

MUZEUM I INSTYTUT ZOOLOGII
POLSKIEJ AKADEMII NAUK

FRAGMENTA FAUNISTICA

Fragm. faun.	Warszawa, 14.07.1997	40	1	1-13
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Irmina Pilipiuk

Potworm communities (*Enchytraeidae*, *Oligochaeta*) in different types of forest in Puszca Kampinoska.

Abstract. 24 potworm species have been found in the forest habitats studied in Puszca Kampinoska. Species diversity of *Enchytraeidae* decreases with deteriorating trophic and moisture conditions. Potworm communities in alder swamps and mixed forests have a characteristic species composition and structure. Linden-oak-hornbeam forests with a variety of habitats present accommodate a number of distinct potworm communities.

Key words: Enchytraeidae, alder swamp, linden-oak-hornbeam forest, mixed coniferous forest. Kampinos National Park

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Maria STERZYŃSKA*, Natalia KUZNETSOVA**

Comparative analysis of dominant species in springtail communities (*Hexapoda: Collembola*) of urban greens in Moscow and Warsaw

Abstract: Authors compared collembolan communities dwelling urboecosystems of Eastern and Central Europe using urban greens of Moscow and Warsaw as an example. Two types of urban biotopes (parks and street lawns) were analysed in comparison to non-urban forests and meadows. The regional peculiarities of springtail communities in the same type of urboecosystems were investigated. It was revealed that communities of soil-dwelling *Collembola* in parks of different cities are more similar than those of street lawns.

Key words: *Collembola*, urban ares, communities

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Ewa HAŁKA-WOJCIECHOWICZ

Communities of *Heteroptera* in flood-plain forests of selected sites in Puszcza Białowieska and the Mazowsze Lowland

Abstract: 82 species of Heteroptera belonging to 13 families have been found in flood-plain forests Alno-Padion in 4 sites, including 35 species in the ground cover and 47 in the canopy layer (39 on alder, 15 on ash). Species composition of the *Heteroptera* communities under study has been investigated and an ecological analysis carried out. Heteroptera communities from the various areas and sites studied have been shown to differ both in species composition and in the structure of dominance. A group of species characteristic of the ash-alder flood-plain forests under study has been identified.

Key words: *Heteroptera*, flood-plain forests *Alno-Padion*

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Fragm. faun.	Warszawa, 14.07.1997	40	4	47-51
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Alexander RADCHENKO*, Wojciech CZECHOWSKI**

***Doronomyrmex kutteri* (BUSCHINGER, 1965) {Hymenoptera, Formicidae}**
- a representative of a genus new to Poland

Abstract: *Doronomyrmex kutteri* (BUSCHINGER) is first recorded from Poland. Some notes on distribution and biology of the socially parasitic ant species of the genus *Doronomyrmex* Kutter are given. Morphological differences between females of *D. kutteri* and of their host species, *Leptothorax aceruorum* F., are shown.

Key words: ants, *Doronomyrmex*, social parasites. fauna, Poland

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Fragm. faun.	Warszawa, 14.07.1997	40	5	53-57
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Wiesława CZECHOWSKA*, Alexander RADCHENKO**

***Myrmica hirsuta* ELMES, 1978 (Hymenoptera, Formicidae) - a socially parasitic ant species new to Poland**

Abstract: *Myrmica hirsuta* ELMES is first recorded from Poland. It was found in the Pieniny Mts (the Western Carpathians) in 1996. Some notes on distribution and biology of this species are given. Morphological differences between *M. hirsuta* and its host species, *Myrmica sabuleti* MEIN., are shown.

Key words: ants, social parasites, *Myrmica hirsuta*, *Myrmica sabuleti*, fauna, Poland

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Fragm. faun.	Warszawa, 14.07.1997	40	6	59-71
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Przemysław TROJAN

Distribution pattern of *Diachlorini* s. str. (Diptera: Tabanidae)¹

Abstract: *Diachlorini* s. str. have a disjunctive distribution in the world, their occurrence being limited to 4 centres: American, Mediterranean, South African and Oriental-Australian. Speciation and dispersal centres are only found in tropical areas in South America and New Guinea. *Diachlorini* s. str. do not occur on the Asian continent, except for the Indian Peninsula (belonging to the Oriental Region) and a small stretch of the eastern coast of the Caspian Sea (belonging to the Mediterranean region). Relationships between the taxa of individual regions are discussed.

