

**2nd INTERNATIONAL CONGRESS
CONCERNING THE RHYNCHOTA FAUNA
OF BALKAN AND ADJACENT REGIONS**

PROCEEDINGS

(Edited by SAKIS DROSOPOULOS)

Sponsors

Ministry of Culture and Science

Prefecture of Florina County

Hellenic Zoological Society

18-22 August 1986

Mikrolimni - Prespa

GREECE

The International Coordinating Committee

Dr. H. Abdul-Nour

Dr. M. Asche

Dr. S. Drosopoulos

Dr. V. D'Urso

Dr. M. Gogala

Dr. H. Hoch

Dr. M. Josifov

Dr. M. Klein

Dr. N. Lodos

The Organizing Committee

Dr. S. Drosopoulos

Dr. M. Loukas

Mr. P. Petrakis

Dr. L. Argyriou

Miss V. Kokkinos

Contributions

The zoogeographical character of Balkan Heteroptera.	M. JOSIFOV	6
A preliminary list and some notes on the Cicadomorpha (Homoptera-Auchenorrhyncha) collected in Greece.	S. DROSOPOULOS, M. ASCHE and H. HOCH	8
Heteropteran fauna of Slovenia: present state and characteristics.	A. GOGALA	14
Cicadellidae of Lebanon: new facts and ideas. (Homoptera - Auchenorrhyncha).	H. ABDUL-NOUR	15
The Psylloidea of Lebanon: preliminary records and prospects.	N. ZEIDAN-GEZE	17
Cixiidae and Delphacidae (Homoptera-Fulgoroidea) from Lebanon: a preliminary synopsis.	M. ASCHE and H. HOCH	18
Heteroptera of the island of Salina (Sicily, Italy).	S. IPPOLITO	20
On the Auchenorrhyncha (Homoptera) from Aeolian island (Sicily, Italy).	M. ASCHE and H. HOCH	21
On endemic and little known Heteroptera from Crete.	E. HEISS	28
<i>The Arocephalus longiceps</i> (Kbm.) – (Homoptera Cicadelloidea Paralimni): problems in intraspecific variability, geographical distribution and speciation.	M. ASCHE	30
<i>Patterns</i> of geographic distribution in the planthopper genus <i>Hyalesthes</i> Sign. (Homoptera Fulgoroidea Cixiidae): a phylogenetic approach.	H. HOCH	31
Species-discrimination and geographic distribution in the cydnid genus <i>Tritomegas</i> (Heteroptera, Cydnidae).	D. KAMMERSCHEN	33
Some remarks on the phylogeny of the Lygaeidae based on the male genital system.	I. HOPP	35
Electrophoretic studies on <i>Alebra albostriella</i> complex (Homoptera, Cicadellidae, Typhlocybinae).	M. LOUKAS and S. DROSOPOULOS	42
Biosystematic studies on the genus <i>Alebra</i> Fieber.	M. GILLHAM	44
A parthenogenetic planthopper found in Greece.	P.W.F. de VRIJER	46
Structures producing vibrational signals in Heteroptera.	M. GOGALA	47
The vibratory membranes in the genus <i>Euscelis</i> .	H. STRUBING and G. SCHWARZ-MITTELSTAEDT	49
Anti-predatory defence of some Rhynchota especially as it applies to avian insectivores.	D.L. EVANS	53
Structure organization and dynamics of Hemiptera-Plant communities of a mediterranean area: preliminaries and methodology.	P. PETRAKIS, V. TSELEPATIOTI-PETRAKI and S. DROSOPOULOS	54
DAPROPHECO: A specialized database system for integrated studies in Plant-Hemiptera communities.	P. PETRAKIS	62
Seasonal aspects and most important biotopes of Greece with reference to Hemiptera (Auchenorrhyncha-Homoptera and Heteroptera).	S. DROSOPOULOS	64
Round table on management of nature reserves in Prespa.		69

Heteroptera of the island of Salina (Sicily, Italy)*

By S. IPPOLITO

Dipartimento di Biologia Animale, Università di Catania, Sicilia, Italia

*Research supported by M.P.I. (40%) «Biogeografia delle Isole Eolie con riferimento anche alle Egadi e alle Pelagie».

I have undertaken the study of the Heteroptera of the island of Salina to contribute to the study of the fauna of the Aeolian archipelago, the knowledge of which is one of the aims of the Italian research program on Aeolian islands.

Tamanini, who in 1973 published a paper concerning the taxonomical and chorological study of the Heteroptera of the Aegadian and Aeolian islands and of the island of Ustica, found 53 species of Heteroptera in the island of Salina. The present paper reports on the results of researches conducted during the last two years, which allowed me to enrich the old list with 27 more species of Heteroptera, 8 of which are new not only for the Aeolian, but also for the Aegadian islands and for Ustica. Thus, the species known for Salina become 80, belonging to 16 families: a remarkable number when the poor variety of biotopes is considered. Most species are present also in Sicily and in Calabria, regions which constitute the most probable centers of origin of a great part of the Aeolian fauna.

