

Preliminary notes on Heteroptera of the Nebrodi mountains

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ABSTRACT The author has carried out a preliminary study on the hemiptero-fauna of the Nebrodi mounts, where, due to a great variety of environments, an interesting and rich fauna lives. In the biotopes examined 118 species of terrestrial Heteroptera have been found up to now, which offered a rather good picture of the biogeography of the zone. Most species are very widespread (Palearctic, Eurosibiric, Euromediterraneo-turanic, Euromediterranean and Mediterranean species). Especially interesting are the Eurosibiric species typical of cold climates, which in Sicily have found a suitable refuge on the Nebrodi, at the higher levels, and the more typically Mediterranean species: these two groups characterize the hemiptero-fauna of the Nebrodi. Among the Eurosibiric species *Ceratocombus coleopratus* Zett. is particularly interesting since it represents the first record in Sicily of a member of the family Ceratocombidae.

IZVLEČEK PREDHODNI PODATKI O STENICAH (HETEROPTERA) GOROVJA NEBRODI Avtorica navaja predhodne podatke o favni stenic gorovja Nebrodi (Sicilija), kjer živi zaradi raznolikih habitatov bogata in zanimiva favna. V raziskovanih biotopih je bilo dosedaj ugotovljenih 118 vrst kopenskih predstavnikov reda Heteroptera, kar je omogočilo dober vpogled v biogeografijo tega območja. Večina vrst ima široko razprostranjenost (palearktične, evrosibirske, evromediterransko-turanske, evromediterranske in mediteranske vrste). Posebno zanimive so evrosibirske vrste, značilne za hladno podnebje, ki so na Siciliji našle ugodne razmere v gorovju Nebrodi v višjih legah, in tipične mediteranske vrste. Ti dve skupini sta značilni za favno stenic tega gorovja. Med evrosibirskimi vrstami je vredno omeniti vrsto *Ceratocombus coleopratus* Zett., ki je prvi predstavnik družine Ceratocombidae najden na Siciliji.

Due to the fact that they are covered by remarkably thick woods, which in some places reach right down to the sea, the Nebrodi mountains make up the largest green area of Sicily, and although much has been disturbed by human invasion, we can still find natural habitats which, because of their variety, offer a varied and interesting flora and fauna.

The Nebrodis are a range of mountains which run parallel to the Tyrrhenian coast. The highest mountains in the range are the Soro (1847 m) and the Serra del Re (1754 m), several other peaks reaching 1500 metres.

The largest areas of the woods are formed of beech trees which mostly occupy the upper slopes of the mountain range, covering both sides from 1400 m on. These beech trees offer a coenosis of great interest with regard

to both the flora and the fauna. Among the beech trees can also be found some yew trees, the last examples left on the island of Sicily. Below the belt of beech trees are groves of the more thermophilic turkey-oaks and deciduous oak trees while the cork forests are to be found on the lower slopes and at sea level.

The actions of man with stock-raising and forestation, on the one hand, has reduced the area of woodland, but, on the other hand, has formed mountain pastures which, located above 1000 m, enrich the ecological variety.

The study of Hemiptera fauna that I carried out on the Nebrodi is still incomplete, as more analytical collecting is still going on. Yet at the present stage, remarkable and interesting results have been obtained. In fact, 118 species of earth Heteroptera belonging to 16 families and 90 genera have been identified. The whole analysis of Heteroptera of the Nebrodi shows that the largest family is that of the Miridae with 43 species. The decreasing order is as follows: Lygaeidae 28, Reduviidae 9, Tingidae 8, Pentatomidae 6, Nabidae 6, Cydnidae 3, Anthocoridae 3, Coreidae 2, Leptopodidae 2, Rhopalidae 2, and finally Ceratocombidae, Scutelleridae, Alydidae, Microphysidae each represented by one species.

The environments which have been considered, all located above 1000 m, are:

a) Pasture (*Genisto-Potentilletum calabrae*, *Cynosuro-Leontodontetum siculi*; *Thymus spinulosus* and *Teucrium chamaedrys* pastures).

b) Beech woods (*Aquifolium-fagetum*).

c) Oak groves (*Quercetum cerridis* with *Quercus cerris* and *Q. pubescens* prevailing).