Key words: *Diptera*, *Tabanidae*, *Diachlorini*, distribution, relationships, world

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Fragm. faun.	Warszawa, 14.07.1997	40	7	73-79
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Regina BAŃKOWSKA

Conopidae (Diptera) from North Korea

Abstract: The paper gives descriptions and faunistic data on *Conopidae* collected by the workers of the Institute of Zoology PAS during the expeditions to North Korea (1959-1990). Seven species were distinguished in the material. More of them are not noted in Korea till now. They are: *Conops nignifrons* KRÓB., *C. strigatus* WIED., *Conops (Asiconops) hwangi* CHEN, *Physocephala robusta* ZIM. and *Neobrachycerea obscuripennis* (KRÓB.).

Key words: *Conopidae (Diptera)*, North Korea, Polish expeditions

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Fragm. faun.	Warszawa, 14.07.1997	40	8	81-93
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Eugeniusz BIESIADKA, Maria OCHOCKA

Hydracarina fauna in Lobelia-type lakes near Bytów

Abstract: 63 species of water mites recorded in three *Lobelia-type* lakes. Three species: *Eylais relict*a, *Lobertia saxonica*, *Arrenurus vietsi* were new for Poland. The fauna of investigated lakes is strongly individualized. The water mites fauna of Lake Łąkie were dominated by acidophilic species. In the Lake Głębooczko the indicators of oligo-mesotrophy and moderate eutrophy are the most numerous. The species of small water bodies and eurytopic were the most numerous in the Lakes Cechyńskie Małe and Głębooczko. This situation is results of growing eutrophy.

Key words: water mites, *Lobelia-type* lakes, acidification, indicators of trophic, faunistical similarity

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Fragm. faun.	Warszawa, 14.07.1997	40	9	95-101
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Goran S. MARKOVIĆ, Slavica Ž. SIMOVIĆ

Some aspects of ecology of *Pseudorasbora parva* (Cypriniformes: Cyprinidae) in the Meduvršje reservoir (Serbia, Yugoslavia)

Abstract: Stone moroco [*Pseudorasbora parva* (SCHLEGEL, 1842)] represents a newly introduced fish species in the waters of the western Serbian districts. Some ecological features (age, growth rate, nutrition) were analyzed on the sample comprising 96 individuals caught at the reservoir profiles.

Key words: *Cyprinidae*, *Pseudorasbora parva*, ecology. Yugoslavia

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Fragm. faun.	Warszawa, 22 XII 1997	40	10	103-109
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Michał W. BRZESKI* and BRZESKI**

Survey of *Bursaphelenchus* (Nematoda: Aphelenchoididae) species in pine wood of Poland

Abstract: Analyses of 179 pine wood samples and 73 wood chips samples from sawmills showed presence of four species of *Bursaphelenchus*, *B. mucronatus* being the commonest (7.5 % of samples). The identification of species was done using microscopic as well as RAPD-PCR methods.

Key words: *Nematoda*, *Bursaphelenchus*, survey, pine wood, RAPD-PCR

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Fragm. faun.	Warszawa, 22 XII 1997	40	11	111-125
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Andrzej S. JADWISZCZAK* and Hae-Chul PARK **

The Coccinellidae (Coleoptera) of the Korean Peninsula

Abstract. Forty seven species of *Coccinellidae* have been recorded from Korean Peninsula, of which 3 are new for the fauna of Korea. *Stethorus koreanus* BIELAWSKI is regarded as a synonym of *Stethorus (Allostethorus) amurensis* IABLOKOFF-KHNZORIAN. Materials recorded by BIELAWSKI (1980) as *Scymnus (Pullus) japonicus* Weise and *Scymnus (Nephus) phosphorus* LEWIS have been revised and actually, are considered as *Scymnus (Pullus) ferrugatus* (MOLL) and *Nephus bipunctatus* (KUGELANN), respectively.

Key words: *Coccinellidae*, Korea, new records, new synonymy.

