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ECOLOGY OF GREECE AND ADJACENT REGIONS

B O O K
O F
A B S T R A C T S

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DESIGN OF WILDLIFE REFUGES - WHAT CAN ISLAND BIOGEOGRAPHIC
PRINCIPLES TELL US?

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February 9, 1984

ABSTRACT

The contention has been advanced that the dynamic equilibrium theory of island biogeography provides guidelines for designing wildlife refuges. In particular, the theory is said to mandate single large refuges rather than groups of small ones of equal total area, and round refuges rather than long, thin ones of equal area. Both preferred designs are believed to minimize species extinction.

In fact, these contentions are questionable on three grounds. 1) There is considerable doubt that the equilibrium theory accurately depicts many biological systems. 2) The theory actually makes no predictions about either aspect of refuges design, shape or disposition among one or more sites. 3) An empirical scan of relevant observational data suggests that neither pattern is likely to obtain often, at least at the size scale that conservationists normally consider as feasible for refuges. The land birds of the Cyclades are examined to test both hypotheses about refuge design. However, direct experimental tests are sorely needed.

The key requirement for conservation of any target species is a large enough amount of its appropriate habitat so that various stochastic genetic and ecological consequences of small population size are avoided. Adequate habitat information is available for very few species, and the study of minimum feasible population sizes is in its infancy. A subsidiary requirement is the presence of sufficient numbers of individuals of those species involved in obligatory interactions with the target species. Such interactions can be detected only through exhaustive field study.

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PRESENCE/ABSENCE DATA FOR SPECIES ON ISLANDS - AN EXEMPLARY
ANALYSIS FOR BIRDS OF THE CYCLADES

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ABSTRACT

Binary matrices of biogeographic presence/absence data are not likely to tell us much about the forces responsible for geographic range limitations of difference species. In particular, it is unlikely that such matrices can provide strong evidence for the workings of interspecific competition. Such matrices can be analyzed in two modes.

R-mode analysis compares species to see how similar they are in which sites they occupy, and would seem to be the most direct kind of analysis to test for whether two species exclude one another. However, because of the vast numbers of pairs and larger combinations of species, the observation that one pair shares fewer islands than an independent colonization hypothesis would predict cannot be taken as prima facie evidence that an interaction is occurring. One must examine the entire matrix to see how many pairs share 0, 1, 2, etc. sites, and must compare this distribution to an expected distribution. Even if one does this and finds an excess of species combinations sharing few or no sites, one cannot tell which of these combinations shares few sites because of a species interaction and which shares few sites because of chance. Finally, forces other than interspecific competition would be expected to affect the distribution the same way: more pairs than expected sharing few or no sites.

In Q-mode analysis the situation is similar. The observation that a pair of islands shares few species is difficult to interpret without much more information. If the binary matrix is the only information available, then at least one must calculate all possible pairwise similarities, and must compare these to the expected similarities if species colonized islands independently of which other species were already there. Even if the observed distribution of pairwise similarities among islands seems statistically significantly different from that expected under an independence hypothesis, there are several possible explanations for the difference and the matrix alone cannot help one to distinguish among them.

For land birds of the Cyclades, the R-mode analysis for pairs of birds shows that there are about as many pairs of birds sharing 0, 1, 2, etc. islands as one would have expected if species were independent. Also, many more pairs of birds share more islands than expected than share fewer islands than expected. Neither of these results demands that one posit interspecific

competition as a force shaping the species distributions. The patterns for congeneric species alone do not differ from those for all species. Similarly, the Q-mode analysis shows that more islands pairs share more species than expected than share fewer species than expected. The nearer islands are to one another, the greater the likelihood of a large excess of observed species shared over expected. However, other forces shape the distribution of similarities, and more biological and physical information would be needed to begin to explain them. Again, if competition were responsible for the distribution of these similarities, it should have caused an effect opposite to that observed: more islands should share fewer species than expected.

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Contributions to the knowledge of historical biogeography of the
Balkan-peninsula, especially of Greece.

by Wilhelm Kühnelt (Wien, Austria.)

In an earlier paper (Biologie/Gallo-Hellenica VIII.17-22) the author has discussed such distributional patterns of Greek animals, which can be understood mainly in connection with climatical patterns of the region. The present account shall be devoted to such patterns, which cannot be explained by environmental conditions of today but may be understood in connection with earlier physiographic conditions. The only sound starting point for such considerations seem to be maps which indicate the actual occurrence of the organism considered. Organisms which lend themselves best to such a treatment are those which are unable to carry out migrations at all developmental stages and also are readily recognizable. The last named condition excludes organisms which belong to a group of very similar species or even populations which can hardly be distinguished from each other. Instead of marking the occurrence of a given species by dots on the map many authors have lumped together a number of species with similar distributional patterns thus constructing so called biotic provinces with sharp boundaries on the map. In reality these biotic provinces very rarely have a meaning except in a few remarkable cases. (e.g. the line drawn from Skopje along the river Axios/Vardar/ and then right through the middle part of Greece down to Navplion). In the eastern part of the Balkan-peninsula similar but not so important boundaries follow the foothills of the High Balkan and the Transsylvanian Alps from west to east.) Most other general distributional limits are in connection with the sea-coast and do often not agree with the coastline of today. (Thus Antikythera is clearly a part of Crete, Kythera belongs to the Peloponnesos, the gulf of Kornithos has nearly no biogeographical meaning at all, Levkas, Kephallenia and Zakynthos are but extensions of the cretaceous folds of the mainland north of them, Thasos belongs clearly to Thrakia, Mythilini, Chios, Samos and Kos to Asia minor). The loose sediments between the mountain ranges act in the similar way as marine channels. Mountains like the Taygetos with very conspicuous endemic species (e.g. the tenebrionid beetle *Erionura gigantea*) and the Chelmos (with the snail *Albinaria brommei* may be mentioned). Other endemic species are common to larger mountain ranges but always in accordance with the geographic arrangement of them. Finally such biogeographic elements as transdriatic and transaegaeic ones should be mentioned.

Z. Varga:

Composition and Evolution of the High-Mountain Fauna of the Balcan Peninsula /with Special Emphasis on Lepidoptera /

Abstract

The fauna of the high-mountains of the Balcan peninsula consists of two main eco-geographical groups: the arboreal /- connected with the chorological centres of the Arboreal biomes - / and the non-arboreal /i.e. oreal and oreotundral; connected with the centres of the primarily treeless biomes of orographic causality/ ones, both containing more or several faunal types /= Faunenkreise, sensu DE LATTIN et al./.

The relic-like arboreal species of insular, often disjunct distribution are localized usually in low or moderate altitudes, showing transadriatic /*Pseudoxestia apfelbecki*, *Thecophora fovea*, *Gortyna puengeleri*, *Erannia ankeraria* etc./ and/or Anatolian-W-asiatic faunal connections /*Trichiura verena*, *Dichonia pinkeri*, *Brachionycha syriaca*, *Boarmia viertlii* etc./. They are associated with East-Mediterranean xerophilous /not-evergreen/ scrub-forest formations.

