ZOOGÉOGRAPHIE ET ÉCOLOGIE DE LA GRÈCE ET DES RÉGIONS AVOISINANTES

ZOOGEOGRAPHY AND ECOLOGY
OF GREECE
AND NEIGHBOURING REGIONS

ΖΩΟΓΕΩΓΡΑΦΙΑ ΚΑΙ ΟΙΚΟΛΟΓΙΑ ΤΗΣ ΕΛΛΑΔΑΣ ΚΑΙ ΤΩΝ ΓΕΙΤΟΝΙΚΩΝ ΠΕΡΙΟΧΩΝ

Comptes-rendus du 2e Congrès International tenu à Athènes du 7 au 12 Septembre 1981

AVANT-PROPOS

Le présent mémoire rassemble les communications du 2e Congrès international sur la zoogéographie et l'écologie de la Grèce et des régions avoisinantes, organisé par la Société Zoologique Hellénique et tenu à Athènes du 7 au 12 septembre 1981.

Il contient également les comptes-rendus de trois «Tables rondes» organisées

pendant le Congrès:

A. Relations zoogéographiques entre la Gréce et les régions adjacentes.

B. Protection de la faune et des biotopes de Grèce

C. Buts, plans et principaux problèmes des zoologistes travaillant sur la zoogéographie et l'ecologie en Grèce.

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Remerciements

Le présent volume est publié Avec l' aide d' une subvention du Service de l' Environnement du Ministère de la Coordination

-Avec l' aide d' une subvention du Ministère de la Culture et des Sciences.

-Avec la participation du «Groupe Franco-hellénique des recherches biologiques et de la «Station Biologique Franco-hellénique de Kéramou».

Pour sa réalisation ont collaboré: A. DROSOPOULOS, M. DROSOPOULOU. A. LEGAKIS, M. MYLONAS et J. MATSAKIS.

RECENT TRENDS IN THE STUDY OF THE GREEK FAUNA

by

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The systematic study of the greek fauna started in the beginning of the I9th century. Since then, the articles and books on the greek fauna increased steadily until the late I920's. The economic crisis most probably resulted in a rapid decrease of articles up to I950. Ever since then, numbers of articles are increasing again at a much higher rate.

An increase is also observed in the number of greek researchers working on the greek fauna as well as the number of articles published in greek periodicals. Among other nationalities, most articles are published in w. german, french, british, italian, dutch and swiss periodicals.

The Arthropoda is the phylum that concerns most researchers. Among them it is the Insects that attract most attention with the Lepidoptera and Coleoptera being most popular. Other animal groups that have been studied well are the Crustaceans, the Arachnids, the Molluscs and the birds.

The regions that have been studied most are the islands of the Ionian and the Aegean Seas.

ETUDE PRELIMINAIRE DU ZOOPLANCTON SUPERFICIEL DU GOLFE DE PATRAS EN NOVEMBRE 1980

par

I.SIOKOU-FRANGOU et M.GORGOGETA-PAPAIOANNOU

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RESUME

Un essai d'étude du zooplancton du golfe de Patras est entrepris, après avoir analysé des echantillons obtenus par traits horizontaux, en Novembre 1980, sur 27 stations reparties dans le golfe de Patras et les regions avoisinantes de la mer Ionienne d'un côté et du golfe de Corinthe de 1' autre.

Au point de vue quantitative, on pourrait dire quele zooplancton du golfe de Patras est pauvre (273 n.i/m³) et il se trouve au même niveau que la région étudiée de la mer Ionienne. Les Copépodes sont le groupe le plus important (85,36 % du nombre total d'individus) et les espèces dominantes sont Temora stylifera et Clausocalanus arcuicornis, sauf aux stations qui se trouvent devant l'embouchure du fleuve Evinos et devant le port de Patras, où domine Acartia clausi. Le deuxième rang est occupè par les Cladocères qui sont suivis par les Siphonophores, les Gasteropodes, les Appendiculaires, les Chaetognathes et les Thaliacès. Le zooplancton superficiel du golfe de Patras présente un caractère néritique et il est plus ou moins similaire avec celui de la mer Ionienne.