The island of Salina is scoured by winds, whose role in the process of animal and plant colonization has been and is still certainly greatly significant. On the other hand, the volcanic activity, intense all along the Quaternary, has constituted a problem for the survival of the organisms on the island and it suggests that their biogeographical history must be interpreted also as the result of dispersion mechanisms.

Considering at first the species with the widest distribution, which are 30% of the species found, they can be divided into the following chorological categories (an asterisk marks the species new for Salina,

two asterisks the species new for the Aeolian and Aegadian islands and for Ustica).

1. Cosmopolitan species: **Taylorilygus pallidulus* (Blanch.), *Liorhyssus hyalinus* (F.), *Rhopalus subrufus* Gmel.
2. Holarctic species: ***Orthotylus flavosparsus* Shlb., *Pyrrhocoris apterus* (L.).
3. Palaearctic and Extrapalaearctic species: **Polymerus cognatus* (Fieb.), *Saldula pallipes* (F.), *Montandoniola moraguesi* (Put.), *Dictyla nassata* (Put.), *Corizus hyosciami* (L.), *Spilostethus pandurus militaris* (F.), *Geocoris lineolus* (Ramb.), **Paromius gracilis* (Ramb.), **Eurydema ornatum* (L.), **Carpocoris mediterraneus* Tam., ***Eysarcoris incospicuus* (H., S.), *Cydnus aterrimus* (Foerst.), *Macroscytus brunneus* (F.).
4. Euroasiatic species: **Liocoris tripustulatus* (F.).
5. Eurosiberic - Mediterranean (-Turanic) species: **Aphanus rolandri* (L.), *Rhopalus parumpunctatus* Schill., *Graphosoma lineatum italicum* (Mull.), *Aelia acuminata* (L.), *Eurydema oleraceum* (L.).

Almost all the species belonging to these five groups are of poor biogeographic value, since, due to their wide ecological range, they are those most easily adaptable and for some of them a passive introduction, more or less recent, cannot be excluded (Messina, 1984). Still, it is noteworthy the weight which not so much the cosmopolitan or holarctic species, but especially the palaearctic species *sensu strictu*, have in this group: namely the Euroasiatic (Europe plus Palaearctic Asia) and the Eurosiberic - mediterranean

species, more or less extended to Turkestan, which altogether represent 7.5% of the species.

Going to distribution patterns still Palaeartic, but clearly more limited, since they concern species absent in Siberia and often also in northern Europe, we find species with the following distribution:

1. Euromediterranean - centrasiatic: *Brachycarenum tigrinus* (Schill.), *Orius niger* (Wolff).
2. Euromediterranean - turanic, Euroanatolic - turanic and Euroturanic - Maghrebian: *Deraeocoris serenus* (Dgl., Sc.) *Macrotylus paykulli* (Fall.), *Trigonotylus pulchellus* (Hahn), *Prostemma guttula* (F.), *******Dictyonota strichnocera* Fieb., *******Macroplax fasciata* (H., S.), *******Megalonotus praetextatus* (H., S.), *Syromastus rhombeus* (L.), *Camptopus lateralis* (Germ.), *Odontoscelis minuta* Jack.

They are xerothermic species, widely distributed, constituting 15% of the total, whose normal areal should be central Asia and the Mediterranean and which later, probably during the Postglacial, colonized southern and central Europe, as steppe and Gramineae advanced (La Greca, 1984).

The species of the steppic zone of a limited part of western Asia or of the Mediterranean which have colonized Europe as well are few, about 2.5% of the total:

1. Euromediterranean - Iranic species: **Dicranocephalus albipes* (F.).
2. Euromaghrebian species: **Phytocoris exoletus* Costa.

The species of the former group extended presumably as far as the Mediterranean from their center of origin in western Asia during the Quaternary and especially during the great Interglacial, when a dry climate favoured the spread in Europe of a steppic vegetation. As regards the species of the latter group, we must suppose that these insects are good colonizers which spread in central Europe coming from the South (as already said for the Euromediterranean - centrasiatic species), advanced more or less deeply towards the North, but did not succeed in

reaching Scandinavia.

The species whose distribution gravitates around the Mediterranean have in Europe an even more reduced areal in comparison with those considered before, since they did not succeed in spreading beyond the coasts; they, which sometimes still have some relation with central Asia or with Iran, occupy the Mediterranean *sensu strictu*, but they often extend further to Azzorre, Canarie and Madera or along the Atlantic coasts of Morocco and of Europe up to the Northern Sea; therefore we find:

