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Akrav israchanani Levy, 2007 - Ayyalon Cave, Israel

Photo by Israel Na'aman from:

FET (V.), SOLEGLAD (M. E.) & ZONSTEIN (S. L.), 2011

Welcome to our 3rd issue of *Biospeologica Bibliographia - Publications*

Any suggestions are welcome and should be submitted to the editors at: bernard.lebreton.bl@gmail.com.

We strongly encourage everybody to submit new titles and abstracts.

Sincerely yours.

Bienvenue sur notre 3^e numéro de *Biospeologica Bibliographia - Publications*.

Toute suggestion est la bienvenue à l'adresse: bernard.lebreton.bl@gmail.com.

Nous vous encourageons à nous soumettre les nouveaux titres ainsi que vos résumés.

Sincèrement vôtres.

Acknowledgments-Remerciements

AKKARI Nesrine, BENSTEAD Jonathan P., BICHAIN Jean-Michel, CAMACHO Ana Isabel, CASTELLANOS-MORALES César A., COOPER John E., DE FREITAS Chris R., DVOŘÁK Libor, FET Victor, FRESNEDA Javier, GASPARO Fulvio, GEORGIEV Dilian Georgiev, ISAIA Marco, LATELLA Leonardo, LÉVEILLÉ Richard J., LOHAJ Roman, MAJKA Christopher G., MANCONI Renata, MOCK Andrej, NARANJO Manuel, PÁLSSON Snæbjörn, PÉREZ FERNÁNDEZ Toni, PIVA Erminio, POR Francis Dov, PRENDINI Lorenzo, PRICE Liz, PUECHMAILLE Sébastien J., RACOVITĂ Gheorghe, RANGA REDDY Yenumula, RŮŽIČKA Vlastimil, SALGADO COSTAS José María, SAMBUGAR Beatrice, SEMIKOLENNYKH Andrey A., ŠEVČÍK Martin, SIDOROV Dmitry A., SKET Boris, SOLEGLAD Michael E., ŠUBA Jurgis, TRAJANO Eleonora, VIVES Eduard, WHITTEN Tony, WITTMANN Karl J., ZACHARDA Miloslav, ZAMORA MUÑOZ Carmen, ZARAGOZA Juan Antonio, ZONSTEIN Sergei L.

Publications 2011

ABD RAHMAN (M. R.) & ABDULLAH (M. T.), 2011.

Memecahkan Kod DNA cecadu hitam pudar. *Dewan Kosmik* Jun:32-33.

http://unimas.academia.edu/MohdRidwanAbdRahman/Papers/718312/Memecahkan_Kod_DNA_Cecadu_Hitam_Pudar

ABDULLIN (S. R.), 2011. Effect of illumination on the distribution of phototrophic organisms in the entrance part of the Shul'gan-Tash Cave. *Ekologiya* 3:224-226.

ABDULLIN (S. R.), 2011. Effect of illumination on the distribution of phototrophic organisms in the entrance part of the Shul'gan-Tash Cave. *Russian Journal of Ecology* 42(3, May):249-251. Original Russian Text © ABDULLIN (S. R.), 2011, published in *Ekologiya* 3:224-226.

DOI: <http://dx.doi.org/10.1134/S1067413611030039>.

KW: Shul'gan-Tash Cave, illumination, phototrophic organisms, illumination zoning.

ABOLAFIA (J.) & IGLESIAS (M. T.), 2011. Nematodos cavernícolas de Andalucía Oriental. *Monografías Biospeleológicas* 6:16-25. RES: Se realiza el primer catálogo de nematodos cavernícolas de Andalucía Oriental.

ABOLAFIA (J.) & PEÑA-SANTIAGO (R.), 2011. *Ablechroiulus spelaeus* sp. n. and *A. dudichi* Andrassy, 1970 from Andalucía Oriental, Spain, with a discussion of the taxonomy of the genus *Ablechroiulus* Andrassy, 1966

(Nematoda, Rhabditida, Rhabditidae). *Zootaxa* 2922(June 17):1-14, 6 pl., 34 réf. ABS: One new and one known (but uncommon) species of the genus *Ablechroiulus* are described and illustrated from natural areas in the Iberian Peninsula. *Ablechroiulus spelaeus* sp. n. is characterized by having body length 0.81-1.48 mm in females and 0.74-1.20 mm in males, lip region nearly continuous and 9-13 µm wide, stoma 23-29 µm long or 1.8-2.7 times the lip region width, neck 166-265 µm long, metacarpus well differentiated, oviduct with a small sac, V=55-59, female tail (51-60 µm, c=14-25, c'=1.9-2.7) with two marked sections, male tail (52, 58 µm, c=14.3, 20.7, c'=2.0) with filiform posterior part, bursa leptoderan and with nine pairs of papillae (1+2/1+2+1+2), spicules 40, 44 µm long having a terminal protuberance, and gubernaculum 20, 24 µm long. Furthermore, one female of *A. dudichi* Andrassy, 1970 is described from the north of the Iberian Peninsula. Descriptions, measurements and illustrations are presented for the two species, and SEM pictures are provided for *A. spelaeus* sp. n. The identity of *Ablechroiulus* is discussed, including a historical outline, its morphological characterization, and a discussion on the status of several of its species. An emended diagnosis of the genus is provided as well as a list of its species and a key to their identification. KW: *Ablechroiulus*, description, key, morphology, new species, rhabditids, Iberian Peninsula, SEM, taxonomy. <http://www.mapress.com/zootaxa/list/2011/2922.html>

ADHIKARI (H.), 2011. Species richness, distribution, and threats of bats in Palpa and Kaski districts of western Nepal. *Small Mammal Mail* 2(2, July/December 2010, January 2011):14-22.

