier [=January] (Coll. P. Sirguey).

In the former Dongé collection, there are four cocoons, without label of origin and identification, but that were placed beside *M. appendiculata* adult specimens; 2 are empty, 1 contains a dry larva, 1 also contains a body (probably a dry larva or pupa), but it can not be determined without breaking it; it is presumed that they belong to the present species, but that would require confirmation.

The aedeagus of all males was dissected, examined (including endophallus) then mounted by the author.

[1] : regarding " St-Julien ", there are several localities that bear this toponym in the following Departments and one does not know in which of them the material was collected : Haute-Savoie, Gironde, Jura, Saône-et-Loire.

Distribution : Belgium, France, Germany, Poland, Netherlands, Switzerland, Czech Republic, United Kingdom, Ireland, Scandinavia, Romania, Russian Republic (Siberia) and Kazakhstan. Also reported from Algeria, but its presence in North Africa is doubtful according to DACCORDI & RUFFO (1978). Very recently, PETITPIERRE (2001) stated that this genus could be discovered in Spain, which is now confirmed.

Host plants : has been captured on many plants and it is likely that some are just adventitious, but the pond weeds (*Potamogeton* spp.) and water milfoils (*Myriophyllum* spp.) can be considered as its main food plants; *Butomus umbellatus* L., *Potamogeton lucens* L., *P. natans* L., *P. pectinatus* L., *P. perfoliatus* L., *Myriophyllum spicatum* L., *M. alterniflorum* DC., *Sagittaria sagittifolia* L., *Scirpus maritimus* L., *S. lacustris* L., *Sparganium erectum* L., *Typha angustufolia* L.

Phenology : few data available; in Belgium adults have been collected from March to September, with a higher frequency in the latter month (LAYS, 1997).

8. ***Macroplea mutica*** (FABRICIUS, 1792). **France fauna nov.**

Austria : 1♂, n.d., Jekel; **France** : Bas-Rhin : Strasbourg : 1♂, n.d., P. Sirguey (Coll. P. Sirguey); **Finland** : Esbo : 1♂, n.d., Levander (Coll. A. Fauvel); Esbo : 1♀, n.d., J. Sahlb[er]g (Coll. A. Fauvel); **Poland** : Dantzig : 2♂♂-2♀♀, n.d. (Coll. L. Pandellé, n° 5905). **Unknown origin** : 4♂♂-4♀♀, n.d. (Coll. F. Chapuis, n° 1737). There is also 1 female, without date, captured by Jekel, holding a hardly decipherable manuscript inscription of the locality, looking like " Bonnia " ? Other specimens, with readable labels, of the same series may exist elsewhere, in other Museums, and could elucidate this problem.

The aedeagus of all males was dissected, examined (including endophallus) then mounted by the author.

Distribution : Algeria, Austria, Baltic Sea, Belgium, Caspian Sea, Germany, Hungary, Finland, Ireland, Italy, Kirgiz S.S.R., Mongolian Republic, Netherlands, North Sea, Norway, Poland, Romania, Russia, Sardaina, Sweden, United Kingdom, Uzbek S.S.R. For North Africa, HOINIC (1994) mentions also Morocco and Tunisia, but, as far as the present author knows, no *Macroplea* spp. has ever been reported from these countries; it was only suggested, by JOLIVET (1968), that *M. appendiculata* could exist in the lakes of Morocco, but has never been discovered there since.

Host plants : *M. mutica* can live both in fresh (Hungary, Italy, Sardaina) and in brackish water (in the North of its area) (DACCORDI & RUFFO, 1978); reported from the following plants, some being, perhaps, just adventitious : *Myriophylum spicatum* L., *Potamogeton maritimus* L., *P. pectinatus* L., *Ruppia maritima* L., *R. rostellata* K., *Zostera marina* L., *Z. maritima*, *Zanichellia palustris* L.

Keys and/or descriptions of *M. appendiculata*

and *M. mutica* imagoes will be found, among others, in : DACCORDI & RUFFO (1978), GOECKE (1943), HELLÉN (1937), HOINIC, 1994, LOPATIN & KULENOVA (1986), MENZIES & COX (1996), MOHR (1966), REITTER (1920). For larvae in : BØVING (1906, 1910), MEDVEDEV (1982), MEDVEDEV & ZAITZEV (1978, 1980), OGLOBIN & MEDVEDEV (1971), STEINHAUSEN (1994). For pupae in : COX (1996).