1. Mediterranean - centrasiatic species: **Agraphopus lethierryi* (Stal.).
2. Mediterranean - turanic - macaronesic and Mediterranean - turanic species: *Ploiaria domestica* (Scop.), *Aspilaspis viridulus* (Spin.), **Monosteira unicolorata* (Muls., Rey.), *Nysius graminicola* (Kol.), **Brachyplax tenuis* (Muls., Rey.), *******Microplax interruptus* (Fieb.), *Plinthisus brevicollis* Ferr., *Hyalochilus ovatulus* (Costa), *Rhyparochromus inarimensis* (Costa), *Ceraleptus obtusus* (Brullé), *Coriomeris hirticornis* (F.)¹, *Geotomus punctulatus* (Costa).
3. Mediterranean - iranica species: **Holcostethus strictus* (F.).
4. Mediterranean - atlantic species: *Orius laevigatus* (Fieb.), **Rhinocoris erythropus* (L.), *******Coriomeris affinis* (H., S.).
5. Mediterranean - macaronesic species: *Cyphodema instabile* (Luc.).
6. Mediterranean species: *Campylomma nicolasi* Pt. & Rt., *Calocoris nemoralis* (F.), *Calocoris norvegicus vittiger* Reut., *Dicranocephalus setulosus* (Ferr.), *Haploprocta sulcicornis* (F.), *Neottiglossa bifida* (Costa), **Holcostethus albipes* (F.).

The species living in the eastern Mediterranean, for which the Italian peninsula is the western limit of their geonemy, are represented by the species *Lygaeus creticus* Luc., which has a very wide distribution, since it extends as far as Afghanistan.

To the group of species with Mediterranean gravitation also *Tuonia michalki liparensis* Tam. belongs, which is endemic

of the Aeolian islands and ***Orthotylus sicilianus* Wagn., which had been so far considered endemic of Sicily, but which I found also in Salina. Presently, for the latter species we cannot exclude the hypothesis of a recent introduction from Sicily to the Aeolian islands.

Confined only to the Mediterranean coasts of Europe, eventually extending to Maghreb or to Macaronesia, we find:

1. Species with N-mediterranean - central distribution: *Exolygus italicus* Wagn., *Berytinus hirticornis nigrolineatus* (Jak.).
2. Species with N-mediterranean - macaronese distribution: * *Pachitomella passerinii* (Costa).
3. Species with N-mediterranean - anatolic distribution: *Emblethis duplicatus* Seid.
4. Species with N-mediterranean - maghrebian distribution: *Pachyxyphus lineellus* (Muls.), *Megalocoleus aurantiacus* (Fieb.), *Macrolophus caliginosus* Wagn., **Calocoris trivialis* (Costa), *Rhyparochromus minusculus* (Reut.), **Micrelytra fossularum* (Rossi).

It is highly probable that the settlement of the species with a purely Mediterranean gravitation (but maybe to these the Euromediterranean species considered above are to be added) is prequaternary (La Greca, 1984) and that, during glaciations, they succeeded in saving themselves in shelters along the coasts, from where they later reextended in the whole area presently occupied by them.

Also of prequaternary origin, but limited to the western Mediterranean area, is an other interesting group of species, well represented in Sardinia and Sicily (La Greca, 1957); it is constituted by four species with W-mediterranean distribution: *Amblytulus brevicollis* Fieb., *Tuponia mixticolor* (Costa), **Nabis pseudoferus ibericus* Rem., *Horvathiolus gibbicollis*

(Costa).

These indications concur in strengthening the hypothesis that the Aeolian fauna is, at least in part, of prequaternary origin, while the rest is of invasive, more or less recent, origin.

References

- La Greca, M., 1957. Considerazioni sull'origine della fauna siciliana. – Boll. di Zoologia, 24: 592-631.
- La Greca, M., 1964. Le categorie corologiche degli elementi faunistici italiani. – Mem. Soc. Entom. Ital., 43: 147-165.
- La Greca, M., 1984. L'origine della fauna italiana. – Le Scienze, 187: 66-79.
- Messina, A., 1984. Introduzione allo studio del popolamento animale dell'arcipelago delle Isole Eolie. – Atti dei Convegni Lincei, «La biogeografia delle Isole», 62: 119-140.
- Péricart, J., 1972. Hémiptères Anthocoridae, Cimicidae et Microphysidae de l'Ouest-paléarctique. – Faune de l'Europe et du Bassin méditerranéen 7: 1-402. Masson et Cie, Paris.
- Péricart, J., 1983. Hémiptères Tingidae euro-méditerranéens. – Faune de France 69: 1-622, Paris.
- Servadei, A., 1967. Rhynchota (Heteroptera, Homoptera Auchenorrhyncha). Catalogo topografico e sinonimico. – Fauna d'Italia, 9: 1-851. Ed. Calderini, Bologna.
- Stichel, W., 1955-1962. Illustrierte Bestimmungstabellen der Wanzen II. (Hemiptera Heteroptera Europae). 1-4: 2173. Berlin.
- Tamanini, L., 1973. Studio sistematico e corologico degli Emitteri Eterotteri delle Isole Egadi, Eolie e di Ustica. – Boll. Acc. Gioenia Sc. Nat., Catania, Ser IV, vol. XI, Fasc. 9-10: 9-88.
- Wagner, E., 1970-1975. Die Miridae Hahn, 1831, des Mittelmeerraumes und der Makaronesischen Inseln (Hemiptera, Heteroptera). – Ent. Abhandl. St. Mus. Tierk. Dresden. Suppl. Band 37, 39, 40, pp. 1388.