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MORPHOLOGY OF LARVAL AND PUPAL STAGES OF *ISTURGIA RORARIA* (FABRICIUS, 1777) (LEPIDOPTERA: GEOMETRIDAE)

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Abstract.— The first and last instars of *Isturgia roraria* (Fabricius, 1777) caterpillars are described and illustrated in details. The mouthparts, antennae and thoracic legs are used for the first time for the description within the genus *Isturgia* (Hübner, 1823). The description and complete illustration of thoracic leg of adult larva with numeration and nomenclature of all pores and setae are included. Some important characters of intermediate larval instars are recorded. New morphological details of pupa are presented.

Key words.— Entomology, morphology, chaetotaxy, larva, pupa, Lepidoptera, Geometridae, Macariini, *Isturgia roraria*.

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THE FIRST INSTAR LARVA OF *CASSIDA NEBULOSA* L. (COLEOPTERA: CHRYSOMELIDAE: CASSIDINAE) – A MODEL DESCRIPTION

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Abstract.— The first instar larva of *Cassida nebulosa* Linnaeus, 1758 is described in detail for the first time. The description is proposed as a model description of first instar larvae in the tribe Cassidini. Comparative morphology of first instar larvae of six chrysomelid subfamilies is presented. Cassidini are characterised by the largest number of apomorphies within Chrysomelidae.

Key words.— morphology, first instar larva, Coleoptera, Chrysomelidae, Cassidinae, *Cassida*, Palaearctic Region.

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PSYLLIODES CERENAE SP. NOV., A NEW ALTICINAE SPECIES FROM SOUTHWEST TURKEY (COLEOPTERA: CHRYSOMELIDAE)

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Abstract.— A new species, *Psylliodes cerenae* **sp. nov.** from Southwest Turkey is described and illustrated.

Key words.— Coleoptera, Chrysomelidae, Alticinae, *Psylliodes*, new species, Turkey.

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DIFFERENT ATTACK MODES OF *FORMICA* SPECIES IN INTERSPECIFIC ONE-ON-ONE COMBATS WITH OTHER ANTS (HYMENOPTERA: FORMICIDAE)

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Abstract.— The separation of the wood ant sibling species *Formica rufa* and *F. polyctena* has been questioned recently on partly morphological grounds. We show a difference in their attacks on ten alien, mainly sympatric, ant species. *F. rufa* significantly more often inflicted pure proximal in proportion to distal lesions than *F. polyctena.* They did not significantly differ in total number, laterality, or anterior/posterior position of inflicted lesions and did not injure some victim species significantly more proximally than others. *Serviformica* and *Raptiformica* species inflicted mainly distal lesions in contrast to the mainly proximally attacking *Coptoformica* and *F. truncorum* of the wood ant subgenus (*Formica* s.s.). *Formica exsecta* amputated significantly more heads relative to other body parts than eight other *Formica* species when all fought individually with ten ant species. *F. exsecta* decapitated *Formica* species significantly more often than non-*Formica* species (enemy specification) although this discrimination was not significantly stronger than in the eight other amputating *Formica* species (enemy specification "in the strict sense" was not demonstrated). Similar interspecific decapitations reported from natural *F. exsecta* colonies support the relevancy of one-on-one combats in the laboratory to the natural situation. Phylogenetic position and degree of polygyny of *Formica* species were not clearly correlated with interspecific proximal-attack propensity.

Key words.— Ants, *Formica,* sibling species, decapitation, proximo/distal lesions, monogyny/polygyny, fight technique.

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SYNQUADRIDERES, NEW GENUS OF PLATYNOTINI FROM KENYA (COLEOPTERA: TENEBRIONIDAE)

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Abstract.— *Synquadrideres* **gen. nov.** is described from Kenya, with three known species: *naivashaensis* **sp. nov.** (type species), *medius* **sp. nov.** and *merkli* **sp. nov.** The genus belongs to platynotoid group of the tribe Platynotini, where is related to the genus *Quadrideres* Koch.

Key words.— Coleoptera, Tenebrionidae, Platynotini, *Synquadrideres*, Kenya, new genus, new species.