THE OFFSHORE BENTHIC FAUNA OF THE PATRAIKOS GULF

by

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Abstract

This paper presents the results of a survey carried out in August 1981 in the Patraikos Gulf. 21 stations were sampled at depths ranging between 30 and 126 metres. The sediment was uniform over the whole Gulf consisting mainly of mud. One animal community, namely that of the coastal terrigenous mud extended over the whole area. Out of 355 species found, the Polychaeta accounted for 49.9%, the Mollusca for 18.6% and the Arthropoda for 14.7%.

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J. KASTRITSI-KATHARIOU, V. KONSTANTINIDIS and C. THEODORIBASSIS

The brine shrimp, Artemia, is an anostracan crustacean, bisexual or parthenogenetic and reproduced either ovoviviparously or oviparously. It is found worldwide in salt lakes and brine ponds, where no food competitors or predators are present.

In Messolongi two solar salt-works were surveyed, which are presently operating within a few miles from each other, both located on the coast and both using water originating from the same lagoon. Both saltworks are active every year, roughly from March to October.

Our survey started in March. We have observed, that in one of the salt-works, a parthenogenetic Artemia population exists. The other one has no Artemia population and is inhabited by the fish Aphanius fasciatus, which is also tolerant to high salinities.

We recorded the fluctuations in Artemia's population density, the environmental variables (D.O., temperature, pH, etc.) and collected cysts for further laboratory work.

It is a well-known fact, that Artemia cysts are utilized worldwide as a primary source of live food to culture larval and juvenile stages of commercially important marine species (fishes, shrimps etc.). This results, however, in a total dependence on imported cysts for all countries without their own Artemia resources, which are very expensive for developing countries, such as Greece, with scarce foreign exchange reserves.

We plan to carry out a research programme for an overall evaluation of Artemia strains in Greece, as we feel that such a study would be of economic importance for Greece and a contribution to the knowledge of the greek fauna.

BRYOZOA OF THE GREEK COASTAL WATERS AND THEIR TAXONOMIC CHARACTERS

J. KASTRITSI-KATHARIOU, & V. KIORTSIS

Bryozoa are coelomates, sedentary colonial metazoa, epiphytic or epizoic, which are found worldwide in the sea, in depths ranging from 0-150 meters, and also in fresh and brackish waters. They consist of living species and fossils, and their evolution is both quantitative and qualitative.

Our material was collected from depths ranging from 0-7 meters and from the following regions: Piraeus, Gulf of Korinth, Laurion, Gulf of Patras, Aulida, Rhodes.

In order to classify Bryozoa in a new way, accessible even to a non specialist of the group, we have chosen from the international literature, those characters, which, according to our evaluation, were constant, non-disputable, remained unaltered after the fixation of the organisms and were not quantitative. After this was accomplished, we proceeded to draw up taxonomic formats of selected criteria, which consist of 17 multistage data as well as 13 dichotomic asymmetrical and 1 dichotomic symmetrical.

For the systematic classification of the classes, a) Phylactolaemata and b) Gymnolaemata and their genera, five formats were required.

Every organism exhibits only a limited number of the characters that appear in the formats. After investigating the organism for the selected characters, a + (plus) sign is set near the character found in the organism and which thereafter constitutes a criterion for the systematic classification of same organisms.

As now the observer has to check only the recommended points on the organism, the classification is made both simpler and quicker.

In the aforementioned regions, 19 species belonging to 16 families were recorded.

Of special interest are the species a) Electra posidoniae (Electridae) which was present in all regions and in great numbers, b) Bugula sp. (Bicellarillidae) which was recorded only in the port of Piraeus and in the Gulf of Patras. During former experiments concerning fouling, we observed, on wooden and plastic samplers, which were left submerged in small depths for periods of time ranging from 1-12 months, excessive growth and a variety of Bugula species in the port of Piraeus, very few colonies in Aulida and none in the Gulf of Korinth.