Regarding the aedeagus of these two *Macroplea* species, HOINIC (*loc.cit.*), using a S.E.M., reported the existence of minute pores (± 20µ) located on the ventral part of the distal third of median lobe. In fact, these pores largely occur amongst the Donaciinae, but equally in other subfamilies of Chrysomelidae. They can be seen with a stereoscopic microscope (at least x 80; almost horizontal light) or with a compound microscope (phase contrast). The aedeagus must be well cleaned and prepared because the slightest layer or dirt may hide these microstructures. The male genitalia of several Donaciinae species were examined. For *Macroplea appendiculata* and *M. mutica*, micropores with one chaeta occur not only on the ventral face of the distal part of median lobe, as indicated by HOINIC, but also laterally and on its dorsal face (save its median part); equally present on tegmen dorsal face. Other species checked were : *Donacia* (*Cyphogaster*) *javana*, *D.* (*Donacia*) *crassipes*, *D.* (*Donaciomima*) *springeri*, *Donaciasta monrosi*, *Donaciella clavipes*, *Plateumaris consimilis*, *P. sericea*, *Sominella reticulata*. These structures appear as minute dark spots on the photographs of the apex of median lobe (ventral view) of several *Donacia* spp. provided by HAYASHI (2000 : 43, figs. 11 c, d) and HAYASHI & HARUSAWA (2000 : 207, figs. 24, 28, 32). Details of those examinations are not given here, but it can be said that all these aedeagi possess these microstructures usually on more than one face, also on the tegmen; sometimes they are barely visible, they slightly vary in size and density; length of chaetae may change, too. Some members of other subfamilies : Sagrinae (*Sagra femorata*), Orsodacninae (*Orsodacne cerasi*), Zeugophorinae (*Zeugophora subspinosa*), Cryptocephalinae (*Cryptocephalus aureolus*), Chrysomelinae (*Chrysolina aurichalcea*), Galerucinae (*Lochmaea capreae*), gave positive results and it is expected that the same must be true for the remaining subfamilies. As for the function of these microstructures, HOINIC (*loc. cit.* : 19) suggests that they could work as secretory pores, " *possibly connected with glands which produce a substance for the dilatation of female genital elements, or an odorous substance* "; although these hypotheses need confirmation, one can remark that the organ on which these microstructures rest, the median lobe, is in itself certainly effective enough to operate dilatation of female genitals. Concerning the possibility of an odorous substance production, HOINIC makes reference to male genitalic glands – possessing such a function – that occur amongst some Coleoptera and that were reported by JEANNEL (1955). On must note that contrary to what the Romanian author states, JEANNEL (*loc.cit.*) has not only localized these glands but illustrated them too (p. 31 : fig. 12; p. 32 : fig. 13 c; p. 136 : fig. 86 b); these glands always stand beside, and not on, the median lobe and are relatively quite big. Consequently, it is more probable that these microstructures may provide a sensile function and are homologous to those tactile hairs so universally spread amongst insects' genitals.

9. *Neohaemonia flohri* (JACOBY, 1884)

Mexico : Mexico City : 1♂, n.d., Höge.

Was under the label of *Neohaemonia nigricornis* KIRBY; the genitalia of that specimen has been mounted (by whom ?) on a miscroscope slide (n° 2) placed in the box.

Obviously, this specimen comes from a larger series of specimens (apparently some 200) collected by HÖGE and later spread in several collections throughout the world, as reported by ASKEVOLD (1988).

Distribution : So far, *N. flohri* has been recorded only in Mexico (ASKEVOLD, 1988).

Host plants : unknown.

Phenology : not enough available data (at least June).

10. *Neohaemonia melsheimeri* (LACORDAIRE, 1845)

U.S.A. : Rochester : 1♀, n.d., De Kempeneer.

Was under the label of *Neohaemonia nigricornis* KIRBY; as for the preceding specimen, its genitalia has been mounted on a miscroscope slide (n° 1) placed in the box.

Unfortunately, the State where the specimen was collected is difficult to determine for 6 toponyms, at least, bear the name of Rochester in Indiana, Michigan, Minnesota, New Hampshire and New York.

Distribution : its range extends through the Northeast of USA and Southeast of Canada (ASKEVOLD, 1988).

Host plants : *Potamogeton* spp.; observed also on *Sparganium* sp. and *Lemna* sp. but these plants are perhaps adventitious.