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PTYCTIMOUS MITES (ACARI: ORIBATIDA) OF COSTA RICA

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Abstract.— The fauna of ptyctimous mites of Costa Rica has been described and analysed. At nearly 200 localities in all provinces of Costa Rica, 76 species of ptyctimous mites (6 Mesoplophoridae, 31 Euphthiracaroidea, 39 Phthiracaroidea) represented by over 3300 specimens have been found. Over 40% of species are new to science. Descriptions of 32 new species have been given: *Mesoplophora* (*Parplophora*) *bacula* **sp. nov.**, *Oribotritia alajuela* **sp. nov.**, *O. allocota* **sp. nov.**, *O. brevisetosa* **sp. nov.**, *O. laselve* **sp. nov.**, *O. nasalis* **sp. nov.**, *O. partita* **sp. nov.**, *Mesotritia semota* **sp. nov.**, *Euphthiracarus evexus* **sp. nov.**, *E. pedanos* **sp. nov.**, *E. serangos* **sp. nov.**, *E. tesselatus* **sp. nov.**, *E. tumidus* **sp. nov.**, *Rhysotritia meristos* **sp. nov.**, *R. parallelos* **sp. nov.**, *Phthiracarus totus* **sp. nov.**, *Plonaphacarus baculus* **sp. nov.**, *Austrophthiracarus nexilis* **sp. nov.**, *A. retrorsus* **sp. nov.**, *Austrophthiracarus zeuktos* **sp. nov.**, *Arphthicarus allocotos* **sp. nov.**, *A. iubatus* **sp. nov.**, *A. pararidiculus* **sp. nov.**, *A. parasaucius* **sp. nov.**, *A. pervalidus* **sp. nov.**, *Protophthiracarus clandestinus* **sp. nov.**, *P. heteropilosus* **sp. nov.**, *P. heterosetosus* **sp. nov.**, *Notophthiracarus pedanos* **sp. nov.**, *Atropacarus* (*Hoplophorella*) *frondeus* **sp. nov.**, *Atropacarus* (*Atropacarus*) *antrosus* **sp. nov.**, *A.* (*A*) *folious* **sp. nov.** The identification keys of the families, genera and species with figures of the species are presented. On the basis of the data collected, it is difficult to distinguish between the fauna of ptyctimous mites from the western and eastern coast, or north-western and south-eastern parts of the country. The most abundant species, whose representatives make over 30% of all ptyctimous mite specimens found in all samples, is pantropical *Plonaphacarus kugohi* occurring mainly in the rain forest La Selva. The fauna of ptyctimous mites of Costa Rica is to a large extent harmonic. Euphthiracaroidea are represented by all main genera, whereas from among Phthiracaroidea the genera *Hoplophthiracarus* and *Steganacarus* have not been represented, and the gondwanian *Notophthiracarus* was represented by only one species. The fauna of ptyctimous mites in Costa Rica is typically Neotropical. Over 21% species are widespread: semicosmopolitan and pantropical, the others are neotropical. From among the latter only 18% are widespread in the Neotropical region, 35% are bound with Mexican subregion, and nearly half (46%) are restricted to Costa Rica, including 17% of endemic species. The fauna of ptyctimous mites of the region is weakly related to the fauna of Nearctic region, only a few of the species reach the south states of the USA.

Key words.— Acari, Ptyctima, fauna, Costa Rica, new species, zoogeography.

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A TAXONOMIC REVISION OF THE SOCIALLY PARASITIC *MYRMICA* ANTS (HYMENOPTERA: FORMICIDAE) OF THE PALAEARCTIC REGION

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Abstract.— A taxonomic review is made of the 15 described species of socially parasitic *Myrmica,* found in the Palaearctic, and 3 apparently free-living *Myrmica* species that have characteristics of the "parasitic syndrome". Notes on the current taxonomic status and biological knowledge of each species are given. Earlier synonymies are discussed and one new synonymy is made: *M. samnitica* Mei = *M. laurae* Emery. Also, the synonymy of *M. myrmecophila* Wasmann with *M. sulcinodis* Nylander is confirmed and it is suggested that the type specimen is neither an ergatoid queen nor a social parasite, but a worker parasitized by *Mermis*. The status of *M. symbiotica* Menozzi remains unclear: it is not an ergatoid queen but could be a pseudogyne worker of a parasitic species with as yet undescribed queens. Keys are given for the identification of all castes of the 10 recognised species of social parasite (including *M. symbiotica*) and the 3 associated free-living species.

Key words.— Taxonomy, *Sifolinia*, *Sommimyrma*, *Symbiomyrma*, new synonyms, key.

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GENETIC DIVERSITY OF THE INVADING FISH SPECIES *NEOGOBIUS MELANOSTOMUS* (PALLAS, 1811) (GOBIIDAE: PERCIFORMES) FROM THE BALTIC SEA

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Abstract.— The genetic diversity of *Neogobius melanostomus* populations was investigated by means of allozyme electrophoresis. 28 loci coding for 16 enzyme systems were examined. Samples originated from the Gulf of Gdańsk (Baltic Sea, newly founded population) and the north part of the Black Sea, off the Crimean Peninsula (centre of range). Despite their considerable geographical isolation, the genetic distance was not high (D_{Nei} = 0.0353), also the populations had shown great similarity at the polymorphism level and the mean number of alleles per locus. High level of polymorphism and no signs of the founder effect in the Baltic Sea population could indicate that colonisation was very intensive.

Key words.— Genetic distance, migration, *Neogobius melanostomus*, genetic polymorphism, founding of population

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CYCLOTOMA ALLENI, NEW SPECIES FROM INDIA (COLEOPTERA: ENDOMYCHIDAE)

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Abstract.— *Cyclotoma alleni*, new species from India is described and illustrated.

Key words.— Entomology, taxonomy, new species, Cucujoidea, Endomychinae.

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EVARCHA CULICIVORA SP. NOV., A MOSQUITO-EATING JUMPING SPIDER FROM EAST AFRICA (ARANEAE: SALTICIDAE)

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Abstract.— *Evarcha culicivora* **sp. nov.**, a jumping spider from western Kenya, is described. Records of natural prey are summarized, showing that this species feeds primarily on female mosquitoes, including *Anopheles gambiae*, the most important vector of human malaria in East Africa. This may be a salticid with unusually direct significance for public health.

Key words.— Arachnology, Araneae, Salticidae, *Evarcha*, Afrotropical Region, mosquitoes, malaria.