The arboreal species of East-Palearctic chorological centres / - called often Siberian faunal type s.l. or Angara-fauna sensu UVAROV - /, having formed after retreat or by a regressive fluctuation of the area boundary peripheric isolates of diverse age, can be divided into several groups in historical-zoogeographical respect:

- Early Quaternary relic subspecies of Manchurian species /*Euphya corydalaria* ssp./;
- South- or SE-European "pseudo-oreal" vicariants of transpalearctic or holarctic species or super-species /*Aricia artaxerxes montensis*, *Palaeochrysophanus candens*, *Coenonympha rhodopensis* etc./;
- Isolated populations of Late Pleistocene cold steppe species /*Arctia flavia*, *Aeropedellus variegatus*, *Gomphocerus sibiricus* etc./;
- Transpalearctic or Holarctic boreal species connected with the Coniferous biome or with its treeless intrazonal formations /bogs or grassy formations/ which spread either in the late Pleistocene or early Holocene "taiga"-periods and isolated at a later time /ca. 50 "Macrolepidoptera"-species!//;

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- Not high-mountain, mainly South-Siberian and East-European species in which common South-Transdanubian - W-Balcanic peripheric subspecies were formed /*Leptidia morsei major*, *Euphydryas maturna idunides* etc./

The oréal fauna of the Balcan peninsula consists of two main eco-geographical types: the oréal fauna of the humid high-mountains called alpin s.l. and the oréal fauna of the arid-semiarid high-mountains, called xeromontan. Both are, of course faunal types and not zoogeographical provinces with artificially fixed borderlines. The alpine fauna contains the alpine /s.str./ and arctic-alpine species on one hand and the pontomediterranean oréal species on the other. The chorological centres of the first group are either in the Alps or/and in the high-mountains of Southern Siberia. The Balcan subspecies of this group are of peripheric character and present a conspicuous east-west areal and taxonomic division. The pontomediterranean oréal species survived the glaciations in the less glaciated parts of the SE Alps and in the Balcan high mountains, therefore their populations have a refugial character, often with a high grade of genetic polymorphism /e.g. *Erebia melas*/. The xeromontane faunal type including Holo- and/or Ponto-mediterranean and Continental /i.e. Central-asiatic/ xeromontane species, is richly represented only in the high mountains of the Southern part of the Balcan peninsula /Macedonia, Thessalia, the Pindos, Tymphrystos and Parnassos mts., Chelmos etc./, but usually poorly in the more humid and /-originally!-/ densely forested massives.

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The trans-adriatic distribution type in caddisflies (Insecta:Trichoptera)

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S U M M A R Y

Only few species of caddisflies live on both sides of the southern Adriatic Sea, without a land connection of their areas in the northern part of this region. The areas of these species are presented and discussed, and ecological remarks are given.

THE IMPORTANCE OF ZOOGEOGRAPHIC AND ECOLOGICAL
INVESTIGATIONS IN STUDYING SPECIATION IN CLOSELY
RELATED SPECIES AND THEIR PSEUDOGAMOUS ASSOCIATIONS.

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Abstract: "Pseudogamy,, has been considered until now a rare and paradoxical phenomenon in animals. Pseudogamous "species,, (unisexual-females) are in obligatory coexistence with one or more congeneric bisexual species in order to maintain reproduction.

Extensive investigations during the last ten years by the author and his colleagues from Wageningen - Holland on the biogeography and ecology of such complexes have revealed that pseudogamy is not that rare and probably is a crucial isolating mechanism acting within the sympatric area of "closely related species,,(whatever are "closely related species,,). Above phenomena are well pronounced within the area of Greece, where the border lines of the distribution of each species of some planthopper genera were found recently.

ECOLOGY AND BIOGEOGRAPHICAL IMPORTANCE OF IZMIR BAY

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Izmir Bay, which is situated at the western shores of Anatolia, can be studied in two regions: Inner Bay and Outer Bay, from the point of view of its topographical and hydrographical characteristics. The Inner Bay, which is connected to the Outer Bay via a narrow channel, consists of the region laying east of the "Yeni Kale" light-house. This region is very similar to a lagoon, characterized by weak currents and its vicinity is inhabited approximately by 1.5 million people.

The Outer Bay begins at the "Yeni Kale" light-house and continues up to the opening of the Izmir Bay to Aegean Sea. This region includes several islands and islets, is characterized by moderate to strong currents and wave movements but is inhabited by only a few thousand people.

Investigations on the ecological characteristics of Izmir Bay can be divided into two periods: those carried-out before 1965 and those conducted since 1965. In the period before 1965, there were only a few studies on the benthic forms of the Bay; but after 1965 a systematical investigation on biological and hydrographical characteristics of the Bay is initiated.

Izmir Bay has a special importance in the biogeography of the Mediterranean Sea, i.e. the differentiation of Northern and Southern Aegean regions occurs here.

In this communication, the general ecological and biogeographical characteristics of the Bay will be presented, together with a synthesis of the investigations conducted on Izmir Bay up to the present date.

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THE OCCURRENCE OF PELAGIA NOCTILUCA IN GREEK WATERS
DURING THE SUMMER OF 1983.

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ABSTRACT

A project concerning the biology and ecology of jelly fish in Greek waters has started during 1983 by the Institute of Oceanographic and Fisheries Research. Part of this project was to evaluate the occurrence of jelly fish as this has been reported by non biologically educated people. For this reason a special type of questionnaire form has been designed by IOKAE, which was distributed, through the Ministry of Merchantine Marine, to 67 port authorities around Greece. The aim of these forms was to collect data on jelly fish occurrence in Greek waters, in particular Pelagia noctiluca FORSKAL, and then try to correlate them, if possible, with environmental conditions. The results recieved with this questionnaize forms during the summer months of 1983 will be discused.

The Biogeography of Triclad (Platyhelminthes, Turbellaria) in the mediterranean region, with a special emphasis on species of the Dugesia gonocephala group.

by

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ABSTRACT

The paper presented here will give a new overview of the distribution of marine and freshwater triclad (Turbellaria, Platyhelminthes) throughout the mediterranean region, a topic which has never been dealt with in great detail.

The most recent summary is that given by Benazzi (1959) on the freshwater triclad of the Tyrrhenian Islands. Since then more data on the taxonomic status and distributions of mediterranean triclad have become available.

Further, the paper will deal particularly with the species belonging to the Dugesia (Dugesia) gonocephala group. Recently five more species belonging to this group have been described from the Greek peninsula and the Greek Islands. In total over 13 species of the group are now known from the Mediterranean area and undoubtedly more species remain to be discovered. The biogeography of the known species of this group will also be presented and discussed here.

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BRYOZOAIRES RÉCOLTÉS DU CAP RIO JUSQU' À L'EMBOUCHURE
DE LA RIVIÈRE D'EVINOS PENDANT L'ÉTÉ 1982.

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D. PANAGOPOULOS.

Étant donné que la faune Bryozoologique de la Grèce est très peu étudiée, on a récolté dans le golfe de Patras et plus précisément du cap Rio jusqu' à l'embouchure d' Evinos, des Bryozoaires sur différents substrats: cet endroit a été choisi car, à notre avis, il présente un intérêt écologique. Les prélèvements ont été limités dans les eaux côtières et, dans l' ensemble de 20 stations on a déterminé 61 espèce de bryozoaires (35 cheilostomes, 12 ctenostomes et 14 cyclostomes).

Excepté la taxonomie des espèces on donne une estimation quantitative de la fréquence de leur présence par station.

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RÉSUMÉ:

19 espèces de Bryozoaires provenant des côtes du Golfe de l'Eubée septentrionale sont décrites, appartenant aux ordres Cyclostomes et Chéilostomes.

Cyclostomes : Frondipora (Discopora) verrucosa LAMOUREUX, Proboscina (Alecto) aff. major (JOHNSTON).

Chéilostomes : 1) Anasca : Aplousina (Membranipora) filum (JULIEN), Calpensia (Eschara) impressa (MOLL), Conopeum commensale KIRK.-METZ., Copidozoum (Membranipora) tenuirostris (HINCKS), Coronellina (Mollia) fagei (GAUTIER), Hincksina (Membranipora) flustroides (HINCKS), Onychocella vibraculifera NEUVAN .

2) Ascophora : Celleporina (Costazia) caminata (WATERS), ChORIZOPORA (Flustra) brongniarti SAV. et AUD., Escharina (Eschara) vulgaris MOLL, Hippopodina (Lepralia) lata (BUSK), Hippothoa flagellum MANZONI, Microporella (Eschara) ciliata PALLAS, Reptadeonella (Lepralia) violacea (JOHNSTON), Schizobrachiella sanguinea NORMAN, Schizoporella longirostris HINCKS, Turbicellepora avicularis (HINCKS).

Des implications écologiques et biogéographiques accompagnent cette étude.