Analyzing the Heteroptera population (Tab. 1) it emerged that the richest habitats were the pastures 65.25 % followed by oak groves 36.44 % and then beech woods 20.33 %; this is easily understandable, since it is known that most of these insects prefer xeric environments.

Analyzing the kind of geographic distribution of Heteroptera we obtain the following pattern:

1) The most widespread species are 13.55 %, they include Holarctic species (*Leptopterna ferrugata* (Fall.), *Stenodema laevigatum* (L.), *Capsus ater* (L.), *Trapezonotus arenarius* (L.)), Palearctic species sometimes with extrapalaearctic elements (*Orthops kalmi* (L.), *Plagiognathus arbustorum* (F.), *Plagiognathus chrysanthemii* (Wolff), *Lygaeosoma sardea* Spin., *Cydnus aterrimus* (Foerst.)), Euroasiatic species (*Liocoris tripustulatus* (F.), *Derephisia foliacea* (Fall.), *Kalama tricornis* (Schrk.), *Rhinocoris iracundus* (Poda), *Drymus sylvaticus* (F.), *Rhopalus parumpunctatus* Schill., *Palomena prasina* (L.)) whose distribution has little biogeographic importance.

2) A small group (10.16 %) is formed of species distributed in the whole of Europe or in parts of it and/or in the Mediterranean area and also in central Asia, often limited to the Arab-Caspian lowlands. This group

includes Euromediterranean-centralasiatic species (*Orius niger* Wolff); Euromediterranean-turanic species (*Deraeocoris serenus* Dgl. Sc., *Plinthisus brevipennis* (Latr.), *Trapezonotus ullrichii* (Fieb.), *Trapezonotus dispar* Stal., *Chorosoma schillingi* Schill., *Camptopus lateralis* (Germ.); Euroturanic-maghrebinian species (*Campyloneura virgula* (H. S.), *Tingis auriculata* (Costa A.)); Euroturanic species (*Gonocerus acuteangulatus* (Goeze), *Tingis grisea* Germ.); Euroanatolian species (*Graptopeltus lynceus* (F.)).

They are all xerothermic species with large distributions whose original distribution area could be Central and Turanic Asia and which probably extended towards the West of Europe and the Mediterranean region, following the steppic vegetation during the milder periods (Interglacial and Postglacial of the Quaternary) (LA GRECA 1964, 1984).

3) A small group (5.93 %) is made up of the species distributed in Siberian Asia (therefore Central and Turanic Asia excluded) and in Europe and/or in Mediterranean regions. They are Eurosiberian species (*Stygnocoris sabulosus* (Schill.); *Ceratocombus coleopratus* (Zett.), the latter is noteworthy since it is the first discovery in Sicily of a species belonging to the Ceratocombidae family) (IPPOLITO 1985); Eurosiberic maghrebinian species (*Conostethus roseus* (Fall.), *Orthocephalus saltator* (Hhn.)); Eurosiberic Mediterranean species (*Phymata crassipes* (F.), *Stygnocoris fuliginus* (Geoffr.), *Sciocoris cursitans* (F.)). Cool climate species which, during the colder period of the Quaternary caused by the expansion of the glaciers, extend to Europe and in the Mediterranean areas belong to the Eurosiberic Mediterranean group. Those species, when weather conditions improved, remained in the cooler areas and at higher altitudes; this is true in particular for those areas at low latitudes such as the Mediterranean region, where Eurosiberian species are found only on high mountains. It is highly significant that cool climate species are found on the Nebrodi range, which represents a refuge for them.

4) A large group 23.72 % is formed of the species distributed all over Europe (northern areas included) and the Mediterranean area. These are the so called European species (*Bothinotus pilosus* (Boh.), *Notostira erratica* (L.), *Megaloceroea recticornis* (Geoffr.), *Phytocoris dimidiatus* Kbm., *Phytocoris obscurus* Reut., *Megacoelum beckeri* (Fieb.), *Adelphocoris detritus* (Fieb.), *Calocoris schmidti* (Fieb.), *Calocoris quadripunctatus* (Vill.), *Orthotylus tenellus* (Fall.), *Cyllocoris histrionicus* (L.), *Reuteria marqueti* Put., *Anthocoris gallarum ulmi* (De Geer), *Megalonotus sabulicolus* (Thms.), *Megalonotus dilatatus* (H. S.)); the Euromediterranean species (*Aptus myrmecoides* (Costa A.), *Gampsocoris punctipes* (Germ.), *Tropistethus holosericeus* (Schltz.), *Taphropeltus contractus* (H. S.), *Beosus maritimus* (Scop.)); Euromediterranean Iranian species (*Deraeocoris lutescens* (Schill.)) and Euro-maghrebinian species (*Diciphus pallidus* (H. S.), *Haipocera thoracica* (Fall.), *Asciodema obsoletum* (Fieb.), *Leptopus marmoratus* (Goeze),