The above observations indicate that the existence of this genus is favoured in closed and polluted areas. This indication will be the subject of a research programme in the near future.

EUTROPHISATION, POLLUTION NUTRITIONELLE ET RESTAURATION DES LACS UN EXEMPLE PARTICULIER, LE LAC DE IOANNINA

par

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L' eau est une ressource naturellement renouvelee que l'homme exploit a de multiples fins: boisson, irrigation, energie, frigories, aquaculture, loisirs.

Simultanement il utilise l'eau pour eliminer un certain nombre de sous produits indesirables: sels mineraux, matières organiques. L'augmentation en diversité et en quantité des activités humaines a vendu incompatible ces deux types d'utilisation de l'eau et necessaire la mise en oevre d'un contrôle technique, administratif et legislatif des nuissances s'y manifestant.

Celles-ci sont relativement faciles a percevoir et à juguler si leurs effets sont rapides et violents et si leurs causes sont simples. Ce n'est malheuresement pas le cas de l'eutrophisation dont la complexité des causes et la lenteur des effets lui ont laisse tout le temps de progresser pendant que polluers et pollues en debattaient et en debattent encore.

Il est courant par le terme de l'eutrophisation a decrire les transformations subies par les biocenoses du fait de la mobilisation des principaux nutriments, facteurs de la production vegetale en milieux aquatique: le phosphore et l'azote.

Pourtant la signification multiple du terme peut preter a confusion:

- Confusion entre la cause (la mobilisation des nutriments) et la consequence (les perturbations de l'écosystème).
 - Confusion entre le phenomene naturel et le phenomene artificiel.
- Confusion entre le phenomène artificiel volontaire et le phenomène a artificiel involontaire.

L'eutrophisation est un mal qui se manifeste dans les masses d'eau de taille diverses (un exemple particulier étant le lac de Jannina), les racines s'étendent sur l'ensemble des bassins versants.

Produit d'une certaine civilisation de "production" c'est un mal qui menace aussi la sante publique comme l'a menacee la pollution organique et bacterienne auparavant. Il est interessant de noter que c'est justement en essayant de traiter tres imparfaitement cette pollution organique primaire qu'on a facilité le developpement de cette pollution organique secondaire qu'est l'eutrophisation.

Les poissons des systèmes d' Axios- Doirani et de Gallikos.

par

P.S. ECONOMIDIS et V.P. VOYADJIS

Resumé.

L'ichthyofaune du système entièr d'Axios se consiste de 35 taxa dont les 32 sont autochtones et les restes se sont introduits.

La rivière même d'Axios a la presque totalité, avec 34 espèces tandis que le lac de Doïrani ne comprend que 18. La rivière de Gallikos, dont l'ichthyofaune s'examine pour la première fois maintenant, comprend 6 espèces.

Les espèces <u>Barbus cyclolepis</u>, <u>Pungitius platygaster</u>, et <u>Knipowitschia caucasica</u> se sont trouvées aux parties helleniques mais ne se mentionnent pas aux parties yougoslaviques. Ils existent ll sous-espèces endemiques et une espèce endemique, la <u>Rutilus macedonicus</u>.

L'ichthyofaune des systèmes examinés, comme celles des rivières voisines de Loudia et Aliakmon, semble d'être relativement peu ancienne. Elle constitue un secteur separé de la region Potocaspienne, ayant le caracteristique particulièr de l'affinité d'un nombre remarquable d'espèces avec ses proches du Danube moyen. On suppose qu'elles sont introduites de cette rivière au système d'Axios par la voie de Morava. La Rutilus macedonicus est une espèce plutôt ancienne.