La plupart des espèces étudiées sont encroûtantes (Schizobrachiella, Hippothoa etc.) d'autres sont libres ou fixées sur le substrat, essentiellement littorales (vers 40m profondeur) et endémiques de la Méditerranée. Une comparaison avec la faune bryozoologique des régions côtières de l'Eubée méridionale ainsi que avec les faunes du voisinage de la partie de la Méditerranée orientale est esquissée.

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ZOOPLANKTON (METAZOA) OF THE KARAGÖL (YAMANLAR, İZMİR-TURKEY)

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Abstract

This research has been undertaken to determine the zooplanktonic fauna of Karagöl.

Karagöl is at a distance of 40 km. in the northern part of İzmir province. It is a mountain lake at an altitude of 806 m. with an area of 30090 m², maximum depth of 9 m. and average depth of 5.1 m.

Zooplankton samples were collected from four stations of differing characteristics at monthly intervals for a one year period with a zooplankton net of 55 µm. mesh size. The specimens were fixed in % 4 formaldehyde.

The zooplanktonic organisms of Karagöl belong mainly to the Rotifera, Copepoda and Cladocera groups. A total of 30 species have been identified in the lake, compiled of 18 species of rotifers; 6 species of copepods and 6 species of cladocerans.

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VERTICAL MIGRATION OF CRUSTACEAN PLANKTON IN KARAGÖL
(YAMANLAR, İZMİR-TURKEY)

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Abstract

This research was carried out with the purpose of assessing the vertical distribution and migration of crustacean zooplankton.

Zooplankton samples were collected from a fixed station of maximum depth (9 m.) according to the bathymetrical map.

Samples were taken with a self-closing modified Schindler-trap (volume 5 liters) at every meter from the surface to 5 meters of depth. The samples were filtered through a seive (mesh size 47 μm .) for concentrating. They were preserved in % 4 formaldehyde.

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THE MEROPLANKTON OF IZMIR BAY: THE MACRURA
REPTANTIA (Decopoda, Crustacea) LARVAE

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M.Reptantia larvae of Izmir Bay are investigated in a total of 44 different stations of which 8 are the main stations. The first 3 stations are situated in the inner bay and the remaining 5 are in the outer bay. Some hydrographical characteristics of these stations are also established.

As a result of our investigations, 9 species of M.Reptantia larvae are identified.

The smallest number of species and specimens are found in the station which is located in the most polluted and shallowest part of the bay. The most abundant species and specimens are found in the stations which are situated in the middle of the bay. Upogebia pusilla is the most common species and Scyllarus arctus is the rarest species among the M.Reptantia larvae. According to our present knowledge, Axius stirhynchus is reported for the first time from the Aegean Sea.

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and adjacent regions.

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THE LARVAL DEVELOPMENT OF "Penaeus kerathurus FORSKAL"
(Decapoda, Penaeidae) REARED IN LABORATORY CONDITIONS.

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ABSTRACT

Penaeus kerathurus is a commercially important species present İzmir Bay and Aegean sea. In this research the mature females are brought from the sea to the laboratory for spawning. The collected eggs are reared in laboratory conditions up to the post larval stage. Five naupliar, three protozoal, three mysis and first post larval stages are described. The diagrams are made by means of a camera lucida. The measurements are taken with a micrometer.

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MARINE ISOPOD FAUNA OF TURKEY

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A total of 61 species is distinguished during our carcinological investigations of Turkish shore waters; number of species belonging to each suborder is as follows; 29 Flabellifera, 3 Anthuridea, 8 Valfifera, 1 Tyloidea, 11 Asellota, 3 Oniscoidea, 5 Epicaridea, 1 Gnathidea.

Distribution of these species-of which 3 are brackish water and the remaining 58 are marine forms-in our seas is as follows: 14 species in the Black Sea, 15 species in the Sea of Marmara, 57 species in the Aegean Sea and 33 species in the Mediterranean Sea.

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ON THE OCCURENCE OF EVADNE NORDMANNI AND PODON POLYPHEMOIDES
IN THE COASTAL WATERS OF THE NORTH AEGEAN SEA

by

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Among the Cladocerans of the Mediterranean sea, Evadne nordmanni is considered to be a psychrophilic, neritic species and it has been found in coastal waters during spring months. On the other hand, Podon polyphemoides is a thermophilic species, abundant in waters rich in organic matter. The presence of both species has not been yet recorded in the North Aegean sea. Thirty-three planktonic samples were examined from the gulfs of Kavala and Alexandroupolis and the Mytilini sea area. The occurrence of these Cladocerans is discussed in relation with environmental factors.

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LA PRÉSENCE DU GENRE CLYPEASTER DANS LE DOMAINE HELLENIQUE DURANT LE
NÉOGENE

par

A. MARCOPOULOU - DIACANTONI *

RÉSUMÉ :

Le genre Clypeaster (Echinides Irréguliers, Gnathostomes) présente un très grand intérêt facial et biostratigraphique pour la Grèce durant le Néogène. La présence dans le domaine hellénique depuis le Néogène moyen jusqu'au Néogène supérieur est esquissée.

Plus de espèces appartenant au genre Clypeaster sont répandues tout le long de la Grèce occidentale (Iles Ioniennes), Crète, Cythères ainsi que dans la molasse du sillon mésohellénique. Il y a manque de Clypeaster des sédiments néogènes d'autres régions de la Grèce (Péloponnèse et îles de la mer Egée).

Des renseignements paléoécologiques (nature du sédiment, salinité, température, profondeur etc) ont été donnés par l'étude des différents espèces du Clypeaster.

L'histoire universelle biogéographique du Clypeaster durant le Cénozoïque se présente ainsi que les raisons de son extinction de la Méditerranée dès la fin du Pliocène.

Des comparaisons entre des espèces miocènes de la Méditerranée et celles des régions du domaine Indo-pacifique suggèrent d'une part que le genre Clypeaster conservait son caractère tropical, sans changement à sa distribution durant cette période et d'autre part la séparation à cause de la collision entre l'Afrique et Eurasie au Miocène supérieur a provoqué des conditions défavorables pour son existence au Pliocène.

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Parasites and fungi of *Scomber japonicus colias*
in the North Aegean Sea

by

F. Athanassopoulou - Raptopoulou, S. Haralabidis, E. Bourtzi - Hatzopoulou.

During an examination of 314 fish (*Scomber japonicus colias*) from the North Aegean Sea (May to December 1983) there were found:
1. The fungus *Ichthyophonus hoferi* in 109 (34.71%) fish (in the kidneys of 67, in the intestine of 26, in the liver of 13 and in the spleen of 3). 2. The coccidium *Eimeria clupearum* in the liver of 5 (1.59%) and the intestine of 1 (0.31%) fish. 3. The trematoda:
a) *Kuhnia scombri* in the gills of 46 (14.64%), b) *Aponurus laguncula* in the gills of 25 (7.96%), c) *Lecithocladium excisum* in the stomach of 26 (8.28%) and in the intestine of 18 (5.73%). d) *Lecithobotrys nanii* in the stomach of 12 (3.82%) and e) metacercaria of unidentified trematoda species in the caeca of 72 (22.92%) fish.

The nematode *Anisakis* spp. was found in the intestine and on the air-bladder of 61 (19.42%) fish.

Reviewing the results it is found out that 106 (33.75%) fish were not infected while in 113 (35.98%) fish one parasite was found and in other 92 (29.29%) fish more than 2 species of parasites were found. The fungus *I. hoferi*, the coccidium *E. clupearum* and the trematod metacercaria were discovered for the first time in the fish *S. japonicus colias*. Furthermore, for the first time in Greece the trematoda *L. nanii* and *A. laguncula* were found in this species of fish, the first in the stomach and the second in the gills.