Catoplatus carthusianus (Goeze), *Ischnocoris hemipterus* (Schill.), *Drymus ryeii* (Dgl. - Sc.).

5) Lastly, a remarkable group of species (46.61 %) is that of the Mediterranean distribution. These are species which are widespread in more or less wide areas of the Mediterranean regions and that are often found in Middle Europe but never in Northern Europe or Turan. They often extend as far as the Azores, the Canaries, Madeira and along the Atlantic coasts of Marocco. The following species belong to this group:

a) The Middle and South Euromediterranean and/or Turanic species (*Capsodes lineolatus* (Brullé), *Capsodes mat* (Rossi), *Prostemma sanguineum* (Rossi), *Prostemma guttula* (F.), *Odontotarsus pupureolineatus* (Rossi), *Graphosoma semipunctatum* (F.), *Eurydema ventrale* Klt., *Spilostethus pandurus* (Scop.), *Melanocoryphus albomaculatus* (Goeze)).

b) The Mediterranean Iranian Turanic species (*Pirates hybridus* (Scop.), *Coranus aegyptius* (F.), *Patapius spinosus* (Rossi), *Spilostethus saxatilis* (Scop.), *Cymus melanocephalus* Fieb., *Geocoris megacephalus* (Rossi), *Macroplox fasciata* (H. S.), *Ceraleptus obtusus* (Brullé), *Nabis capsiformis* Germ. (the latter is also found in the tropical area).

c) The Mediterranean species (sensu latu) (*Calocoris nemoralis* (F.), *Calocoris norvegicus vittiger* Reut., *Calocoris trivialis* (Costa A.), *Halticus macrocephalus* Fieb., *Orthocephalus proserpinae* M. R., *Heterotoma meriopterum* Scop., *Neides aduncus* Fieb., *Neottiglossa bifida* Costa A.).

d) The Mediterranean Atlantic species (*Miridius quadrivirgatus* (Costa A.), *Rhinocoris erythropus* (L.), *Anthocoris sarothamni* Dgl. Sc., *Metopoplax ditomoides* (Costa A.), *Aoploscelis bivirgatus* (Costa A.)).

e) The Mediterranean Macaronesic species (*Cyphodema instabile* (Luc.), *Acalipta hellenica* (Reut.), *Tingis denudata* Horv.).

f) The E-Mediterranean species (*Graptopeltus validus* (Horv.), *Dimorphocoris mutatus* Seiden., *Psallus anaemicus* Seiden.).

g) The W-Mediterranean species (*Lorycula freyi* (Ldb.), *Nabis mediterraneus occidentalis* Rieg., *Nabis pseudoferus ibericus* Rem., *Galeatus major* Put., *Sciocoris sideritides* Woll., *Leptopterna griesheimae* Wagn.).

h) The N-Mediterranean species (*Dionconotus cruentatus* (Brullé), *Ischnonyctes barbarus* (Luc.), *Rhyparochromus minusculus* Reut., *Sphenadolestes argenteolineatus* (Costa A.), *Ochetostethus pygmaeus* (Ramb.), *Ochetostethus balcanicus* Wagn., *Holotrichius denudatus* Costa A.).

i) The species endemic in Italy (*Diciphus flavoviridis* Tam., *Myrmicomimus variegatus* (Costa A.), *Sphedanolestes cingulatus* (Fieb.)).

j) The species endemic in Sicily (*Lygaeus equestris sicilianus* Wagn., *Oxycarenus longiceps* Wagn.).