Phenology : though there have been records of imagoes from March to November, in fact, and provided the data available in ASKEVOLD (1988) can be used for some assessments, the months of May and June accumulate the highest occurrences of *N. melsheimeri*, with 33% and 41% respectively.

Acknowledgements

The author wishes to thank Dr Patrick GROOTAERT and Dr Georges WAUTHY, who gave access to the collections of the Royal Belgian Institute of Natural Sciences (Brussels, Belgium); to Dr Didier DRUGMAND and M. Alain PAULY (Dept. Entomology, R.B.I.N.S., Brussels) for technical assistance; Dr Pierre JOLIVET (Paris, France) for sharing his field observations on the Red Sea region; Dr Michael L. COX (Museum of Natural History of London, U.K.), Dr Mauro DACCORDI (Museo Regionale di Scienze Naturali, Torino, Italy), Dr David FURTH (Smithsonian Institution, Washington DC, USA), Dr Masakazu HAYASHI (Sanda, Japan), Dr Cristina HOINIC (Grigore Antipa Natural History Museum, Bucharest, Romania), Prof. Dr. Lev MEDVEDEV (Inst. of Animal Morphol. & Ecology, Moscow, Russia), Prof. Dr Edouard PETITPIERRE (Univ. de les Illes Balears, Palma de Mallorca, Spain), Prof. Dr Sandro RUFFO (Museo Civico di Storia Naturale,Verona, Italy) and Dr Andrzej WARCHALOWSKI (Inst. Zool., Wroclaw, Poland) who provided me with their publications.

Bibliography

ASKEVOLD I., 1988. - The genus *Neohaemonia* SZÉKESSY in North America (Coleoptera : Chrysomelidae : Donaciinae) : systematics, reconstructed phylogeny, and geographic history. *Transactions of the American Entomological Society*, 113 : 360-430.

BOLLOW H., 1940. - *Donacia springeri* Müll. (Col. Chrysomelidae), eine für Deutschland neue Käferart. *Mitteilungen der Muenchner Entomologischen Gesellschaft*, 30 : 556-558.

BORDY B., 1983. - Donaciini (Col. Chrysomelidae) Entre Saône et Doubs. *Bulletin de la Société entomologique de Mulhouse*, avril-juin : 17-30.

BOROWIEC L., 1984. - Zoogeographical study on Donaciinae of the world (Coleoptera, Chrysomelidae). *Polskie Pismo Entomologiczne*, 53 (4) : 433-518.

BOROWIEC L., 1989. - *Donacia brevitarsis* THOMSON, 1884, in Poland (*Coleoptera, Chrysomelidae, Donaciinae*). *Polskie Pismo Entomologiczne*, 58 : 827-829.

BOROWIEC L., 1992. - *Donacia brevitarsis* THOMSON, 1884 - lectotype designation (*Coleoptera, Chrysomelidae, Donaciinae*). *Genus*, 3 (1) : 63-64.

BØVING A.G., 1906. Bidrag til kundskaben om Donaciin-larvernes naturahistorie. H. Hagerups Forlag, København, 263 pp.+ 7 tav.

BØVING A.G., 1910. - Natural History of the larvae of Donaciinae. *Sonderabdruck aus Internationale Revue der gesamten Hydrobiologie und Hydrographie*, Biol. Suppl. 1 : 1-108,-7 pls., 70 figs.

CLAVAREAU H., 1913. - Chrysomelidae I : 1. Sagrinae, 2. Donaciinae, 3. Orsodacninae, 4. Criocerinae. *In* : JUNK W. & SCHENKLING S., eds - *Coleopterorum Catalogus*, pars 51 : 1-103.

CONSTANTIN R., 1992. - Mémorial des Coléoptèristes français. *Bulletin de l'Association des Coléoptéristes de la Région parisienne*, supplément au n° 14.

COX M., 1996. - The Pupae of Chrysomeloidea. *In* : JOLIVET P.H.A. & COX M.L., editors - *Chrysomelidae Biology*. Vol. 1 : *The Classification, Phylogeny and Genetics*, pp. 119-265. SPB Academic Publishing, Amsterdam, The Netherlands.

DACCORDI M. & RUFFO S., 1978. - Sulla presenza del genere *Macroplea* Samouelle in Italia (Coleoptera, Chrysomelidae, Donaciinae). *Bolletino della Ass. Romana entomologica*, 33 (1-4) : 56-65.