THE ICHTHYOFAUNA OF KORINTHIAKOS, PATRAIKOS AND
IONIAN SEA

by

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SUMMARY

A total of 103 fish taxa, mostly demersal, have been identified from the Korinthiakos, Patraikos gulf and the Ionian Sea which is bounded by the islands of Ithaka, Kefallonia and Zakynthos during a fisheries research program of IOKAE, which took place from June to December 1983. None of these taxa are endemic. Substantial difference in the species frequency of occurrence was found between the three areas. These differences are attributed to various factors as depth, sediments, salinity, coastal and sea bed morphology, over fishing status, the presence of industrial units along the coast etc.

The Korinthiakos gulf is characterized by a great number of bathypelagic taxa, due to its depth, while Patraikos may be considered as a nursery grounds for a lot of taxa, especially off the coastline of Sterea Hellas. The absence of hake in the Korinthiakos gulf has been attributed to the destruction of the few biotopes where young hake live. The Ionian Sea is divided in two faunistic regions on the basis of the presence of certain fish family or isolated taxa, the bathymetria and the ecological conditions of the region.

TWO SPECIMENS OF THE GREEN SEA TURTLE
CHELONIA MYDAS (L.) CAPTURED IN GREECE

D. Margaritoulis, T. Arapis, E. Kornaraki, C. Mytilineou

ABSTRACT

Two specimens of the Green Sea Turtle Chelonia mydas (L.) are reported in Greek territorial waters. Their main biometric data and scalation patterns are given.

Both specimens are juveniles and their possible origin is discussed since it is not known whether this species breeds in Greece.

THE OCCURRENCE OF THE LEATHERBACK SEA
TURTLE DERMOCHELYS CORIACEA (L.) IN GREECE

D. Margaritoulis

ABSTRACT

Nine individuals of the Leatherback Sea Turtle were recorded in Greece during the period September 1981 - December 1983. Six of them were captured accidentally in fishing nets and three were stranded. The average curved carapace length of the measured individuals was 149 cm.

Spatial and temporal distribution of records show a concentration in the north-eastern coast of Greece in August 1983 which may be attributed to a group movement.

Since regular breeding of Dermochelys has not been documented in the Mediterranean it is suggested that a number of leatherbacks enter annually Mediterranean during their transoceanic migrations.

OBSERVATIONS ON THE BEHAVIOUR OF THE MONK SEAL, MONACHUS MONACHUS, IN THE N. SPORADES, GREECE.

by

V. Kouroutos, D. Papapanayotou, P. Kokkinia

Our group has been working on the monk seal since 1979. As a part of our study, we visited the island of Piperi in the N. Sporades during July 1983. Our aim was to survey the seal population of the island and to make systematic observations on their behaviour. Actually, two seals, a mother and a baby, were observed and photographed for 20 days.

In the present communication, observations on nursing and general behaviour are reported.

Included are other data, conclusions and suggestions for the study of the ecology of the monk seal aiming at the setting up of conservation measures.

DINOFLAGELLATE BLOOMS IN THE HARBOUR REGION OF IZMIR BAY

Tufan KORAY, Baha BÜYÜKİŞİK

ABSTRACT:At the end of April and beginning of May 1983 red tides caused by Gonyaulax tamarensis were observed in the harbour area of Izmir Bay. During this bloom horizontally selected six stations were sampled vertically at 0., 2.5', 5. , 10. , 15. m. intervals and the distribution of hydrographic properties, nutrients and species composition of other important plankton were described. Statistical analyses on the data suggested the existence of important correlations between some of them.

Les effets de la Pollution du Golfe d'Izmir
sur les Tintinnides (Ciliata)

par

N. ÜKTEM

Les tintinnides qui constituent les protistes pelagiques ont été trouvés dans la zone polluée et non polluée dans le Golfe d'Izmir.

D'après le travail Koray et Özel (1981), il y a 43 espèces dans la Sous-Ordre Tintinnoinea. Dans cette étude nous avons étudié chez une protiste Helicostomella subulata la morphologie pour voir si il y a des différences au sein d'une même espèce mais dans différentes zones. Il y a plusieurs facteurs écologiques telles que; salinité, température, oxygène, pH, N^-O_3-N , $PO_4^{3-}-P$ qui sont différents aussi.

Les mêmes études continueront chez différentes espèces, ultérieurement.

Nous avons mesuré les largeur, longueur, diamètre oral, secteur de spirale, le nombre des spirales et également les longuers de la corne aborale comparativement chez H.subulata.

D'après nos résultats les espèces ont une taille plus grande dans la zone non polluée par contre les largeur et diamètre oral sont identiques dans les deux zones.

Il y a aussi un important changement dans la longueur de la corne aborale et dans la région de spirale.

En plus le nombre de spirales dans la partie spiral lorica de la cellule est plus important. Cette différence qui vient de la pollution a été montrée dans le tableau. I.

	Longueur totale	Largeur	Diametre oral	Corne Aborale	Partie	Nomb.de Spirale
Zone polluée	131.25-218.75µ	18.75-37.50µ	25.00-37.50µ	31.25-88.75µ	12.50-43.75µ	1-12
Zone non polluée	156.25-225.00µ	18.75-37.50µ	25.00-37.50µ	43.75-93.75µ	12.50-81.25µ	2-16

D'autre part d'après la méthode " one-way ANOVA " il y a fort corrélation (99 %) entre tous les paramètres sauf les mesures des diamètre oraux.

Donc, le niveau de pollution actuel dans le Golfe d'Izmir a un effet négatif chez les protistes.

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ETUDE DE LA SENSIBILITE DE DEUX PEUPLEMENTS D' ARTEMIA
PAR RAPPORT AU DISPERSANT:FINASOL OSR₅ ET SON MELANGE
AVEC GAS-OIL.

J. CASTRITSI-CATHARIOS*, M. MORAITI-IOANNIDOU,
K. MAVRICAKIS

On a étudié à l' aide des tests de toxicité à court terme la sensibilité d' Artemia provenant de Missolonghi, et celle de Carolina. Entre les deux peuplements (parténogénétique et amphigonique) on a constaté une grande différence de sensibilité par rapport au dispersant et de même, au mélange Finasol OSR₅ Gas-Oil.

Pour nauplius, au même stade de développement, la différence de la longueur moyenne entre les deux est égale à 0,07. La longueur totale moyenne des adultes est > 10 mm; tandis que d' habitude, celle des couches différents est entre 5-11 mm. D' après cela on peut conclure avec une certaine certifitude que le peuplement de Missolonghi est polyploide et la différence de sensibilité est due à des raisons génétiques.

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COMPARISON BETWEEN THE EFFECTS OF CONCENTRATE
DISPERSANT COREXIT 9527 AND CONVENTIONAL
DISPERSANT 7664 AND THEIR COMBINATIONS
WITH MARINE DIESEL FUEL ON THE MEDIOLITTORAL
SPECIES MONODONTA TURBINATA BORN

Sevin ÖZELSEL*

Monodonta turbinata is quite an important species since its disappearance causes the whole ecosystem to change. Being a herbivore, the rocky substratum gets invaded by weeds and grass.

A series of experiments have been carried on in the winter period at 15°C, trying best to simulate the field conditions using dispersants Corexit 9527 (concentrate) Corexit 7664 (conventional), Marine Diesel Fuel and their combinations. The animals used have been collected from the Urla shore of the Izmir Bay (TURKEY). They weighed 8.70 g. on the average and had an average length of 2.5 cm. The experiments were carried on in large containers filled with sea water with glass plates placed transversally to permit the animals to emmerge/immerse freely, within the aerated sea water. The animals were exposed to toxicants for six hours after spraying with toxicants outside water, then put in sea water to allow them to re-attach trying best to simulate their living habits in nature.

It was found that concentrate dispersant Corexit 9527 enhanced the toxicity of MDF, whereas the conventional dispersant Corexit 7664 decreased the toxicity of MDF.

The results of the experiments have been expressed as tables and graphs.

It seems to be obvious that the interactions of PHC's and various dispersants should be experimented on before use in field to make the best choice in dispersant application when there is need.

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ETUDE DU TRANSFERT DES PHOSPHATES ET DES DETERGENTS ANIONIQUES AUTOUR DE L'ILE KARANTINA (Urla/Izmir-TURQUIE).