<http://www.zoosprint.org/shownewslettersBackIssue.asp?idNewsLetter=11>

AGUILAR (R.), LÓPEZ CORREA (M.), CALCINAI (B.), PASTOR (X.), DE LA TORRIENTE (A.) & GARCIA (S.), 2011. First records of *Asbestopluma hypogea* Vacelet

- & Boury-Esnault, 1996 (Porifera, Demospongiae Cladorhizidae) on seamounts and in bathyal settings of the Mediterranean Sea. *Zootaxa* 2925(June 21):33-40, 3 pl., 36 réf. ABS: The carnivorous sponge *Asbestopluma hypogea*, was known only from shallow submarine caves (-15 to -26 m) in the Western Mediterranean Sea and the Adriatic. Herein *A. hypogea* is reported from outside of caves, on seamounts in the Alboran Sea (-167 m), off the Balearics (-100 m) and north off Sicily (-660 m), and along steep bathyal escarpments in the Strait of Sicily (~700 m). These deeper ROV-based findings of *A. hypogea* are conform to the typical deep-sea occurrence of the Cladorhizidae. KW: Cladorhizidae, western Mediterranean, carnivorous sponges.
<http://www.mapress.com/zootaxa/list/2011/2925.html>
- ALLEGRUCCI (Giuliana), TRUCCHI (Emiliano) & SBORDONI (Valerio), 2011.** Tempo and mode of species diversification in *Dolichopoda* cave crickets (Orthoptera, Rhaphidophoridae). *Molecular Phylogenetics and Evolution* 60(1, July):108-121. DOI: <http://dx.doi.org/10.1016/j.ympev.2011.04.002>. ABS: This study focuses on the phylogenetic relationships among ninety percent of known *Dolichopoda* species (44 out of 49); primarily a Mediterranean genus, distributed from eastern Pyrenees to Caucasus. A total of 2490 base pairs were sequenced corresponding to partial sequences of one nuclear (28S rRNA) and three mitochondrial genes (12S, 16S and COI). A relaxed molecular clock, inferred from Bayesian analysis was applied to estimate the divergence times between the lineages using well dated palaeoevents of the study areas. Molecular substitution rates per lineage per million years were also obtained for each analyzed gene. Based on the nearly complete species phylogeny, temporal patterns of diversification were analyzed using Lineage-Through-Time plots and diversification statistics. Alternative hypotheses about the colonization of present range by *Dolichopoda* species were tested by means of Approximate Bayesian Computation analysis. Results from this analysis carried out on the 90% of known *Dolichopoda* species confirmed the previous ones based on subgroups of species, suggesting the ABC analysis as a remarkable tool in biogeographic studies. Based on these results, the distribution of *Dolichopoda* species appears to have been shaped by the palaeogeographic and climatic events that occurred from Late Miocene up to the Plio-Pleistocene. Both vicariance and dispersal events appear to have influenced *Dolichopoda* species distributions, with many processes occurring in ancestral epigean populations before the invasion of the subterranean environment. Highlights: A total of 2490 bp was analyzed in species of the Mediterranean genus *Dolichopoda*. Molecular clock was calibrated using well dated palaeoevents of the study areas. Diversification's patterns were analyzed by LTT plots and diversification statistics. ABC analysis was used to test alternative biogeographic hypotheses. Results suggested the ABC analysis as a remarkable tool in biogeographic studies. KW: Lineage diversification, Molecular rates, Biogeography, ABC analysis, Cave crickets, *Dolichopoda*.
- ÁLVAREZ-PADILLA (F.) & BENJAMIN (S. P.), 2011.** Phylogenetic placement and redescription of the spider genus *Atelidea* Simon, 1895 (Araneae, Tetragnathidae). *Zootaxa* 2761(February 9):51-63, 7 pl., 40 réf. <http://www.mapress.com/zootaxa/list/2011/2761.html>
- ANDERSON (G.), 2011.** Tanaidacea Literature. May 7. <http://peracarida.usm.edu/TanaidaceaLit.pdf>. BL: 3868 records, 1130 espèces, 2403 réf.
- ANDERSON (G.), 2011.** Tanaidacea Classification. May 11. <http://peracarida.usm.edu/TanaidaceaTaxa.pdf>. BL: 1130 espèces.
- ANIOTSBÈHÈRE (J.-C.), 2011.** Nécrologie. Jean VIVANT (1923-2010), naturaliste pyrénéen et botaniste. *Bulletin de la Société linnéenne de Bordeaux* 146, nouvelle série, 39(1):46-48.
- ANONYME, 2011.** Blind cave dwelling insect discovered in the Algarve. *The Portugal News Online*, Edition: 1094, 8/1/2011. <http://www.theportugalnews.com/cgi-bin/article.pl?id=1094-27>.