FURTH D., 1976. - The Huleh and its Lost Aquatic Leaf Beetle. *Atala*, 4 (1-2) : 4-9, 5 figs.

FURTH D., 1993. - The Hula Lake Leaf Beetles Revisited. *Israel Journal of Entomology*, 27 : 25-30.

GOECKE H., 1943. - Monographie der Schilfkäfer. II. Die fossilen Funde und ihre Bestimmung. (13. Beitrag zur Kenntnis der Donaciinen). *Nova Acta Leopoldina* (N.F.), 12 (86) : 339-380, 45 Abb., 1 photo. Tafel.

GOECKE H., 1960. - Monographie der Schilfkäfer. III. Die Gattungen und Arten der *Donaciinae* (Col. Chrys.) und ihre Verbreitung. (18. Beitrag zur Kenntnis der Donaciinen). *Entomologische Blätter*, 56 : 1-19.

HAYASHI M., 2000. - Late Pliocene to Early Pleistocene donaciine fossils from the Uonuma Formation (Part II) : A new *Donacia* from the Uonuma hills Niigata Prefecture, Japan (Coleoptera : Chrysomelidae : Donaciinae). *Bulletin of the Osaka Museum of Natural History*, 54 : 31-48.

HAYASHI M. & HARUSAWA K., 2000. - *Donacia frontalis* JACOBY from Japan (Coleoptera, Chrysomelidae, Donaciinae). *Elytra*, 28 (1) : 203-209.

HELLÉN W., 1937. - Über die *Haemonia*-Arten Finnlands (Col.). *Notulae Entomologicae*, 17 (1) : 1-4.

HOINIC C., 1994. - A review of the species of *Macroplea* Samouelle (Coleoptera : Chrysomelidae) in Romania. *Travaux du Museum d'Histoire Naturelle " Grigore Antipa "*, 34 : 17-30.

IHSSEN G., 1943. - Neue und interessante Insek-

tenfunde aus dem Faunengebiete Südbayerns. *Mitteilungen der Muenchner Entomologischen Gesellschaft*, 33 : 889-894.

JEANNEL R., 1955. - *L'édéage. Initiation aux recherches sur la systématique des Coléoptères*. Editions du Muséum, Paris, 155 pp.

JOLIVET P., 1968. - Les Donaciinae de l'Afrique du Nord (Col. Chrysomelidae). *Bulletin mensuel de la Société linnéenne de Lyon*, 7 : 307-315.

JOLIVET P., 1972. - Coleoptera Chrysomelidae Donaciinae. *Exploration du Parc National de la Garamba*, Mission H. DE SAEGER (1949-1952). Institut des Parcs nationaux (Bruxelles), 56 (3) : 43-58, 4 figs.

KIPPENBERG H., 1967. - *Donacia springeri* Müll. in Nordtirol. *Entomologische Blätter*, 63 : 48-49.

LACORDAIRE T., 1845. - Monographie des coléoptères subpentamères de la famille des phytophages. Tome premier, première partie. *Mémoires de la Société royale des Sciences de Liège*, 3 (1) : xiii + 740 pp.

LAYS P., 1997. - Les Donaciinae (Coleoptera : Chrysomelidae) de la faune de Belgique. Chorologie, phénologie et évaluation de la dérive faunique. *Notes fauniques de Gembloux*, 33 : 67-143.

LAYS P., 2001. - The Donaciines (Coleoptera Chrysomelidae Donaciinae) and the Gause Principle. *Bulletin de la Société royale belge d'Entomologie*, 137 (7-12) : 128-138.

LOPATIN I.K. & KULENOVA K.Z., 1986. - *Leaf feeders (Coleoptera, Chrysomelidae) of Kazakh S.S.R.* Acad. Nauk Kazachskoy SSR. *Nauka* , Alma Ata, 198 pp., 34 figs. [In Russian]

MEDVEDEV L., 1982. - Chrysomelidae of the Mongolian People's Republic : identification key. *Nauka* (Moscow) : 1-302, ill. [In Russian]

MEDVEDEV L. & ZAJTSEV Y.M., 1978. - Larvae of leaf-eating beetles from Siberia and the Far East. *Nauka* (Moscow) : 1-181. [In Russian]

MEDVEDEV L. & ZAJTSEV Y.M., 1980. - New data on chrysomelid-beetle larvae from Mongolia (Coleoptera, Chrysomelidae). *Nauka* (Moscow), 7 : 97-106. [In Russian]

MENZIES I.S. & COX M.L., 1996. - Notes on the natural history, distribution and identification of British reed beetles. *British Journal of Entomology and Natural History*, 9 : 137-162, 71 figs, 2 colour plates.