CONTPIBUTION A L'ETUDE BIOLOCIQUE ET ECOLOGIQUE DE L'ESCARGOT COMMESTIBLE EOBANIA VERMICULATA (MULLER) (GASTEROPODE PULMONE, HELICIDAE).

par

Maria LAZARIDOU-DIMITRIADOU et M.E. KATTOULAS

La biologie et l'écologie de l'escargot commestible <u>Fobania vermiculata</u> (Muller) ont été examinées. L'étude des histogrammes de fréquence de tailles et de leur progression modale montrent : qu'il existe deux modes de tailles à un moment donné de l'année, que les animaux vivent 2 à 3 ans, que la ponte et l'eclosion ont lieu en automme, que la vitesse de croissance la plus importante est notée pendant les mois de printemps et qu'enfin les jeunes individus n'hibernent et n'estivent pas réelement. De plus, par l'étude biométrique et biologique il a été montré que les escargots sont sexuellement matures quand le grand diamètre de leur coquille atteint = 25 mm., c'est-à-dire environs 18 mois après l'eclosion; à partir de cette taille l'ombilic de la coquille est recouvert et très souvent son péristome est réfléchi.

A CONTRIBUTION TO THE STUDY OF BIOLOGY AND ECOLOGY OF THE EDIBLE SNAIL <u>EOBANIA</u>

<u>VERNICULATA</u> (MULLER) (GASTROPOD PULMONATE, HELICIDAE).

By this study the biology and ecology of the edible snail <u>Eobania ver-miculata</u> (Miller) were examined. The demographic study and the analysis of the histograms show: that exist two populations in any moment of the year, that the snails live about 2 to 3 years, that egg laying and hatching happen during autumn, that the most important growth rate takes place during spring time and that the young individuals do not really hibernate or estivate. Moreover, by the biometric and biologic study, it was shown that the individuals are sexually mature when the great diameter of their shell is approximatively 25 mm., that means about 18 months after hatching; at that moment the umbilicus of the shell has already been covered and usually the peristome is turned up.

THE DISTRIBUTION AND ECOLOGY OF THE SPECIES HELIX GODETIANA, KOBELT. (GASTROPODA, PULMONATA)

by
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All the data about the taxonomy and distribution of Helix godetiana rely only on dead material. In 1979 I found in very few localities in the Islands of Amorgos, Naxos and Anaphi live material which gave me the chance to describe its genital system.

The distribution of the species is restricted to the Aegean Islands and especially the Cyclades, where it exists in many islands as a subfossil. In the subfossil layers as well as in areas where it is alive, it avoids the other species of the genus Helix except Helix figulina.

Its relatively widespread distribution in the past and also its tendency to avoid the other species of Helix that are predominate now in the Cyclades and are never to be found in subfossil layers, lead to the conclusion that Helix godetiana is a displaced species and now faces the danger of extinction under the pressure of the simultaneous distribution of the synanthropic Helix species such as Helix aspersa and also Eobania vermiculata.

A preliminary study on the ecology of the species shows that it is more stenoecous than the other Helix species that exist in the Aegean Islands.

THE PARASITES OF THE EATABLE SNAILS IN GREECE

I. The parasites of the land snails Helix aspersa and H. lucorum.

by

S.Haralabidis, M.Papazachariadu, M.Lazaridu-Dimitriadu

Cercariae (20-35 for each snail) and metacercariae (2-20 for each snail) of the digenetic trematode parasite Brachylaima migrans Duj.1845 (Digenea:Brachylaimidae) were found in the kidneys of 280 (73,68%)out of 380 land snails Helix aspersa and 82 (60,74%)out of 135 H.lucorum.

They were also found adult mites *Philodromus limacum* in the pulmonate sac of 26 (6,84%) *H.aspersa* (2-16 for each snail) and 5 (3,7%) *H.lucorum* (1-9 for each snail).

The artificial digestion of a pool of feet of each species of snails examined, yielted 4 species of larval stages of non identified nematode parasites $(1400 \times 60 \mu, 1090 \times 50 \mu, 700 \times 34 \mu \text{ and } 450 \times 50 \mu)$.

Eighteen days after experimental infection of 4 white mice with 30 metacercariae for each animal were found in the faeces eggs of *B.migrans* and the adult parasite in the intestine at the necropsy.