- ANONYME, 2011.** La Hague insolite: les grottes de Jobourg. *La Presse de la Manche* 20391(Mercredi 27 Juillet):6. BL: Photographie en couleur du "lichen doré" à l'intérieur des grottes.
- ANONYME, 2011.** Syndrome du nez blanc: ouvrez l'œil! *Regards Spéléo Info* 74(Mars-Avril):33.
- ARBEA (J. I.), PÉREZ (T.) & CARRASCO (P.), 2011.** *Deuteraphorura cebennaria* (Gisin, 1956) primera cita para la fauna de la Península Ibérica (Collembola, Onychiuridae). *Boletín de la Sociedad Entomológica Aragonesa* 48:351-357. ABS: *Deuteraphorura cebennaria* (Gisin, 1956) is recorded for the first time from the Iberian Peninsula, based on material from Malaga caves, thus extending its known range from northern Europe to southern areas. The known cavernicolous collembolan fauna of the Sierra de las Nieves and Sierra Tejada (Málaga, southern Spain) is represented by eight species, of which three are troglobites and two troglaphiles.
- ASENCIO (Antonia Dolores) & ABOAL (Marina), 2011.** In situ acetylene reduction activity of *Scytonema julianum* in Vapor cave (Spain). *International Journal of Speleology* 40(1, January):17-21. DOI: <http://dx.doi.org/10.5038/1827-806X.40.1.3>. ABS: Nitrogen fixation was measured in situ for the first time by acetylene reduction for a greyish mat composed of *Scytonema julianum* in cave-like environments. Mat-specific rates (129.9-215.7 nmol C₂H₄ m⁻² s⁻¹ for daytime fixation and 65.1-120.6 nmol C₂H₄ m⁻² s⁻¹ for nighttime fixation) recorded in the Vapor cave differed considerably due to the energy reserves stored during photosynthesis being exhausted and used in the dark phase. The most influential environmental parameter for nitrogen fixation in the Vapor cave is temperature in the daytime and nighttime fixations. Nitrogen fixation by cyanobacteria may contribute considerably to the overall nitrogen cycle in harsh environments such as caves. Nitrogenase activity in *Scytonema julianum* was roughly 30 times higher than that of *Scytonema mirabile*, which also grew in cave environments, which is due to the characteristics of each site. The entrance of Vapour cave (Spain) faces SE, measures 0.75 x 0.6 m and opens to shafts of a total depth of 80 m. Its dimensions and environmental conditions (relative humidity up to 100%; maximum temperature, 43°C) imply that it is isolated from external influences, and that the microclimate differs substantially from that experienced externally. Nitrogen fixation, photon flux density, relative humidity and temperature in the Vapor cave were taken hourly over a 24-hour period in winter. KW: Caves, cyanobacteria, nitrogen fixation, *Scytonema julianum*, SE Spain.
- BARTHOLEYNS (Jean-Pierre), 2011.** 1^{er} Congrès croate de Spéléologie. *Regards* 74(Mars/Avril):36-37.
- BARTON (Larry L.) & NORTHUP (Diana E.), 2011.** *Microbial Ecology*. John Wiley & Sons, 2011(September 9):360 p. SUM: *Microbial Ecology* presents a broad overview of microbial ecology while providing numerous special features to assist students, teachers, and the professional reader. Information boxes in each of the sixteen chapters highlight specific microbial ecology issues of particular interest. Included in the text, also, is a glossary and key words. The book covers a selected reading list for each chapter; a special section in each chapter on "microbial spotlights" that focus on the latest work and findings of scientists from around the world; and exercises that promote critical thinking. <http://books.google.fr/books?id=j13RTHK4aQMC&printsec=frontcover&vq=cave&hl=fr#v=onepage&q=cave&f=false>
- BASKAR (Sushmitha), BASKAR (Ramanathan) & ROUTH (Joyanto), 2011.** Biogenic Evidences of Moonmilk Deposition in the Mawmluh Cave, Meghalaya, India. *Geomicrobiology Journal* 28(3, March):252-265. DOI: <http://dx.doi.org/10.1080/01490451.2010.494096>. ABS: Moonmilk, a microcrystalline secondary cave deposit, actively forms on the floor of Krem Mawmluh - a limestone cave in Meghalaya, Northeastern India. Due to the abundance of micrite and calcified microbial filaments, we hypothesize that these deposits form as a result of ongoing microbial interactions. Consistent with this idea, we report electron microscopic and microbiological evidences for the biological origin of moonmilk in Krem Mawmluh. Scanning electron microscopy indicated abundant calcified microbial filaments, needle calcite, fibre calcites (micro-fibre and nano-fibre calcite crystals), biofilm and