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Fragm. faun.	Warszawa, 22 XII 1997	40	12	127-168
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Wiesława CZECHOWSKA

A comparative analysis of the structure of *Neuropteroidea* communities of tree canopies in linden-oak-hornbeam forests, light oak forests, mixed coniferous forests and pine forests

Abstract. The following paper is based on studies carried out from 1976 to 1987 on *Neuropteroidea* of tree canopies in 4 types of forest characteristic of lowland and upland areas in Poland: the subcontinental variety of the linden-oak-hornbeam forest (*Tilio-Carpinetum*), light oak forest (*Potentillo albae-Quercetum*), mixed coniferous forest (*Quercus roboris-Pinetum*) and pine forest (*Peucedano-Pinetum* and *Leucobryo-Pinetum*; the *Dicranio-Pinion* alliance). The following parameters were analysed and compared: species composition, abundance, structure as well as ecological and zoogeographical diversification of the neuropteran communities. Materials, totalling 10,280 imagines of 45 species of neuropterans, were collected in mature stands from various tree species: oaks, lindens, hornbeams, elms, pines and larches.

Key words: fauna, Poland, *Neuropteroidea*, community structure, forests.

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Fragm. faun.	Warszawa, 22 XII 1997	40	13	169-189
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Przemysław TROJAN

Transantarctic relations of *Diachlorini* (Diptera: Tabanidae)

Abstract. *Diachlorini* are distributed in 8 vegetation zones, but it is only in Neotropis that they occupy the entire environmental range. Plesiomorphic, intermediate and apomorphic character states in *Diachlorini* were discussed. The definition of ancestral forms is based on plesiomorphic character states. Their occurrence in Australia is indicated by intermediate character states in east Australia and New Caledonia. A four-step similarity analysis resulted in two clusters of closely related plesiomorphic taxa, one including *Cydistomyia* TAYL. and *Nubiloides* COSC.& PHIL., and the other with *Cydistomorpha* TROJ. as the basis for all other clusters, but nearest to Neotropical *Stenotabanus* LUTZ-related taxa. Similarity analysis confirmed the hypothesis of much closer morphological relations between South American and Australian taxa, than between Australian and South African ones. Transantarctic hypothesis is confirmed.

Key words: *Diptera*, *Tabanidae*, *Diachlorini*, ancestral forms, origin, habitat preferences, timing, distribution routes.

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Regina BAŃKOWSKA

Pipunculidae (Diptera) of Puszcza Białowieska

Abstract. The paper contains a list of 21 *Pipunculidae* species collected in the most typical habitats of Puszcza Białowieska: pine forests, linden-oak-hornbeam forests, ash-alder carrs and wet riverside meadows. The dipterans were collected in tree canopies throughout the vegetative season with Moericke's pitfall traps and sweeping nets. The material contains 11 species of *Pipunculidae* new to Puszcza Białowieska.

Key words: *Pipunculidae*, *Diptera*, Puszcza Białowieska, north-eastern Poland

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Fragm. faun.	Warszawa, 22 XII 1997	40	15	199-203
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Cezary BYSTROWSKI

***Atylostoma tricolor* (MIK, 1883), a species new to the fauna of tachinid flies
(Diptera: Tachinidae) of Poland**

Abstract: First record of *Atylostoma tricolor* (MIK) from Poland was described. Previous information records of this species from Europe were summarised.

Key words: *Tachinidae*, *Atylostoma*, first record, Poland

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Fragm. faun.	Warszawa, 30 XII 1997	40	16	207-213
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Byung-Hoon LEE, Young Bok CHO*, Eui-Hyeong LEE**

Biological collections as reference base for biodiversity assessment in the Republic of Korea

Abstract. Biological collections in 72 depositories of South Korea were surveyed. The number of specimens attained 5 144 409 in total, consisting of 4 103 000 animals, 1 034 825 plants and 6 584 fossils. The average numbers of specimens and species for each collection were 71 450 and 1 130 respectively. The most frequent were in the class range of 10 000-50 000 specimens and 0-100 species each. Twenty one of 45 depositories answered that 80% of their collections are well managed. As regards documentation, only 24% of the collections were electronically databased. The number of species represented by type specimens in the collections and taxonomic experts turned out to be 577 and 207 each. Considering the deplorable situation of the collection status, it is strongly suggested that immediate actions for capacity building by networking databases of the collections, man-power training and setting up of the National Museum of Natural History are urgently needed to provide resource base for biodiversity assessment as well as to respond properly to the Convention on Biological Diversity.