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RESUME:

Dans ce travail nous avons étudié les effets de la pollution chimique à la sortie de l'émissaire de l'Ile Karantina.

Au cours des analyses chimiques, salinité, température de l'air et de l'eau de mer, dosage des phosphates et des détergents anioniques ont été étudiés dans différentes stations d'Octobre 1982 à Septembre 1983.

Les résultats obtenus (72 prélèvements) ont montré que les concentrations des PO_4^{3-} P et dét.anioniques varient 0,0-2,36 µg.at/l pour PO_4^{3-} -P et 0,31-4,44ppm pour les dét.anioniques dans la zone littorale. Par contre les concentrations sont plus élevées: 0,0-22,91µg.at/l pour PO_4^{3-} -P et 0,15-12,09ppm pour les dét.anioniques a la sortie des égouts en fonction des stations.

Dans toutes les stations et quelles que soient les dates de prélèvement nous avons remarqué une forte corrélation (r) entre la température de l'eau de mer et celle de l'air. Celle-ci de 0,86 à 0,95.

De plus dans certaines stations des corrélations significatives entre les détergents et les phosphates ont été relevées.

INVESTIGATIONS ON TOXIC EFFECTS OF CATIONIC DETERGENS
ON SOME MARINE INVERTEBRATES

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The aim of the present investigation is to establish the toxic effects of a cationic detergent (cetiltrimetilamonium bromid) on Sphaeroma serratum, Mytilus galloprovincialis and Paracentrotus lividus; which inhabit different biotopes and which have different sensitivities to pollution.

Experiments of 96-hour duration are carried-out by means of continuous-flow system in constant temperature room. Temperature adjustment for pollution indicating species was $17 \pm 1^{\circ}\text{C}$, and for P.lividus, $15 \pm 1^{\circ}\text{C}$.

The experimental data obtained after 48 and 96 hour periods are computed statistically according to the Bliss (1935) method. By this method, deviation types and variation limits of the lethal concentrations ($LC_{10}, LC_{50}, LC_{90}$) are established. To obtain some idea on the homogeneity of the tried populations, chi-square testing is utilized.

A study of the lethal concentrations has shown that, against the used surfactant, P.lividus is the most sensitive, while S.serratum and M.galloprovincialis are relatively more resistant.

HEAVY METALS IN THE FLESH OF THE M.BARBATUS AND D.ANNULARIS
FROM POLLUTED AND UNPOLLUTED ZONE FROM IN THE BAY OF IZMIR.

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SUMMARY:

This study has been done with intention of investigating of influence of heavy metal pollution on two fishes.

Some heavy metals(Fe,Zn,Cu,Cd,Hg) were determined during March to August 1983 by AAS analysis in the flesh of the edible fishes Mullus barbatus and Diplodus annularis caught from polluted and unpolluted zone of the Bay.

According to our data,heavy metal level in M.barbatus vary between 2,20-16,60µg/g for Fe, 1,96-7,70µg/g for Zn, 0,20-1,00µg/g for Cu, 0,0-0,13µg/g for Cd, 0,04-0,09µg/g for Hg in wet weight. In D.annularis however,levels have been found to change between 3,90-21,70µg/g for Fe, 3,70-11,84µg/g for Zn, 0,02-2,10µg/g for Cu, 0,03-0,30µg/g for Cd, 0,01-0,44µg/g for Hg in wet weight.

Also standart statistical analyses has been done for to determine significant results between groups.

According to present results has been observed that heavy metal levels are slightly higher in D.annularis than M.barbatus.

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Title: THE FRESHWATER AMPHIPODA (CRUSTACEA, MALACOSTRACA)
OF GREECE

ABSTRACT.

The freshwater fauna of Amphipoda from Greece was analysed and all known species of this group are mentioned with their known distribution. The relationship between fauna of Amphipoda of Greece with these of Yugoslavia and Albania ~~xxx~~ is given . The taxonomic problems of fauna of Amphipoda in Greece is presented .

Gordan Karaman

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2 1
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PROBLEM OF INTRODUCTION OF FISH SPECIES IN YUGOSLAV WATERS

Abstract

First introductions of new species of fishes in open waters of Yugoslavia have been done at the beginning of XX-th century. Those were the fishes from the family Salmonidae: Salmo gairdneri, Salvelinus fontinalis, Salvelinus alpinus.

At the middle fifties, introduction of endemic species Salmethymus obtusirostris oxyrhynchus from Adriatic and Black Sea basin in our country, have been done. At that time, settling of open waters with some ciprinidic species (Cyprinus carpio) have been carried out.

Introduction has been carried out more often during the last few decades. The number of the species which appear in our fresh waters is so significant that starts to worry us. For example, 12 new fish species have been found in Skadar Lake during the last 10 years. One of them is new as well for Ichthyofauna of Yugoslavia - Pseudorasbora parva.

In this paper we will present the review of all introductions done until now, and we will point out their possible influences upon our autohton ichthyofauna.

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ACCLIMATISATION OF SALMO GAIRDNERI R I C H A R D S O N, 1836
IN MONTENEGRIAN FRESHWATERS

A B S T R A C T

Introduction of species Salmo gairdneri in open waters of Yugoslavia was noted at the beginning of XX century. First introductions of this species in open waters of Montenegro where done at middle fifties. The best acclimatization of this fish is reached in ~~ixx~~ Lake Biogradsko, where this fish species is naturally spawned.

In this paper we will present the justification of introduction of Salmo gairdneri in Monteneginian freshwaters as well as the acclimatization of this fish in these waters.

LES POPULATIONS DE TRUÏTE DE LA REGION THRACIEN ET LEUR
RELATIONS ZOOGEOGRAPHIQUES

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R E S U M E

Ce jour-ci, toutes les Truites habituellement vivant dans les eaux intérieurs de la Turquie appartiennent à l'espèce de Salmo trutta L.

Mais, il n'y a que 4 espèces de cette truite (Salmo trutta macrostigma, Salmo trutta labrax, Salmo trutta abanticus, Salmo trutta caspius) dans les différents localités en Turquie.

Dans la région Thracien, on trouve seulement Salmo trutta macrostigma (DUMERIL 1858), celle-ci vive aussi dans les régions sud, ouest et Nord-ouest de l'Anatolie.

On pense que cette sous-espèce à l'origine de l'ouest et introduit dans les eaux intérieurs des pays méditerranéennes, puis distribuées en Europe.

Car, cette idée se renforce par la rencontre de cette sous-espèce dans la région Thracien et certain pays Balcanique (La Grèce et la Bulgarie).

A cause de leur pêche excessif, ces poissons sont devenus très rares dans les eaux citées.

Cette cause a poussé les dirigeants de prévenir leur pêche et prendre en protection les eaux intéressées.

Taxonomical situation and comparison of Shads
(Pisces, Clupeidae) from the Lakes Volvi and Vistonis (Greece)

By

A.I. SINIS and P.S. ECONOMIDIS

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Two forms of Shads have been found in the Greek lake waters: Alosa (Caspialosa) macedonica (VINC., 1921) at Volvi and another form at Vistonis differing from the above mentioned mainly at the numbers of branchiospines (Volvi: II2-II6, Vistonis: 77-87). In comparison to other Caspialosa from the Caspia and the Black Sea, the form of Vistonis is closely similar to the subspecies Alosa (Caspialosa) caspia nordmanni ANTIPA, 1905 of the W.coast of the Black Sea. However, the Vistonis form differs from nordmanni in the body size (Vistonis: max. length about 27 cm; nordmanni: about 18 cm), the smaller head and eye and the higher body, as well.

Concerning the biology of the Volvi form, it has been found that it is holobiotic, reproducing in July-August and reaching breeding maturity after the completion of the first year of life, in length II-I4 cm. The biology of the Vistonis form is under study. However, it also appears to be holobiotic and to breed later than the Volvi form.