The species belonging to this group are hot climate species and, generally, those with exclusively Mediterranean distribution represent ancient, prequaternary elements, which have originated in the Mediterranean regions.

The location in the centre of the Mediterranean sea and the variety of existing environments permit the presence of most species typical of the Mediterranean area; in fact, for many of them, (N-Mediterranean species, E-Mediterranean species, strictly W-Mediterranean species) the island represents the far limit of their distribution area.

Tab. 1: List of the species found in beech woods, oak groves and pasture.

	Beech woods	Oak groves	Pasture
Miridae			
<i>Bothynotus pilosus</i> (Boh.)			+
<i>Deraeocoris serenus</i> Dgl. Sc.	+		+
<i>Deraeocoris lutescens</i> (Schill.)		+	
<i>Dicyphus pallidus</i> (H. S.)	+	+	
<i>Dicyphus flavoviridis</i> Tam.	+	+	
<i>Campyloneura virgula</i> (H. S.)	+		
<i>Leptopterna ferrugata</i> (Fall.)			+
<i>Leptopterna griesheimae</i> Wagn.			+
<i>Stenodema laevigatum</i> (L.)	+	+	+
<i>Notostira erratica</i> (L.)			+
<i>Megaloceroea recticornis</i> (Geoffr.)	+	+	+
<i>Miridius quadrivigatus</i> (Costa A.)			+
<i>Phytocoris dimidiatus</i> Kbm.		+	
<i>Phytocoris obscurus</i> Reut.	+	+	
<i>Megacoelum beckeri</i> (Fieb.)		+	
<i>Adelphocoris detritus</i> (Fieb.)			+
<i>Calocoris schmidti</i> (Fieb.)			+
<i>Calocoris quadripunctatus</i> (Vill.)		+	
<i>Calocoris nemoralis</i> (F.)			+
<i>Calocoris trivialis</i> (Costa A.)			+
<i>Calocoris norvegicus vittiger</i> Reut.			+
<i>Orthops kalmi</i> (L.)			+
<i>Liocoris tripustulatus</i> (F.)	+		
<i>Cyphodema instabile</i> (Luc.)			+
<i>Capsus ater</i> (L.)			+
<i>Capsodes lineolatus</i> (Brullé)		+	+
<i>Capsodes mat</i> (Rossi)	+	+	
<i>Dionconotus cruentatus</i> (Brullé)	+	+	
<i>Halticus macrocephalus</i> Fieb.			+
<i>Orthocephalus proserpinae</i> M. R.			+
<i>Orthocephalus saltator</i> (Hhn.)			+
<i>Dimorphocoris mutatus</i> Seiden.			+
<i>Heterotoma meriopterum</i> (Scop.)	+		
<i>Reuteria marqueti</i> Put.	+		
<i>Orthotylus tenellus</i> (Fall.)		+	
<i>Cyllocoris histrionicus</i> (L.)		+	
<i>Myrmicomimus variegatus</i> (Costa A.)		+	
<i>Harpocera thoracica</i> (Fall.)		+	