Key words: biodiversity, biological collections, Republic of Korea

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Fragm. faun.	Warszawa, 30 XII 1997	40	17	215-221
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Przemysław TROJAN

The floristic and faunistic Korean refugium during the last glacial period and its significance in postglacial biota formation.

Abstract. The hypothesis that the Manchurian-Korean refugium of forest flora and fauna played a role in the formation of the European biota in the postglacial period is confirmed by: geographical vicariance in the Palaearctic region, the distribution of fossil species, the similarity of the present-day climate to that in the Tertiary, the disappearance of the sea barrier between Europe and Asia in the Quaternary, ecological corridors serving as migration pathways between Europe and the Far East. The data point to the importance of studies of the biota of Poland and Korea for the explanation of the genesis and evolution of the living world.

Key words: biota migration, Korea, Europe, postglacial period.

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Fragm. faun.	Warszawa, 30 XII 1997	40	18	223-230
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Przemysław TROJAN, Jolanta WYTWER

Numerical methods of biodiversity studies and the problems of the protection of nature

Abstract. Numerical methods of faunistical research make possible estimation of species diversity and analysis of taxocoene structure. This enables a new approach to the problems of species diversity protection. The most important issue is the preservation of endangered and vulnerable species. They are an integral part of the normal and developed structure of communities, where they can occur as both recedent and dominant species.

Key words: species diversity, taxocoene structure, endangered and vulnerable species

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Fragm. faun.	Warszawa, 30 XII 1997	40	19	231-246
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Jerzy PAWŁOWSKI, Teresa TOMEK

Zoological expeditions to the North Korea organized in the years 1971–1992 by the Cracow Institute of Systematics and Evolution of Animals of the Polish Academy of Sciences

Abstract. Itineraries of fifteen Cracow zoological expeditions to the North Korean provinces, as well as informations about main systematic groups of invertebrates (*Apterygota*, *Orthopteroidea*, *Coleoptera*, *Myrmicidae*, *Lepidoptera*, *Diptera*, *Gastropoda*) and vertebrates (amphibians, reptilians, birds, small mammals) collected and observed in North Korea – are given. Also state of elaboration of all collections is presented.

Key words: North Korea, zoological expeditions, invertebrates, vertebrates, collections

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Regina BAŃKOWSKA, Maria STERZYŃSKA

Faunistic investigations conducted in North Korea by researchers from the Institute of Zoology Polish Academy of Sciences from 1959 to 1990

Abstract. Review of zoological expedition organized by Institute of Zoology PAS to North Korea and list of papers based on the material collected in Korean Peninsula are presented.

Key words: zoological expedition, collection of invertebrate fauna, North Korea,

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Fragm. faun.	Warszawa, 30 XII 1997	40	21	255-263
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Yong-Shik KIM*, Yoo-Mi LEE**

Conservation of rare and endangered Korean plants - present status and future perspectives

Abstract: Many wild Korean plant species have become endangered mainly due to human activities, and particularly the Korean war in the early 1950's, as well as by the rapid industrialization in the 1960's. Other major threats come as a result of human impacts, such as the mass illegal collections in the wild for medicinal or ornamental purposes and habitat disturbances due to recreational activities

The present conservation activities of Korean rare and endangered plant species were introduced. Among the species in the wild of Korea, the conservation criteria were applied to evaluate the conservation values. Habitat or species restoration for rare and endangered species were applied for some species in Korea, and these works will increase dramatically in the near future. Modern methods of recovery plan for *Abeliophyllum distichum* NAKAI, *Oleaceae*, to restore the wild habitats was also introduced.