A natural hybrid of Leuciscus cephalus macedonicus X Chalcalburnus chalcoides macedonicus (Pisces, Cyprinidae) from the Lake Volvi (Macedonia, Greece)

by

P. S. ECONOMIDIS and A. I. SINIS

(University of Thessaloniki, Department of Zoology)

A natural hybrid was found -for the first time in Greece- at the lake Volvi. It resulted from crossing of the endemic sub-species Leuciscus cephalus macedonicus KAR., 1955 with Chalcalburnus chalcoides macedonicus STEPH., 1971. The hybrid is externally similar to Leuciscus cephalus but it differs in having a wider and higher body and anal fin with straight instead of curved margin. Detailed character analysis, based on examination of 68 specimens (63 females and 5 males) proved that they are at a medium position between the characters of the parental forms. This is especially expressed at the soft rays of the anal fin (A), branchiospins (Br) and scales of the lateral line (L. l.):

	A	Br	L. l.
<u>Chalcalburnus chalcoides</u>	14-16	27-31	57-68
Hybrid	10-11	15-17	47-56
<u>Leuciscus cephalus</u>	8	8-10	44-47

This hybridization is justified as both parental forms are stream breeders. Consequently, they frequently coexist at the breeding sites during reproduction, taking place mainly in May. Possible areas of hybrid formation are considered to be the streams Pasarouda and Melissourgos (flowing in Volvi from south), where there is a remarkable population of Leuciscus cephalus macedonicus. These streams also host the individuals of Chalcalburnus chalcoides macedonicus, coming for reproduction from the lake Volvi. In the case this process is simultaneous, then a good number of hybrid specimens occurs in the lake, which are fished together with other commercial species. It seems that this hybrid retains the rheophile character of Leuciscus cephalus because it frequents the streams leading to the lake.

On the squalius species complex of western
Balcan areas (Pisces, Cyprinidae)

by Pier Giorgio Bianco

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Abstract. - The examination of several samples of species of the squalius complex collected in Italy, Dalmatia and western (w.) Greece, allow to recognize two species of this complex in w. Balcans: Leuciscus cephalus (L.), is the commonest one reported for Dalmatia, Albania and w. Greece (Peloponnese included); the other, L. illyricus H. & K., surely lives in Krka and Cetina drainages of Dalmatia. According to the literature, several subspecies were described for those species, in w. Balcans. With regard to L. cephalus, for number of branched anal fin rays, two distinct subspecies can be recognized: L.c. cabeda R., characterized by the usual presence of 9 rays in the anal, and L.c. cephalus with 8. According to this feature, cabeda is the most common taxon in rivers flowing on Adriatic and Ionian Seas, whereas cephalus lives at least in Jannina, Ochride and Prespa lakes. A third species, L. svallize H. & K., was described for Dalmatia and reported also for Albania. The status of this taxon is still not clear. Some authors place this species in the leuciscus s.str. complex, but according to the original description it may be placed in the squalius complex. Ichthyogeographically, w. Balcans are regarded as a distinct "illyric province" for the presence of several endemic species of freshwater fishes, but its boundaries are still not clear. A tentative delimitation of this province, on the basis of new and known from the literature datas, is discussed.

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THE GENUS TETRANYCHUS DUFOUR, 1832, IN GREECE
(ACARI : TETRANYCHIDAE)

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Mites of genus Tetranychus feeds on many plants grown in the field or in greenhouses in Greece. So far, the following eight species were known in Greece: T. cinnabarinus Boisduval, 1867, T. frater Wainstein, 1960, T. hydrangeae Pritchard and Baker, 1955, T. tumidellus Pritchard and Baker, 1955, T. turkestanii Ugarov and Nikolski, 1937, T. urticae Koch, 1758, T. viennensis Zacher, 1920, T. yusti Mc Gregor, 1955.

Another two species are recorded here for first time in Greece, that is: T. ludeni Zacher, 1913 and T. tumidus Banks, 1900.

Some information concerning the geographical distribution, their economic importance and plant hosts of Tetranychus species in Greece are also given.

THE GENUS BRYOBIA KOCH, 1836, IN GREECE
(ACARI : BRYOBIIDAE)

E.N.HATZINIKOLIS

Aliartos Experimental Station

Ministry of Agriculture

The knowledge on the Greek mites of genus Bryobia is limited only to six following species: B.cristata Dujès, 1834, B.goriensis Reck, 1947, B.cissophila Eyndhoven, 1955, B.praetiosa Koch, 1836, B.rubrioculus (Scheuten, 1857), B.rubrioculus f. prunicola Mathys, 1957.

Recent studies revealed the presence of another six species, as follows: B.borealis Oudemans, 1930, B.graminum Schrank, 1781, B.longisetis Reck, 1947, B.sarothamni Greijskes, 1938, B.tiliae (Oudemans, 1929), B.ulmophila Reck, 1947.

Some information concerning the distribution, economic importance and plant hosts of the above twelve Bryobia species are also given.

Distribution area of Beckiella zabolotzk^wiy
and the causes of its disappearance.

by

Mirjana Janković

The genus Beckiella exhibits Holarctic distribution, the species Beckiella zabolotzk^wiy being so far recorded only in the Palearctic. It is mainly restricted to Eastern Europe where it occurs on sand deposits of large rivers. For the first time it was recorded in the Oka /USSR/ as abundant Chironomid of the psamm^Aoreophile communities in the sites with water speed from 0.3 to 0.4 m/sec.

In Yugoslavia Beckiella zabolotzk^wiy also makes a constituent part of the Chironomid fauna of large rivers /the Danube, Velika Morava, Sava and Južna Morava rivers/. It most often occurs in the medial, in the habitats on sand substrate and with major water speed. It is most remarkable in the Danubian fauna and represents there the most frequent and subdominant Chironomid, but in the rest of rivers it is becoming increasingly scarcer and this could be ascribed to the progressive deterioration of the life conditions.

On the basis of our investigations and the distribution of Beckiella zabolotzk^wiy in Europa, it could be concluded that the actual area of distribution of the species is relatively small in comparison with its potential range. This is presumably due to the anthropogenic factors, first of all to the municipal and mines waste waters that prevent survival of the oligotrophic species. With regard to the constant pollution of the river systems it is reasonable to expect disappearance of the species Beckiella zabolotzk^wiy regardless its actual successful avoiding of the unfavourable life conditions by withdrawing into the principal river stream.

POSSIBILITIES FOR JOINT WORK OF THE
MYRMECOLOGISTS OF THE BALKAN COUNTRIES

Georgi Vesselinoff, Bulgaria

My research in the species of ants building cone-shaped nests up to 1.5 m high encompasses some 21,536 nests on the 110,928 square metres of Bulgarian territory. The greatest part of them belong to the Formica species (F.Lugubris, F.Pretensis, F.rufa), a smaller part to the genus Coptoformica (C.exsecta). According to the number of ant nests my country may be divided into 4 regions:

1. A richly populated region which includes the Western and Central Rhodope Mountains, having about 29 nests per 100 hectares, populated mainly by Formica lugubris and the smaller forest ant Coptoformica exsecta.

2. A moderately well populated region including the Rila and Pirin Mountains with 5 nests per 100 hectares of the same two species.

3. A poorly populated region - the Balkan Mountains and the Sredna Gora Mountains - with 1 nest per 100 hectares, belonging to Formica Rufa and Formica pratensis.

4. A very poorly populated region consisting of the Danubian Plain, the eastern reaches of the Balkan Mountains and the Strandja Range, with 0.6 nests per 100 hectares, belonging predominantly to Formica rufa and Formica Pratensis. Coptoformica exsecta is lacking here.

During the last 50 years the attention of myrmecologists has been centred on the abovementioned species owing to the fact that in forests well stocked with their nests insects harmful to the trees cannot multiply to a degree dangerous to their growth. Therefore the aim of myrmecologists has been

to increase the number of their nests in poorly populated regions as a means in the biological struggle against harmful insects.