- microbial filaments in the moonmilk. The total viable culturable microbes showed high population densities for microbes in the moonmilk and moonmilk pool waters. In vitro culture experiments, confirmed the capability of many of the isolated strains to precipitate calcite and some of the identified isolates belonged to the *Bacillus* sp. and *Actinomyces*. These results clearly support the biogenic nature of the deposits. KW: Geomicrobiology, Caves, Moonmilk, Bacteria, Calcite precipitation.
- BAUZÀ-RIBOT (Maria M.), JAUME (Damià), FORNÓS (Joan Josep), JUAN (Carlos) & PONS (Joan), 2011.** Islands beneath islands: phylogeography of a groundwater amphipod crustacean in the Balearic archipelago. *BMC Evolutionary Biology* 11(July 26):221. ABS: Background: Metacrangonyctidae (Amphipoda, Crustacea) is an enigmatic continental subterranean water family of marine origin (thalassoid). One of the species in the genus, *Metacrangonyx longipes*, is endemic to the Balearic islands of Mallorca and Menorca (W Mediterranean). It has been suggested that the origin and distribution of thalassoid crustaceans could be explained by one of two alternative hypotheses: (1) active colonization of inland freshwater aquifers by a marine ancestor, followed by an adaptative shift; or (2) passive colonization by stranding of ancestral marine populations in coastal aquifers during marine regressions. A comparison of phylogenies, phylogeographic patterns and age estimations of clades should discriminate in favour of one of these two proposals. Results: Phylogenetic relationships within *M. longipes* based on three mitochondrial DNA (mtDNA) and one nuclear marker revealed five genetically divergent and geographically structured clades. Analyses of cytochrome oxidase subunit 1 (cox1) mtDNA data showed the occurrence of a high geographic population subdivision in both islands, with current gene flow occurring exclusively between sites located in close proximity. Molecular-clock estimations dated the origin of *M. longipes* previous to about 6 Ma, whereas major cladogenetic events within the species took place between 4.2 and 2.0 Ma. Conclusions: *M. longipes* displayed a surprisingly old and highly fragmented population structure, with major episodes of cladogenesis within the species roughly correlating with some of the major marine transgression/regression episodes that affected the region during the last 6 Ma. Eustatic changes (vicariant events) -not active range expansion of marine littoral ancestors colonizing desalinated habitats-explain the phylogeographic pattern observed in *M. longipes*. <http://www.biomedcentral.com/1471-2148/11/221>
- BECHEV (D.) & CHANDLER (P. J.), 2011.** Catalogue of the Bolitophilidae and Diadocidiidae of the World (Insecta: Diptera). *Zootaxa* 2741(January 17):38-58, 121 réf. <http://www.mapress.com/zootaxa/list/2011/2741.html>
- BELAIDI (N.), TALEB (A.), MAHI (A.) & MESSANA (G.), 2011.** Composition and distribution of stygobionts in the Tafna alluvial aquifer (north-western Algeria). *Subterranean Biology* 8(2010, Published:11.III.2011):21-32. DOI: <http://dx.doi.org/10.3897/subtbiol.8.1227>. ABS: Little is known about the hypogean fauna of Algeria, with studies mostly dating to the beginning of the twentieth century (Gurney, 1908; Racovitz, 1912; Monod, 1924; Pesce & Tetè, 1978); moreover, the knowledge varies markedly among regions. In this study, we examined the composition and distribution of the invertebrate communities in the phreatic zone of the Tafna aquifer (N-W Algeria). Twelve wells close to the Tafna wadi, ranging between 120 and 1100 m a. s. l., were studied from May 2005 to March 2006. Many specimens belonging to 37 taxa were collected, the most frequent taxa being *Typhlocirolana* sp., a stygobitic Gammaridae species, Cyclopidae and Ostracoda. Other crustacean species were relatively scarce, with discontinuous distribution, being present only in a few wells. The taxonomic richness and abundance of stygobitic crustacean communities were relatively constant over time. The spatial distribution of stygobionts was mainly related to the exchanges with surface water. KW: Tafna, Algeria, Stygobionts, Wells, Invertebrates.
- BENSON (C. A.), BIZZOCO (R. W.), LIPSON (D. A.) & KELLEY (S. T.), 2011.** Microbial diversity in non-sulfur, sulfur and iron geothermal steam vents. *FEMS Microbiology Ecology* 76(1, April):74-88. DOI: <http://dx.doi.org/10.1111/j.1574-6941.2011.01047.x>. ABS: Fumaroles, commonly called steam vents, are ubiquitous features of geothermal habitats. Recent studies have discovered microorganisms in condensed fumarole steam, but fumarole deposits have proven refractory to DNA isolation. In this study, we report the development of novel DNA isolation approaches for fumarole deposit microbial community analysis. Deposit samples were collected from steam vents and caves in Hawaii Volcanoes National Park, Yellowstone National Park, and Lassen Volcanic National Park. Samples were analyzed by X-ray microanalysis and classified as non-sulfur, sulfur or iron-dominated steam deposits. We experienced considerable difficulty in obtaining high yield, high quality DNA for cloning: only half of all the samples ultimately yielded sequences. Analysis of archaeal 16S ribosomal RNA gene sequences showed that sulfur steam deposits were dominated by *Sulfolobus* and *Acidianus*, while non-sulfur deposits contained mainly unknown *Crenarchaeota*. Several of these novel *Crenarchaeota* lineages were related to chemoautotrophic ammonia oxidizers, indicating that fumaroles represent a putative habitat for ammonia-oxidizing Archaea. We also generated archaeal and bacterial enrichment cultures from the majority of the deposits and isolated members of the Sulfolobales. Our results provide the first evidence of Archaea in geothermal steam deposits and show that fumaroles harbor diverse and novel microbial lineages. KW: 16S, phylogeny, microbial community, *Crenarchaeota*, *Sulfolobus*.
- BERNABÒ (Paola), LATELLA (L.), JOUSSON (O.) & LENCIONI (V.), 2011.** Cold stenothermal cave-dwelling beetles do have an HSP70 heat shock response. *Journal of Thermal Biology* 36(3, April):206-208. DOI: <http://dx.doi.org/10.1016/j.jtherbio.2011.03.002>. ABS: The response to high temperatures in adults of two cold stenothermal cave-dwelling leptodirins, *Neobathyscia mancinii* and *Neobathyscia pasai* (Coleoptera, Cholevidae) was evaluated by determining levels of gene expression of two members of the family of heat shock proteins 70 kDa by qPCR. In both species, hsc70 mRNA level was constant with increasing temperature, whereas a significant increase in the inducible member (hsp70) mRNA was observed, higher in *N. pasai*. This difference could be due to their in-cave distribution: *N. pasai* colonizes the cave entrance where the temperature is more variable than the internal part where *N. mancinii* is confined. These results demonstrated for the first time the occurrence of a heat shock response in troglodite insects and suggest the correlation between the intensity of this response and the adaptation to the cave environment. KW: Cold stenothermal, Heat shock proteins, *Neobathyscia mancinii*, *Neobathyscia pasai*, Thermal stress.
- BIDEGARAY-BATISTA (Leticia) & ARNEO (Miquel A.), 2011.** Gone with the plate: the opening of the Western Mediterranean basin drove the diversification of ground-dweller spiders. *BMC Evolutionary Biology* 11:317. DOI: <http://dx.doi.org/10.1186/1471-2148-11-317>.
- BISWAS (Jayant) & HARRIES (Daniel B.), 2011.** Krem Bylliat: The Harbour of Precedent Cavernicolous Representatives from the Jaintia Hills, Meghalaya, India. *Journal of Biological Sciences* 11(7):459-465. DOI: <http://dx.doi.org/10.3923/jbs.2011.459.465>. ABS: The subterranean mode of life always needs a high degree of biological adaptation. The cavernicolous species usually get selected from those which are preadapted with biological traits suitable for cave life and finally occupied a separate taxonomic status. With the ever going exploration of subterranean passages in Jaintia hills, till date several trogloditic species have been recorded from this particular area. Cave biota survey with respect to the explored subterranean passages of the area was conducted in February 2011. Krem Bylliat (cave) is one of them, measure horizontally 600 m having several openings. The cave is situated in the boundary of two major rock formations, nearer to one of the main tributary of river Kopili. Though, the cave is harbour of rich biodiversity, it was found to be relatively impoverished in terms of troglomorphic taxa. Possible factors, obviating the evolution of troglomorphy in this cave have been discussed. KW: Pre-adaptation, meghalayan caves, biospeleology, Troglomorphy.
- BISWAS (Jayant) & SHROTRIYA (Shivam), 2011.** Dandak: a mammalian dominated cave ecosystem of India. *Subterranean Biology* 8(2010, Published:11.III.2011):1-7. DOI: <http://dx.doi.org/10.3897/subtbiol.8.1124>. ABS: Perpetual darkness, high humidity with almost constant geophysical factors are some of the abiotic factors which make the cave ecosystem unique. For any species a high degree of adaptation is always needed to thrive in such an ecosystem. Mammals in general have never adapted to cave life but they can play a major role in the cave ecosystem. Structurally, the Dandak cave has two distinct chambers that are completely different from each other in several geophysical factors. Thus