THE OLIGOCHAETOFAUNA OF CHALKIDIKI

by

Dr. K. MICHALIS and S. PANIDIS SUMMARY

In the present research work it is studied the Oligochaetofauna of Chalkidiki. The collection was done in 13 differents biotopes and during the systematik elaboration of the samples were found 17 species. From these species, Eiseniella colchidica was found for first-time in Greece by Zicsi-Michalis on 1980. It's presence in Chalkidiki is very interesting.

The various samples were studied statistically. On table I. we can see the number of species in each biotope, as also their percentage. On table II. we compare trhough χ^2 - test the different biotopes, with each other, for the presence or the absence of various species in these.

We concluded from table II. that biotopes look like each other more in the absence of some species and less in the presence of the these species in the sames biotopes.

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We also concluded that some biotopes look like each very much, because of the presence in these (biotopes) more that two species.

2d INTERNATIONAL CONGRESS ON ZOOGEOGRAPHY AND ECOLOGY PERTAINING TO GREECE AND ADJACENT REGIONS, Athens, September 1981

A propos de la faune de l'fle d'Eubée : analyse zoogéographique préliminaire

J.Matsakis

Essai d'analyse zoogéographique rationelle de la faune de l'fle, basée sur les groupes ou taxons ayant une valeur représentative (d'après les connaissances actuelles) et sur une distinction des divers types de distribution avec la signification particulière de chacun. Estimation du taux d'endémisme et gradation des affinités faunistiques avec les secteurs voisins.

Il est proposé de reconnaître à l'île d'Eubée le statut d'une véritable sous-région biogéographique, plutôt que de la rattecher, purement et simplement, à la Sterea Hellas ou la réduire au rang d'une zone de transition, dépourvue d'individualité

THE KNOWLEDGE ON THE MITE FAUNA OF HONEY-BEES AND BEE-HIVES IN GREECE.

C.D.Pelekassis and N.G.Emmanouel

SUMMARY

The knowledge on the Greek mite fauna of honey bees and beehives is limited only to two species, namely: Acarapis woodi (Ren.) and Varroa jacobsoni Ouds.

A preliminary study on the beemites in Greece revealed the presence of twelve (12) more species. An annotated list of all species found is given. Clycyphagus domesticus (De Geer) and Neocypholaelaps sp.were the most frequent and dominant.

A NEW SPECIES OF MITE FROM THE FAMILY TARSONEMIDAE (ACARI:PROSTIGMATA) AND THE PRESENT STATUS OF KNOWLEDGE OF THAT FAMILY IN GREECE.

N.G.Emmamouel and A.Ch.Papapanou-Emmanouel

SUMMARY

Although of considerable importance to agriculture, the family Tarsonemidae (Acari: Prostigmata) is not well studied in Greece. The only species known are: Acarapis woodi (Ren.), Tarsonemus hercules, T. schaarschmidti Mah. T. virgineus Suski, T.pallidus Banks, Steneotarsonemus konoi Smiley and Emmanouel, S.hatzinikolisi Emmanouel and Polyphagotarsonemus latus (Banks).

A new species: Steneotarsonemus smileyi enjuring Phragmites communis (Gramineae) is described and figured.

ERIOPHYID MITES OF OLIVE TREES IN MEDITERRANEAN AREAS (ACARIDA- ERIOPHYIDAE)

By E. HATZINIKOLIS and A. KOLOVOS

This paper presents: First, the distribution, the economic importance, the symbiosis and the attack of Eriophyids on olive trees in Greece Second, it records the available Knowledge on Eriophyids of olive trees in the area of Mediterranean, a thorough a review of literature.

TENUIPALPID MITES OF OLIVE TREES IN MEDITERRANEAN AREAS (ACARIDA - TENUIPALPIDAE)

By E. HATZINIKOLIS and A. KOLOVOS

This paper presents: First, the description of Hystripalpus hellenicus nsp., some informathions for the distribution, the economic importance and the attack of Tenuipalpid on olive trees in Greece. Second, it records the available Knowledge on Tenuipalpid of olive trees in the area of Mediterranean, thorough a review of current li terature.