Professor Pavan and his collaborators transplanted ants of the *Formica lugubris* genus (which is also found in the Balkan Peninsula) from the Alpine forests to the Appenines. The results of that successful undertaking were reported at the Congress which took place from Aug. 28 to Sept. 2 at Varese, Italy. The same genus of ants, which were not found in Canada, were transplanted there about 20 years ago and are developing normally, as reported by the initiator of that undertaking Professor Fjengen. Excellent results have also been achieved by Professor Göbwald in the FRG with *Formica polyctena* (not found in Bulgaria) - up till now 35,000 new nests have been founded in evergreen and oak forests.

Successful transplantations of *Formica lugubris* have been achieved in Bulgarian evergreen and oak forests in the Sredna Gora Mountains not far from the town of Koprivshtitsa.

I believe that the myrmecologists of the Balkan countries can co-operate with one another in studying, multiplying and transplanting forest ants with a view to the biological struggle, as suggested during the discussion at the Meeting of the Work Group *Formica Rufa* (Varena, Como, Aug.28-Sept. 2, 1978). This co-operation may take the form of:

1. Research in the ant species in neighbouring countries, of interest for the common aim.

2. Establishing the number of ant nests of the species most effective in the biological struggle, viz. *Formica lugubris* and to some extent *Formica fufa*, in each region and supplying them with protective wire net covers.

3. Mastering the techniques of artificial multiplication

of *Formica lugubris*.

4. Attempts to transplant *Formica polyctena* which is extremely effective in Central Europe. The chances of success are good as the ecological conditions in Aegean Thrace - altitude above sea level, air humidity - are very similar to those in Central Europe where the species is indigent and has been artificially multiplied as a weapon in the biological struggle against harmful insects in evergreen and oak forests.

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Données faunistiques et biogéographiques préliminaires sur les
Meloidae (Coleoptera) de la Grèce.

Dans le cadre d'une étude faunistique et biogéographique sur les Méloïdes de la Méditerranée orientale, on analyse le peuplement de la Grèce et des îles de la Mer Egée. Les données bibliographiques et des collections examinées nous indiquent 83 espèces dans l'ensemble, 78 dans la Grèce continentale et péninsulaire et 39 dans les îles égéennes.

L'analyse biogéographique, fondée sur l'examen des catégories corollologiques, souligne une forte ressemblance des peuplements de la Grèce et des îles égéennes. La majorité des espèces sont "méditerranéennes" (presque 54%) et, entre elles, la plupart sont "nord-méditerranéennes-orientales" (33% et 31% respectivement), surtout "transégéennes-anatoliques" et "balcaniques-anatoliques-caucasiennes"; moins nombreuses sont les espèces paléarctiques à vaste distribution euroasiatique (presque 33%) et inférieures sont les espèces "européennes" (presque 13% et 10% respectivement). Entre les "méditerranéennes" et les "euroasiatiques" il y a toujours une prédominance des espèces steppiques, qui vivent aussi en Anatolie et dans l'Asie centrale. Relativement réduit est le nombre des "endémismes" (7 continentales, 2 de Crète et 1 de l'île Syros dans le Cyclades), quelque fois avec des affinités systématiques incertaines (par exemple Cochliophorus reitteri, genre monotypique presque inconnu).

Le peuplement des Méloïdes de Grèce et des îles égéennes est aussi comparé avec celui des autres pays de la Méditerranée centrale et orientale: les plus grandes affinités sont avec la Bulgarie et la Yougoslavie méridionale et ensuite avec la Crimée et l'Italie. Les données faunistiques, très insuffisantes, n'ont pas permis une comparaison entre les peuplements des régions naturelles déterminées en Grèce et dans les îles et on peut reconnaître uniquement une affinité (balcanique) dans la Grèce continentale. Entre les îles, Crète a des caractères évidents d'isolement, mieux que les Cyclades, tandis que les Sporades méridionales ont des affinités faunistiques très marquées avec l'Anatolie. Le peuplement des îles de la Mer Egée est finalement comparé avec celui des autres grandes îles de la Méditerranée (Baléares, Sardaigne, Sicile et Chypre).

Présence en Grèce continentale de Dytiscus dimidiatus Bergstr. var. mutinensis Fiori : statut taxonomique et distribution géographique
 par Ph. RICHOUX* et Cl. DUFAY**

Résumé.

Dytiscus dimidiatus var. mutinensis Fiori est signalé pour la première fois en Grèce continentale, où il a été capturé récemment par l'un des auteurs en deux localités différentes (Jannina et centre du Péloponnèse). Celles-ci agrandissent vers le sud-est sa répartition géographique connue en Europe. La comparaison des spécimens pris dans le sud-est de la France, en Italie et en Grèce permet de discuter son statut taxonomique, et de tracer les cartes de répartition de ces deux taxa.

The occurrence of Dytiscus dimidiatus Bergstr. var. mutinensis Fiori in continental Greece : its taxonomic statute and geographical distribution

Abstract.

Dytiscus dimidiatus var. mutinensis Fiori is recorded from continental Greece for the first time in two localities (Jannina and centre of Peloponnese). These records enlarge towards the east its european distribution area. The comparison with specimens from France and Italy makes it possible to discuss its taxonomic statute and to give precisions about the distribution of the both taxa.

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ECOSYSTEM OF NESTOS DELTA: NATURAL ZONATION AND CORRESPONDING ANIMAL SOCIETIES, NATURE PROTECTION AND HUMAN ACTIVITIES IN CONTRADICTION

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Within the scope of Master's thesis and later dissertation the ecosystem of Nestos-Delta with the lagoons of Keramoti, a large wetland in the north-east of Greece was regarded under various ecological aspects.

The whole area was divided by means of a rough plant-sociological mapping into:

- a coastal strip comprising dunes, lagoons and halophytes, reeds and pastures land,
- the course of a river with sandbanks, islands and accompanying riparian woods,
- and cultivated land.

In 1981 examination research was done on different types of waters in the natural parts of the ecosystem concentrating on abiotic and biotic parameters as well as a conclusive comparison of living conditions, feeding possibilities and variety of species in the waters.

Subsequently the data of the qualitative and partially quantitative vertebrate-counting was discussed in detail, and the positions of the systematic groups in the ecosystem were pointed out accordingly. Certain taxa, especially those useful to act as bio-indicators were applied in the evaluation of the particular living space, such as variety, scarcity (representation of "Red Data Books") and naturalness.

Then the whole area was compared to the European and Greek equivalents with regard to their natural equipment and the extent of being threatened and were then comprehensively commented on. It was possible to ascertain, that the ecosystem lagoon-river-delta meets with all requirements for a "wetland of international importance" according to the "RAMSAR - CONVENTION".

Finally the individual landscape-changing factors were allocated according to those groups causing them. In order to avoid not answering the arisen conflicts between the technical-confrontative, abusing use of nature and the long-term conserving-use, proposals for their at least partial solution were made: by means of three preference-zones the differing interests ought to be locally separated - this was demonstrated too on three maps with respective colouring.

Since 1982 research goes on with two central subjects:

- Minimum areas and habitat preferences of birds in a wetland with the aim of ecological valuation of landscape,
- changing of a natural ecosystem in a few years, caused by human activities.

ZUSAMMENFASSUNG

Die Herpetofauna von türkischen Inseln

İbrahim Baran

Siet 1978 wurde aus dem 129 türkischen Inseln, die von den Schwarzes Meer bis Bodrum liegen, erstmals gesammelten insgesamt 2591 Exemplare herpetologische Material taxonomisch untersucht und darin sind 24 verschiedene Arten festgestellt werden, von denen 2 Frösche-, 2 Schildkröte-, 11 Eidechse-, und 9 Schlangenarten sind. Die alle Arten zeigen keine bemerkenswerte Unterschied von den türkischen Festlandarten. Aber wir haben drei neue Eidechsenunterarten von diesen Inseln beschrieben, eine von denen *Podarcis muralis kefkenensis* ist und sie lebt nur auf den Insel Kefken im Schwarzes Meer. Die zweite Unterart heisst *Cyrtodactylus kotschyi karabagi* und sie ist nur von kleinen Insel (Fener Adası) im Marmarameer bekannt. Dritte, ihre Name *C. k. beutleri* ist, ist sich von Ayvalık südwärts bis südlich von İzmir in 12 kleinen Inseln verbreitet. In der Umgebung von Bodrum haben wir auf den 4 kleinen Inseln eine andere Unterart festgestellt. Die ist von BARAN-GRUBER (1982) aus der Süd-Anatolien unter der Namen *C. k. ciliciensis* beschrieben worden. Unsere neue Bodrum Material zeigen keine grosse Unterschied von *ciliciensis*.