MOHR K. H., 1966. - Fam. Chrysomelidae. *In* : FREUDE H., HARDE K.W. & LOHSE G.A., - *Die Käfer Mitteleuropas*. Band 9 : 95-280. Goecke & Evers Verlag, Krefeld.

MÜLLER G., 1916. - Coleopterologische Beitrage zur Fauna der österreichischen Karstprovinzen und ihre Grenzgebiete. *Entomologische Blätter*, 12 : 73-109.

NYHOLM T., 1950. - Zur Systematik der nordeuropäischen Donacien. *Proceedings of the 8th International Congress of Entomology*, Stockholm, 1948 : 156-163, 2 figs.

OGLOBIN D.A. & MEDVEDEV L.N., 1971. - Larvae of leaf-beetles (Coleoptera, Chrysomelidae) of the European part of USSR. *Opredelitl' Faune SSSR*, 106 : 1-122, 51 figs. [In Russian]

PETITPIERRE E., 2001. - Coleoptera Chrysomelidae. *Fauna Iberica*. Vol. 13., Museo Nacional de Ciencias Naturales, Consejo Superior de Investigaciones Científicas, Madrid, 521 pp.

RAVIZZA C., 1971. - Ricerche sull'eto-ecologia dei *Donaciini* delle Torbiere d'Iseo-Provaglio (Lombardia). *Memorie del Museo Civico di Storia Naturale di Verona*, 19 : 203-235, 5 figg.

RAVIZZA C., 1972. - Notizie sui *Donaciini* popolanti il lago Moo (Appennino Piacentino) (*Coleoptera Chrysomelidae*). *Memorie del Museo Civico di Storia Naturale di Verona*, 20 : 77-90, 2 figg.

RAVIZZA C., 1973. - Relitti biotici di *Donaciinae* (*Col. Chrysomelidae*) nella degradazione ecologica di un piccolo bacino lacustre intermorenico lombordo. *Annali della Facolta di Scienze Agraria della Universita degli Studi di Torino*, 8 : 283-296.

REITTER E., 1920. - Bestimmungs-Tabelle der europäischen Donaciini, mit Berücksichtigung der Arten aus der paläarktischen Region. *Wiener Entomologische Zeitung*, 38 (1-3) : 21-43.

RUFFO S., 1964. - Contributi alla conoscenza della distribuzione dei Coleotteri Crisomelidi nella regione appenninica. I. Orsodacnini, Donaciini, Criocerini. *Memorie del Museo Civico di Storia Naturale, Verona*, 12 : 46-96, 15 figs.

SCHERER G., 1978. - Chrysomelidae : Donaciinae. *In* : ILLIES J., editor, - *Limnofauna Europaea. A Checklist of the Animals Inhabiting European Inland Waters, with Accounts of their Distribution and Ecology (except Protozoa)*. G. F. Verlag, Stuttgart, New York; Swets & Zeittinger, B.V. Amsterdam, pp. 319-322.

SILFVERBERG H., 1987. - Mapping the Finnish *Chrysomelidae* (*Coleoptera*). I. *Notulae Entomologicae*, 67 : 5-16.

STEINHAUSEN W.R., 1994. - Familie : Chrysomelidae. *In* : KLAUSNITZER B., ed. : *Die Larven der Käfer Mitteleuropas*. Goecke & Evers, Krefeld, 2 : 231-314.

THOMSON C.G., 1884. - Une notice sur la *Donacia impressa* et les espèces voisines. *Annales de la Société entomologique de France* (Bulletin), 4 (6) : 148-149.

WARCHALOWSKI A., 1971. - Stonkowate - *Chrysomelidae*. Czesc ogólna i podrodziny : *Donaciinae*, *Orsodacninae*, *Criocerinae*, *Clytrinae*, *Cryptocephalinae*, *Lamprosomatinae* i *Eumolpinae*. In : *Klucze do oznaczania owadów Polski*. Czesc XIX. Chrzaszcze - Coleoptera. Zeszyt 94a., Polski Towarzystwo Entomologiczne, Pañtwowe wydawnictwo naukowe, Warszawa, 113 pp.