<i>Plagiognathus arbustorum</i> (F.)	+		
<i>Plagiognathus chrysanthemi</i> (Wolff)		+	+
<i>Psallus anaemicus</i> Seiden.		+	
<i>Conostethus roseus</i> (Fall.)			+
<i>Asciodema obsoletum</i> (Fieb.)		+	
Ceratocombidae			
<i>Ceratocombus coleoptratus</i> (Zett.)	+		
Anthocoridae			
<i>Orius niger</i> (Wolff)			+
<i>Anthocoris gallarum-ulmi</i> (De Geer)	+		
<i>Anthocoris sarothamni</i> Dgl. Sc.	+		
Microphysidae			
<i>Loricula freyi</i> (Ldb.)	+		
Reduviidae			
<i>Ischnonyctes barbarus</i> (Luc.)			+
<i>Pirates hybridus</i> (Scop.)			+
<i>Coranus aegyptius</i> (F.)			+
<i>Rhinocoris erythropus</i> (L.)			+
<i>Rhinocoris iracundus</i> (Poda)			+
<i>Sphedanolestes argenteolineatus</i> (Costa A.)			+
<i>Sphedanolestes cingulatus</i> (Fieb.)		+	
<i>Holotrichius denudatus</i> Costa A.			+
<i>Phymata crassipes</i> (F.)		+	+
Nabidae			
<i>Prostemma guttula</i> (F.)	+		+
<i>Prostemma sanguineum</i> (Rossi)			+
<i>Aptus myrmecoides</i> (Costa A.)		+	
<i>Nabis capsiformis</i> Germ.		+	
<i>Nabis mediterraneus occidentalis</i> Rieg.		+	
<i>Nabis pseudoferus ibericus</i> Rem.		+	+
Leptopodidae			
<i>Leptopus marmoratus</i> (Goeze)			+
<i>Patapius spinosus</i> (Rossi)			+
Tingidae			
<i>Kalama tricornis</i> (Schrk.)		+	+
<i>Derephysia foliacea</i> (Fall.)		+	
<i>Tingis auriculata</i> (Costa A.)			+
<i>Tingis grisea</i> Germ.			+
<i>Tingis denudata</i> Horv.			+
<i>Catoplatus carthusianus</i> (Goeze)			+
<i>Acalipta hellenica</i> Reut.			+
<i>Galeatus major</i> Put.			+
Berytidae			
<i>Gampsocoris punctipes</i> (Germ.)	+	+	
<i>Neides aduncus</i> Fieb.			+

Lygaeidae

<i>Lygaeus equestris sicilianus</i> Wagn.	+		+
<i>Spilostethus saxatilis</i> (Scop.)			+
<i>Spilostethus pandurus</i> (Scop.)	+	+	+
<i>Melanocoryphus albomaculatus</i> (Goeze)	+	+	+
<i>Lygaeosoma sardea</i> Spin.			+
<i>Cymus melanocephalus</i> Fieb.			+
<i>Geocoris megacephalus</i> (Rossi)			+
<i>Macroplox fasciata</i> (H. S.)		+	
<i>Metopoplax ditomoides</i> (Costa A.)			+
<i>Oxycarenus longiceps</i> Wagn.			+
<i>Plinthisus brevipennis</i> (Latr.)		+	+
<i>Tropistethus holosericeus</i> (Schltz.)			+
<i>Ischnocoris hemipterus</i> (Schill.)			+
<i>Drymus ryeii</i> Dgl. Sc.		+	
<i>Drymus sylvaticus</i> (F.)		+	
<i>Taphropeltus contractus</i> (H. S.)			+
<i>Stygnocoris fulgineus</i> (Geoffr.)			+
<i>Stygnocoris sabulosus</i> (Schill.)		+	
<i>Graptopeltus lynceus</i> (F.)			+
<i>Graptopeltus validus</i> (Horv.)		+	
<i>Rhyparochromus minusculus</i> Reut.			+
<i>Beosus maritimus</i> (Scop.)			+
<i>Megalonotus sabulicolus</i> (Thms.)			+
<i>Megalonotus dilatatus</i> (H. S.)			+
<i>Trapezonotus arenarius</i> (L.)			+
<i>Trapezonotus ullrichii</i> (Fieb.)	+		
<i>Trapezonotus dispar</i> Stal		+	+
<i>Aoploscelis bivirgatus</i> (Costa A.)			+

Coreidae

<i>Gonocerus acuteangulatus</i> (Goeze)		+	
<i>Ceraleptus obtusus</i> (Brullé)		+	+

Alydidae

<i>Camptopus lateralis</i> (Germ.)			+
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Rhopalidae

<i>Rhopalus parumpunctatus</i> Schill.			+
<i>Chorosoma schillingi</i> Schill.			+

Pentatomidae

<i>Graphosoma semipunctatum</i> (F.)			+
<i>Sciocoris sideritides</i> Woll.	+	+	
<i>Sciocoris cursitans</i> (F.)			+
<i>Neottiglossa bifida</i> (Costa A.)			+
<i>Palomena prasina</i> (L.)		+	
<i>Eurydema ventrale</i> Klt.			+

Scutelleridae

<i>Odontotarsus purpureolineatus</i> (Rossi)			+
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Cydnidae

<i>Cydnus aterrimus</i> (Foerst.)	+	
<i>Ochetostethus pygmaeus</i> (Ramb.)		+
<i>Ochetostethus balcanicus</i> Wagn.		+

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