Interessanter Weise haben wir aus einigen Inseln, die südlich von İzmir liegen, gefleckte *Eirenis modestus* Exemplare gesammelt. Solche gefleckte *Eirenis*-Form aus Insel Khios ist von BOETTGER (1876) *E. m. semimaculata* benannt worden. Später habe ich sie in meiner Arbeit (1976) mit der Nominatrasse identisch angenommen, weil ich während meine türkische Schlangen Untersuchung auch von Südwest-Anatolien und Cypern wenig oder mehr gefleckte *E. modestus* Exemplare gefunden habe. Aber auf den Inseln leben ganz gefleckte Formen im selben Biotop zusammen mit der ungefleckten, und bis jetzt habe ich keine Übergangsform gefunden. Dashedalb muss man darüber noch mal ausführlich arbeiten.

S U M M A R Y

A morphological and serological study on the populations of the species Bombina bombina living in Thrace and Northwest Anatolia

Necla ÖZETİ, İrfan YILMAZ, Hüseyin ARIKAN

This investigation presents a new distributional map of B. bombina collected from Thrace. B. variegata was not found in this region inspite of its report in the literature. The former species; on the other hand; is found in Northwest Anatolia too. It was thus thought necessary to see weather the bombina's of the later area differ from those of Thrace taxonomically or not, because of their complete isolation by the strait of Bosphorous. The populations of these two different areas were thus investigated with this aim and it was concluded that they differ both morphologically as well as serologically. In view of this it was thought feasible to consider the Northwest Anatolian bombina's as a separate taxon. The populations from Thrace have been for the time being accepted as nominate race B. b. b., whereas those Northwest Anatolia thought to be as a subspecies and have been thus named as B. b. arifiyensis. As such the monotypic status of the species; as known up to now; has been changed to polytypic status.

Abstract

Proteinelectrophoretic investigations in *Podarcis peloponnesiaca* and *Podarcis erhardii* (Lacertidae, Sauria).

MAYER W.

For this study 16 proteins produced by 16 distinct genloci were investigated electrophoretically in a total of 655 specimens of the peloponnesiaca - erhardii complex. Only one of these proteins, namely the phosphoglucomutase 2 (PGM 2) varies essentially in *P. peloponnesiaca*. Three electromorphs of this protein could be distinguished. Their geographical distribution agrees very well with the distribution of the subspecies defined by BUCHHOLZ 1960. Therefore this protein is apt as an allozymic marker for the determination of the subspecies of *Podarcis peloponnesiaca*.

The close relationship of *P. peloponnesiaca* and *P. erhardii* was also found by BUCHHOLZ. There is a high similarity between these two species as well in morphological characters as in electrophoretic results. Only one constant difference could be found, namely the electrophoretic mobility of the creatine phosphokinase (CPK). In addition there are albumin-immunological results, which prove the very close relationship of both taxa. These results make one think of combining these two taxa to one species.

SOME NOTES ON THE COLOUR AND PATTERN VARIATION OF THE
GREEK SNAKE FAUNA IN RELATION TO GEOGRAPHIC DISTRIBUTION.

ACHILLES DIMITROPOULOS

SUMMARY

THE AUTHOR AND HIS COLLEAGUES HAVE VISITED AREAS OF HERPE-
TOLOGICAL INTEREST FOR THREE YEARS, IN ORDER TO COLLECT MATERIAL
FOR THE PREPARATION OF A POPULAR FIELD GUIDE TO THE REPTILES OF
GREECE. THEY ALSO HAVE WORKED ON THE MOST IMPORTANT SCIENTIFIC OR
PRIVATE COLLECTIONS IN GREECE AND ITALY. AFTER A TOTAL NUMBER OF
OVER ONE THOUSAND SPECIMENS WAS EXAMINED, THE FOLLOWING CONCLUSIONS
RESULT:

THE MOST VARIABLE SPECIES SEEM TO BE MALPOLON MONSPESSULANUS,
NATRIX TESSELLATA, COLUBER JUGULARIS, NATRIX NATRIX AND TELESCOPIUS
FALLAX. MALPOLON MONSPESSULANUS AND COLUBER JUGULARIS CASPIUS SHOW
DISTINCT COLOUR PHASES WHICH ARE EITHER WIDELY DISTRIBUTED OR
OCCUR LOCALLY. MELANISTIC INDIVIDUALS ARE RELATIVELY COMMON, ESPECI-
ALLY IN MOUNTAIN VIPERS; ALSO IN COLUBER GEMONENSIS OF GYAROS, CYCLA-
DES, AND COLUBER NAJADUM OF KALYMNOS, DODECANESE. ALBINOS ARE RARE.
RED FORMS OCCUR IN VIPERA LEBETINA SCHWEIZERI, MALPOLON MONSPESSULA-
NUS AND COLUBER JUGULARIS CASPIUS. IN VIPERA LEBETINA SCHWEIZERI, RED
INDIVIDUALS WERE OBSERVED ONLY IN MILOS, IN CERTAIN AREAS WITH KAO-
LINE SUBSTRATUM.

MANY SPECIES OCCUR IN STRIPED AND BLOTCHED FORMS WHICH ARE
FAIRLY DISTINCT-WITH OUT "INTERMEDIATE" INDIVIDUALS-AND SOMETIMES
OVERLAP GEOGRAPHICALLY. SUCH SPECIES ARE ELAPHE SITULA IN ZAKYNTHOS
AND CORFU, WHERE BOTH STRIPED AND BLOTCHED INDIVIDUALS OCCUR, WHILE
STRIPED FORM WAS GENERALLY UNCOMMON, ALSO ELAPHE QUATUORLINEATA AND
NATRIX NATRIX. LIGHT PHASES OF THE TYPICAL COLORATION ARE COMMON IN
SOME SPECIES, PARTICULARLY TELESCOPIUS FALLAX, ALSO ELAPHE QUATUORLI-
NEATA AND COLUBER GEMONENSIS. THESE LIGHT PHASES ARE STRICTLY LOCAL .-

Evaluation of the ornithological importance of the western coastal region of the Evros delta with special reference to the ecology of Charadriiformes.

by

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Important bird activity was observed at the western coastal region of the Evros delta. A total of 110 bird species and 9 more genus were identified (36 threatened).

The region was for special importance for Charadriiformes. Good numbers of 9 Charadrii species (Haematopus ostralegus, Pluvialis squatarola, Arenaria interpres, Calidris alpina, Calidris alba, Philomachus pugnax, Tringa glareola, Limosa limosa, Numenius arquata) were observed during migration and/or wintering. The winter feeding activity of five of these species (H. ostralegus, P. squatarola, Calidris spp., N. arquata), was almost continuous during daylight periods and did not appear to be affected by the weak tide action of the region. In winter, the oystercatchers fed mainly on annelid worms and bivalves which were the only available preys at the feeding grounds.

Large numgers of Lari were observed at the region. Five gull species (Larus argentatus, L. ridibundus, L. minutus, L. melanocephalus, and L. genei) and one tern species (Sterna sadvicensis) were observed, using the area for feeding and roosting, mainly in winter and during migration.

The higher activity of Charadriiformes was observed at the sand reef sites of the mediolittoral zone and, at least this zone and also the supralittoral one, must be included in the nature reserve already proposed.