both the cave chambers offer two distinct types of ecological niche. In the present study we found that both chambers of this cave were dominated by mammals all year round. Additionally, the group of mammals using the outer chamber completely differs from the group using the inner one. Possible geophysical factors responsible for such differences are discussed. KW: Cavernicoles, cave ecosystem, troglaphiles, mammals, carnivores.

BISWAS (Jayant), SHROTRIYA (Shivam), RAJPUT (Yogita) & SASMAL (Saugata), 2011. Impacts of Ecotourism on Bat Habitats in Caves of Kanger Valley National Park, India. *Research Journal of Environmental Sciences* 5(9):752-762. [DOI:](#)

<http://dx.doi.org/10.3923/rjes.2011.752.762>. ABS: The roosting microchiropterans mostly prefer caves and are highly sensitive to anthropogenic disturbances. The caves of the Kanger Valley National Park, is becoming day by day the most crowd puller spot for Central India and due to which it often overruled all the laws of ecotourism. In the present study, two microchiropteran species were found to roost together in the caves of the Kanger Valley National Park, India with distinct microhabitats. *Rhinolophus rouxii* was found in the twilight to dark zone of the cave while *Hipposideros cineraceus* was found to occupy the more stable zones of the cave and was highly sensitive to anthropogenic disturbance. The population sizes of the bats roosting inside the two major caves have been estimated and compared with the earlier available records and this provides evidence of a decline in abundance. Further, the gestation/reproductive phase of these bat populations was also found to coincide with the period during which the caves remain under the highest anthropogenic pressure. In the present study several aspects which could threatened the existences of the cave bats have been noted and proper strategy to re-establish their populations have been discussed by maintaining more or less the tourist pressure intact in the caves.