THE GREEK INSECT FAUNA OF STORED PRODUCTS by Dr. Constantin Th. BUCHELOS

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Abstract: Since the related research was in the past very few, the knowledge on the stored products insect fauna in Greece is limited and a certain number of species comes from specimens send for identification.

Extent survey works mainly into flour mills and dried raisins (cuzzants and sultanas) stores during the 4 last years, produced a cowsiderable number of insect species associated with stored produce.

Lists of 54 Coleoptera and 12 Lepidoptera species belonging to 20 different families, together with world distribution data and habitat in Greece for each insect, are given as a result of a general survey of insects found on greek stored products.

DISTRIBUTION PATTERNS AND ZOOGEOGRAPHICAL ANALYSIS

OF DUNG BEETLES IN GREECE (COLEOPTERA SCARABAEOIDEA)

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ABSTRACT

The preliminary results of zoogeographical and ecological researches on dung beetles of Greece is given.

Nine geographical regions have been individuated inside of Greece and similarity among them is discussed using the Index of Jaccard and by Dendrograms arranged according to Unweighted Pair-Groups Method of Clustering (Sneath and Sokal, 1963).

Moreover a preliminary comparison among Italy and Turkey faunas is carried out from a zoogeographical point of view. Distributional patterns of Grecians, Italians and Turkish elements are settled according to the terminology of La Greca(1964).

From an ecological point of view ,seasonal changes in the structure of dung communities have been observed in Katara Mount.

A comparison is also made among different horizonts of Greek Mountains (Pindo, Parnaso, Olimpo, Smolikas).

SOME DATA ON THE RESTORATION OF DENSITY
AND ACTIVITY OF EXOCHOMUS QUADRIPUSTULATUS L.
(Coleop. Coccinellidae) INABIOTOPE AT DELFI

by

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ABSTRACT

Between 1972 and 1981, the most important entomophagous insects of Saissetia oleae in the region of Delfi were:

- in the coastal zone of Itea, the Hymenoptera Metaphycus helvolus and Scutellista gyanea, and the Coccinellid Chilocorus bipustulatus;
- in the elevated zone of Arahova, the lady beetle Exochomus quadripustulatus.

Releases of the latter species were made in the late spring of 1981 in a test plot at Arahova.

These contributed to the formation of a population of new generation adults there, which was four times more dense than the corresponding population in the control plot.

In July, the progress of this endeavor was stopped by aerial spraying for the control of <u>Dacus</u> oleae, which resulted in the extermination of the populations in both plots.

CONTRIBUTION TO THE ZOOGEOGRAPHY OF ANTS (HYMENOPTERA, FORMICIDAE) IN THE CREEK ISLANDS

by -

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The distribution of ants in the greek islands both in the Aegean and the Ionian Sea, is studied here. Four insular regions, Crete, the Dodecanese, the Cyclades and the Ionian islands, and one mainland, Attica, are distinguished and compared with the use of a similarity index.

The islands of the Dodecanese are the most separate from the other islands. They have both a high number of endemic species and close affinities with the coastal fauna of Asia Minor and the Middle East. Crete has also a high number of endemics but is less related to the coastal fauna. Its most close relatives are the Cyclades. The ant fauna of the Cyclades is characterised by species with distribution that covers both the mainland and the islands. However, it is related more to the other Aegean islands than to the mainland. The Ionian islands have also ants that are distributed all over Greece. One part of the Ionian ant fauna is closely linked with the fauna of northeast Italy and Dalmatia. The Pindos mountains seem to act as an eastern barrier for the distribution of a certain number of ant species

A LIST OF SOME APHIDS OF GREECE AND THEIR NATURAL ENEWIES

By

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Summary

This paper is a continuation of an earlier one and concerns ten species of Aphids collected on nine species of host plants in Greece. It is based on collections made from \$\mathbb{T}976\$ up to now. The list records three species new to the fauna of Greece. The parasites and predators of some of them are also noted.