Key words: conservation, rare plant, endangered plant, restoration, *Abeliophyllum distichum* NAKAI

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Byung-Yun SUN, Hwan Kim CHUL

Current status of conservation and systematics in Korean flora: a case study of *Eleutherococcus (Araliaceae)*

Abstract: Korea is relatively small in size but the flora is very rich in species composition and has very close floristic relationships with China and Japan. According to the most recent comprehensive floristic work, 3 914 taxa of vascular plants which comprise 189 families and 1 044 genera are known to be distributed in Korea. Among them, 407 taxa which belongs to 339 species 46 varieties and 22 forms are generally recognized as endemic to Korea. In addition, six genera including *Abeliophyllum (Oleaceae)*, *Echinosophora (Fabaceae)*, *Hanabusaya (Campanulaceae)*, *Homopterix (Apiaceae)*, *Megaleranthis (Ranunculaceae)*, and *Pentactina (Rosaceae)* are strictly confined to Korean peninsula. The naturalized plants in Korea comprises 181 taxa belonging to 33 families, 176 species, 3 varieties and 2 forms. *Eleutherococcus* is an Asian endemic genus with about 35 species worldwide mainly distributed in Eastern North Asia. In Korea, six species and one variety have been known to distribute, however, through this study, Korean *Eleutherococcus* can be rearranged into 4 species and two varieties which includes *E. gracilistylus*, *E. divaricatus* var. *divaricatus*, *E. divaricatus* var. *chiisanensis*, *E. sessiliflorus*, and *E. senticosus*.

Key words: Korean flora, endemic taxa, systematics, Korean *Eleutherococcus*

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Leon STUCHLIK, Halina KOMOROWSKA

Botanical and ecological investigations in North Korea by W. Szafer Institute of Botany, Polish Academy of Sciences, Cracow

Abstract: Report about results of scientific cooperation between W. Szafer's Institute of Botany Polish Academy of Sciences and Academy of Sciences of Korean People's Democratic Republic (KPDR) present on Polish Korean Seminar in Pułtusk (Poland).

Key words: Asia, North Korea, forest types, variability of cones, areophytic algae, *Chlorellales*, *Desmidiiales*, macrofungi, heavy-metals in litter, mosses, needles of *Pinus*.

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Yong Jung KWON, Eun Yeop HUH

Insect diversity and conservation problems in Korea

Abstract: Hitherto a total of 11 853 species with 504 families under 30 orders of insects have been recorded in Korean fauna. It estimates that a total of 1 500 000 insect specimens have been deposited throughout Korean institutions. 2 500 000 insects specimens or more from Korea is deposited in world institutions.

Key words: biodiversity, insects, inventory, nature conservation, Korea.

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Wanda Maria WEINER

***Collembola Poduromorpha* of Korean Peninsula – current status of the research.**

Abstract. The status of the exploration of *Collembola Poduromorpha* of the Korean Peninsula is described, in connection with the biogeographical distribution of species.

Key words: *Collembola*, *Poduromorpha*, Korean Peninsula, biogeographical distribution

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Fragm. faun.	Warszawa, 30 XII 1997	40	26	293-298
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Ewa STWORZEWICZ

The malacological investigations in North Korea

Abstract: The knowledge about molluscan fauna in the Democratic People's Republic of Korea (North Korea) was very scarce. Polish field investigations in North Korea started in 1965 by A. Riedel and were continued in 1983-1991 by E. Stworzewicz what allowed to recognize above 30 species on the basis of about 7000 specimens collected in all provinces of the country.

Key words: land snails, North Korea.

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Won KIM

Diversity of marine invertebrates with a case study of crustacean decapods and molecular phylogenetic studies in Korea

Abstract: Marine invertebrates are abundant in Korean waters. However, biological researches on marine invertebrates are limited to the faunal studies in most of the taxa. About 2 800 species of the marine invertebrates (excluding *Protozoa*) have been reported from Korea. In crustacean decapods, one of the well known group in Korea, 83 species of shrimps (including 16 freshwater species, and infraorders *Astacidea* and *Palinura*), 187 of crabs, and 59 of anomurans (including infraorder *Thalassinidea*) are known. Looking at decapod biodiversity, southern form and temperate zone form are abundant and the highest species diversity is observed in the Cheju Island waters. 29 species of shrimp, 4 of anomuran, and 24 of crab are economically important and 10 species of shrimp, 19 of anomuran, and 55 of crab are considered as rare species.