BLEHERT (David S.), 2011. Fungi and Emerging Infectious Disease: Bat White-nose Syndrome. Slide show on G. d, soil, and WNS transmission, November 2011.

BOPAGE (Malaka M.), WEWALWALA (Krishan), KRVAVAC (Milivoje), JOVANOVIĆ (Olga), SAFAREK (Goran) & PUSHPAMAL (Vishan), 2011. Species diversity and threat status of amphibians in the Kanneliya Forest, lowland Sri Lanka. *Salamandra* 47(3, August 20):173-177. http://www.salamandra-journal.com/index.php?option=com_docman&Itemid=72

BORDERIE (F.), ALAOU-SEHMER (L.), RAOUF (N.), BOUSTA (F.), ORIAL (G.), RIEFFEL (D.) & ALAOU-SOSSÉ (B.), 2011. UV-C irradiation as a tool to eradicate algae in caves. *International Biodeterioration & Biodegradation* 65(4, July):579-584. [DOI:](#)

<http://dx.doi.org/10.1016/j.ibiod.2011.02.005>. ABS: Algal proliferation has commonly been reported to occur on monuments, such as crypts, churches, and caves, as soon as artificial lighting is used. In this work we study the effects of UV-C irradiation on algae collected in different caves in Dordogne (southwest of France). First, the effect of UV-C irradiation was tested on algal cell suspensions during increasing exposure times. After treatment, the photosynthetic capacity was assayed using a polarometric method, and algal cell viability was then estimated using a Trypan blue test after a rest period of 15 h. UV-C irradiation was then studied on algal cells cultivated on a solid support consisting of pieces of calcareous stone. Drops of concentrated algal cells were inoculated on stone and exposed to UV-C radiation for 3, 6, or 9 h. After this irradiation, half of the samples were submitted to a high white light intensity (1400 $\mu\text{mol m}^{-2} \text{s}^{-1}$ of photosynthetically active radiation, PAR) for 6 h while the other half were incubated in the culture room. Subsequently, algal macroscopic parameters such as covering rate and colonized area were measured by macro photography. Both experiments led to the conclusion that UV-C irradiation has deleterious effects on photosynthetic parameters and growth of algal cells. KW: Algae, Eradication, UVC, Photosynthetic activity, Pigmentation, Survival rate, Macroscopic parameters.

BOROWSKY (Betty), 2011. Responses to light in two eyeless cave dwelling Amphipods (*Niphargus ictus* and *Niphargus frassianus*). *Journal of Crustacean Biology* 31(4, October):613-616. [DOI:](#)

<http://dx.doi.org/10.1651/10-3450.1>. ABS: Two amphipod species, *Niphargus ictus* and *N. frassianus*, which are endemic to Frassasi Caves, Italy, possess morphological features typical of most troglolithic species. Most notably they lack eyes. Although cave waters flow directly into the adjoining Sentino River and *N. frassianus* is found within two meters of the resurgence, neither species is present at or further outside the mouth of the cave, which raises the question of how they avoid leaving the cave. It was hypothesized that these animals might be able to detect light, and could use light cues to remain inside the cave. Individuals of both species exhibited greater activity levels in the presence of bright vs. low light levels. Neither species exhibited the dorsal light reflex, but both showed weak negative phototaxis when exposed to bright light directed at them from above and below. *N. frassianus*, tested in an apparatus that permitted them to travel freely between bright or a low lighted areas, demonstrated negative phototaxis. The results show that both species can detect light, and suggest light cues may be utilized to remain in the caves. KW: Amphipods, cave behavior, *Niphargus*, phototaxis, troglolite.

BOUCHARD (P.), BOUSQUET (Y.), DAVIES (A. E.), ALONSO-ZARAZAGA (M. A.), LAWRENCE (J. F.), LYAL (C. H. C.), NEWTON (A. F.), REID (C. A. M.), SCHMITT (M.), ŚLIPINŃSKI (S. A.) & SMITH (A. B. T.), 2011. Family-group names in Coleoptera (Insecta). *ZooKeys* 88(4.IV):1-972, Special issue. [DOI:](#) <http://dx.doi.org/10.3897/zookeys.88.807>.

BOYLES (Justin G.), 2011. Testimony on "Why we should care about Bats: Devastating impact White-Nose Syndrome is having on one of nature's best pest controllers". June 24, 2011.

BOYLES (Justin G.), CRYAN (Paul M.), McCracken (Gary F.) & KUNZ (Thomas H.), 2011. Economic importance of bats in agriculture. *Science* 332(6025, April 1):41-42. [DOI:](#) <http://dx.doi.org/10.1126/science.1201366>.