Hemipterological studies in Greece Part II Homoptera-Auchenorrhyncha Additional notes to the family Delphacidae

By S. DROSOPOULOS and M. ASCHE

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Abstract

Sixteen delphacid species new to the Greek Hemipterofauna are reported in this paper. For each of these species are given systematic, ecological and zoogeographic notes. For two additional species, not recorded previously by the authors, are given locality data. One species reported previously remains still unknown to the authors.

Zoogeographic and ecological relations between the planthopperfauna of Greece and adjaced countries (Homoptera - Delphacidae)

By S. DROSOPOULOS

Abstract

The known planthopper species of Greece, Albania, Yugoslavia, Bulgaria, Turkey, Cyprus and Italy are listed. Each of the 141 species occurring in these countries is treated zoogeographically. The zoogeographic position of the planthopper-fauna of each country is analyzed. In addition, a comparison with some remarks between the planthopper-fauna of Greece and the other countries is given.

PRAYS OLEAE (BERN) : SEASONAL PATTERNS OF POPULATIONS AS DETERMINED ON PHEROMONE TRAPS

by

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ABSTRACT

During the years 1980 and 1981 the Pheromone of the PRAYS OLEAE (Bern.) was used with DELTA traps in two Olive groves in Greece, in order to study the flight of the moth during the whole years. The results based on the male moth catches showed that each of the three generations (leaf, flower and fruit) has a 43-50 days duration of flight and the maximum of the flight happens during the fruit generation (first days of June).

During the winter period, December to April, as well as during the period end of July until September, there are no catches in the traps.

KEY WORD INDEX : PRAYS OLEAE (BERN.), PHERO MONE TRAPS, OLEAE EUROPAEA L.

NOTES ON THE LEPIDOPTERA-FAUNA OF ICARIA

by

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ABSTRACT

We present some data on the Lepidoptera fauna of the Island Icaria which we caught during the Summer of 1977 and 1978.

Twenty five (25) species were collected. Some data on their destribution in Greece are given too.

ON SOME THRIPS OF GREECE

bу

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Abstract

A number of thrips species were collected in Greece, during 1977-1981, in different areas of the country. Four species are recognised as plant pests, two are beneficial, as they prey on other thrips, and the role of the rest species is unknown. One of them namely <u>Limothrips</u> anguilicornis Jablonowsky is recorded for the fist time in the fauna of Greece.

OBSERVATIONS ON THE BREEDING ECOLOGY OF CARETTA CARETTA IN ZAKYNTHOS, GREECE.

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ABSTRACT

A descriptive account of observations during four nesting seasons (1977-80) is given, concerning the breeding ecology of loggerhead turtle (Caretta caretta) in the recently discovered rookeries of Zakynthos.

Observations cover nesting and hatching activity as well as behavioural patterns of adult females and hatchlings.

Predation and factors that affect breeding are described with emphasis on human interferences.

At the end, the need to establish a sea turtle biogenetic area in Zakynthos is discussed.

ICELAND GULL (Larus glaucoides): A NEW SPECIES TO GREECE

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SUMMARY

On 12th Dec. 1980, one 1st year Iceland Gull (Larus glaucoides) was seen at the port of Chalkis, for two hours. It was flying around together with about 60 Black-headed Gulls (Larus ridibundus) and 40 Herring Gulls (Larus argentatus).

The bird was smaller than a Herring Gull, with more elegant silhouette, that is longer wings, short tail and small head. The plumage was white but with fine pale brown mottling and barring which made the bird look buffish or brownish from a distance.

Identification problems are discussed and especially confusion with the Glaucous Gull (Larus hyperboreus).

According to the local circumstances and the severe winter conditions of that period, it seems that this bird was a vagrant, driven away from its normal distribution area by the strong winds or the unusally cold weather.