Molecular phylogenetic studies based on the nucleotide sequences of macromolecules are limited to some animal groups such as anthozoans, crustacean decapods, copepods, molluscans, branchiobdellidans.

With the current knowledge about the marine invertebrate fauna as well as the crustacean decapods in Korea, it is difficult to discuss the various aspects of biodiversity. Therefore, the continuous collections, inventory, faunal and systematic studies including molecular approaches on very marine invertebrates are urgently in need.

Key words: *Crustacea*, *Decapoda*, phylogeny, molecular systematics, Korea

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FRAGMENTA FAUNISTICA

Fragm. faun.	Warszawa, 30 XII 1997	40	28	307-311
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Andrzej SZEPTYCKI

The present knowledge of *Protura*

Abstract. Actually, more than 660 species of *Protura* is known. The knowledge of the *Protura* of different regions of the world is very unequal and mostly poor. The author estimate that not more than 10% of the existing species were described till now.

Only 20 species (and one subspecies) of *Protura* is known from the Korean Peninsula. The fauna is insufficiently known, comparing to China were more than 150 species, and Japan more than 50 species are recorded.

Key words: *Protura*, world

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FRAGMENTA FAUNISTICA

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Hung Sun KOH

Present status of biological researches on the conservation of Korean vertebrates and the systematic researches on rodent diversity

Abstract: In the Korean peninsula, 1 472 species of vertebrates are listed (960 fishes, 15 amphibians, 29 reptiles, 383 birds, 85 mammals): among them 48 species are designated as natural monuments (4 fishes, 38 birds, 6 mammals) and 116 species, endangered species (29 fishes, 4 amphibians, 8 reptiles, 54 birds, 21 mammals). Moreover, 116 species (24 fishes, 9 amphibians, 13 reptiles, 50 birds, 20 mammals) are designated by the Ministry of Environment as the vertebrates of special protection.

Total number of publications on biological researches using Korean vertebrates are 946 papers (fishes, 464; amphibians, 90; reptiles, 42; birds, 194; mammals, 156). But the researches on the conservation of biological resources are at basic level: 57% of the papers are related to the reports on the list of local fauna and traditional taxonomy, and only 13% of 87 endangered species in tetrapods were studied, but still in a very limited scope and depth.

In Korean rodents, many systematic papers were published using methods ranging from morphometry to DNA systematics, but a few international cooperational researches were carried out. All of Korean rodents are one or two subspecies of the species inhabited in the Eastern Asia or across Eurasia, and it is necessary for the conservation of Korean rodents to carry out international researches with the cooperation of many foreign mammalogists.

Key words: vertebrates, systematics, conservation, Korea

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FRAGMENTA FAUNISTICA

Fragm. faun.	Warszawa, 30 XII 1997	40	30	319-332
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Teresa TOMEK

Preliminary report on the investigation of birds in North Korea

Abstract. The paper presents the results of investigations conducted during eight expeditions to the Korean People's Democratic Republic. The observations included faunistic rarities (*Pernis ptilorhyncus*, *Gallinago solitaria*, *Emberiza sulphurata*) and species with under breeding ranges (*Actitis hypoleucos*, *Corvus dauuricus*, *Turdus chrysolaus*) Changes of ranges and numbers of some species (*Phalacrocorax carbo*, *Otis tarda*, *Falco tinnunculus*, *Falco subbuteo*, *Accipiter soloensis*) are discussed, and the status of rare and endangered species throughout the world (*Egretta intermedia*, *Egretta eulophotes*, *Ciconia boyciana*, *Nipponia nippon*, *Larus saundersi*, *Eurynorhynchus pygmaeus*) is also commented on.

Key words: birds, North Korea, breeding ranges, endangered species

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FRAGMENTA FAUNISTICA

Fragm. faun.	Warszawa, 30 XII 1997	40	31	333-341
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Jerzy PAWŁOWSKI

New taxa described from materials collected in Korean Peninsula by Polish zoological expeditions over 1885–1992

Abstract: Checklist of 222 species (or subspecies) and 15 higher taxa (belonging to 24 systematic groups of animals) is given.

Key words: Korean Peninsula, new taxa, checklist.

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