BRAD (Traian), ANDRUȘ (Suzana), POP-SUGAR (Diana), ȘANDOR (Mignon Severus) & MUNTEAN (Vasile), 2011. Microbial activity in caves from Padurea Craiului Mountains (NW Romania). *Studia Universitatis Babeș-Bolyai Biologia* 56(1, June):99-105. SUM: Microorganisms stand at the basis of every food web in subsurface environments. We report here the presence and abundance of air and soil microorganisms isolated from three caves in Pădurea Craiului Mountains (NW Romania). We determined the density of aerobic heterotrophic bacteria and various microbial physiological groups (i. e. iron reducing bacteria, ammonifying bacteria, denitrifying bacteria and staphylococci) in air and soil samples obtained from the three caves. The largest density of aerobic heterotrophic bacteria was detected in the atmosphere of Peștera de la Vadu Crișului, a cave most visited by the tourists, and the smallest in that of Peștera cu Apă din Valea Leșului, a cave that is rather inaccessible to regular tourism. The entrance zone of all three caves contained more air microorganisms than the median and profound zone of these caves. Iron-reducing bacteria, ammonifying and denitrifying bacteria were present in the atmosphere of all three caves. No staphylococci were detected in the air of the three caves. The soil microorganisms prevailed in large number in Peștera de la Vadu Crișului, while their smallest density was registered in Peștera cu Apă din Valea Leșului. The ammonifying and denitrifying bacteria dominated the soil microbial community in all three caves. The density of aerobic heterotrophic bacteria was largest in Peștera de la Vadu Crișului, while this cave contained the smallest abundance of iron-reducing bacteria. The largest density of iron-reducing bacteria was instead registered in Peștera cu Apă din Valea Leșului. KW: Air and soil microorganisms, cave, Pădurea Craiului Mountains.

BRAKEFIELD (Paul M.), 2011. Evo-devo and accounting for Darwin's endless forms. *Philosophical Transactions of the Royal Society, B, Biological Sciences*, 366(July 27):2069-2075. [DOI:](#)

<http://dx.doi.org/10.1098/rstb.2011.0007>. BL: Cf p. 2071-2072, "Similarly, the sorts of modifications that are involved when organs are lost are being increasingly revealed, for example, in research on blind cave fish".

BRON (James E.), FRISCH (Dagmar), GOETZE (Erica), JOHNSON (Stewart C.), LEE (Carol Eunmi) & WYNGAARD (Grace A.), 2011. Observing copepods through a genomic lens. *Frontiers in Zoology* 8(1):22, 15 p. DOI: <http://dx.doi.org/10.1186/1742-9994-8-22>. BL: Cf p. 2, "Some species of Copepods have escaped traditional aquatic habitats, and live in rain forest canopies, leaf-litter, hot springs, between sand grains, in hyper-saline waters (~200 ppt) and in caves, as well as in symbiotic associations with other animal and plant species"; p. 12, "This single taxon has evolved into a diverse group with multiple convergent instances of the evolution of parasitic associations, a transition from benthic to pelagic life-styles, and invasions into extreme habitats (deep ocean, caverns, polar regions)".

BROOKS (R. T.), 2011. Declines in summer bat activity in central New England 4 years following the initial detection of white-nose syndrome. *Biodiversity and Conservation*, Online First™, 27 January 2011. DOI: <http://dx.doi.org/10.1007/s10531-011-9996-0>. ABS: White-nose syndrome (WNS) was first reported in a hibernating bat population in central New York State in February 2006. Since 2006, WNS has been reported from bat hibernacula across much of eastern United States and adjacent Canada and has been associated with a dramatic decline in the populations of hibernating bats in the northeastern U. S. We are only beginning to discover how these declines are manifest in changes in summer bat abundance and activity at local scales. A 3-year (2004-2006) acoustic survey showed that the forested watershed of the Quabbin Reservoir in central Massachusetts supported an abundant and species-rich summer bat community. In 2010, 4-years following the initial occurrence of WNS, a re-survey of the same habitats and sites found a 72% reduction in bat activity on the watershed. This is the identical rate of decline reported from cave hibernacula surveys (73%). This decline in summer activity levels is most likely a consequence of WNS-caused mortality. The impacts of population losses of this magnitude of a once widespread and abundant taxa are unknown but are presumed to be ecologically significant. KW: Acoustic survey, AnaBat, *Myotis*, Summer activity, White-nose syndrome.

BROOKS (Steven J.) & LLOYD MILLS (Chris), 2011. Osmoregulation in Hypogean Populations of the Freshwater Amphipod, *Gammarus pulex* (L.). *Journal of Crustacean Biology* 31(2, May):332-338. DOI: <http://dx.doi.org/10.1651/10-3336.1>. ABS: The freshwater amphipod *Gammarus pulex* is widely distributed in freshwater streams and rivers of Europe. This amphipod also has isolated hypogean populations, which are transparent in appearance, suggestive of adaptation to their cave environment. Since cave habitats are often food limited, physiological adaptations have been observed that reduce the energy expenditure of cave organisms. Osmoregulation is an energetically expensive mechanism that allows gammarids to survive in fresh water. This study tested the hypothesis that differences in osmoregulation existed between hypogean and epigeal populations of *G. pulex*. The osmoregulatory parameters measured were haemolymph cation concentrations, water and sodium fluxes and gill Na⁺/K⁺-ATPase activity. The hypogean *G. pulex* had significantly lower haemolymph sodium and potassium concentrations, but had a significantly higher haemolymph ammonium concentration than the epigeal *G. pulex*. The low food availability in the hypogean environment was considered to be the underlying cause for these differences in haemolymph ion concentrations. KW: Amino acids, ammonia, caves, *Gammarus pulex*, Na⁺/K⁺-ATPase, sodium.

BRUNO (M. C.) & COTTARELLI (V.), 2011. Proposal of *Fiersiphontina* gen. nov., redescription of *Fiersiphontina sensillata* comb. nov., and new data on the distribution of *Spiniferaphonte* (Copepoda, Harpacticoida, Laophontidae). *Zootaxa* 2809(April 5):1-19, 9 pl., 18 r  f. ABS: The taxonomic position and original description of *Laophontina sensillata* Wells & Rao, 1987 are reviewed based on specimens collected from the interstitial fauna of littoral coral sands of several islands of the Philippines and New Caledonia, and the species is designated as the type species of *Fiersiphontina* gen. nov. The new genus is proposed based on the total loss of sexual dimorphism in the P3 and P4 exopods, and the sexual dimorphism in P2 exopod. *Fiersiphontina* is highly adapted to the littoral interstitial habitat of coral sandy beaches, and is related to *Laophontina*

Norman & T. Scott, 1905, *Wellsiphontina* Fiers, 1991 and *Spiniferaphonte* Gheerardyn & Fiers, 2007. The shared characteristics that indicate a strong affinity of *Fiersiphontina* to *Spiniferaphonte* are the robust, dorsally bent, and strongly sclerotised caudal seta V and the morphology of the genital field. The phylogenetic relationship of *Spiniferaphonte* and *Fiersiphontina* is also suggested by the analysis of the last ontogenetic phases of the species of the two genera. We re-describe here the adults of both sexes, describe the last three copepodid stages of *Fiersiphontina sensillata* (Wells & Rao, 1987) comb. nov., and provide notes on the biogeography of the four related genera, and on the ecology of *Fiersiphontina* and *Spiniferaphonte*. KW: Eastern Pacific, new genus, marine interstitial, coral degradation zone. <http://www.mapress.com/zootaxa/list/2011/2809.html>

BUCCI (Melanie), PETRYSZYN (Yar) & KRAUSMAN (Paul R.), 2011. Bat Occurrence and use of Archaeological Sites at Three National Monuments in Central Arizona. *Journal of the Arizona-Nevada Academy of Science* 43(1, September):1-5. DOI: <http://dx.doi.org/10.2181/036.043.0101>. ABS: Many of the issues archaeologists are confronted with are similar to those encountered by natural resource biologists including increased urbanization and industrialization. We investigated bat use of archaeological structures at Montezuma Castle (i. e., Montezuma Castle Unit and Montezuma Well Unit), Tonto, and Tuzigoot National Monuments, Arizona to determine the impact of bats on archaeological structures. Archaeological sites were checked for bats or bat sign (i. e., guano or urine stains) and recommendations were made regarding bat use of the archaeological sites at each of the monuments. Guano was found in all the archaeological sites checked at Montezuma Castle National Monument. We found ≤3 individuals of two species day roosting, and approximately 40 individuals of seven species night roosting in the five-story cliff dwelling at Montezuma Castle Unit. A maternity colony of Townsend's big-eared bats (*Corynorhinus townsendii*) was roosting in Swallet Cave at Montezuma Well Unit. Bats used the crevices in the rock face above the cliff dwellings for roosting at Tonto National Monument. We found small amounts of guano in the tower room of the pueblo at Tuzigoot National Monument. Bats were not causing damage to the archaeological structures.

CALDER  N-FERN  NDEZ (G. M.), GIROTTI (J. R.) & JU  REZ (M. P.), 2011. Cuticular Hydrocarbons of *Triatoma dimidiata* (Hemiptera: Reduviidae): Intraspecific Variation and Chemotaxonomy. *Journal of Medical Entomology* 48(2, March):262-271. DOI: <http://dx.doi.org/10.1603/ME10141>. ABS: *Triatoma dimidiata* Latreille is a major vector of Chagas disease with an extensive geographic distribution from Central Mexico, through Central America, to northern South America. As a result of its variability in phenetic and genetic characters, disagreement concerning its taxonomic status has been raised. In this study, the cuticular hydrocarbon pattern of *T. dimidiata* populations from Mexico, Belize, Guatemala, Honduras, Costa Rica, and Colombia was analyzed by capillary gas chromatography coupled to mass spectrometry; linear discriminant analysis was used to help elucidate population structure. Vector populations segregated into five distinct groups; specimens from Yucatan Peninsula, together with those from Central Mexico, Central America, and Colombia corresponded to different *T. dimidiata* subspecies, a putative different species comprising insects from Belize, together with an isolated population collected at bat caves in Guatemala. The analysis revalidates the earlier division of *T. dimidiata* into three subspecies, *T. d. maculipennis*, *T. d. dimidiata*, and *T. d. capitata*; and an additional subspecies and a distinct species are proposed. KW: *T. dimidiata*, taxonomy, cuticular hydrocarbons.

CAMACHO (A. I.), DORDA (B. A.) & REY (I.), 2011. Identifying cryptic speciation across groundwater populations: first COI sequences of Bathynellidae (Crustacea, Syncarida) [Divergencia gen  tica en especies cr  pticas de agua subterr  nea: primeras secuencias COI obtenidas de la familia Bathynellidae (Crustacea, Syncarida, Bathynellacea)]. *Graellsia* 67(1, Junio):7-12. DOI: <http://dx.doi.org/10.3989/graellsia.2011.v67.031>. ABS: The biodiversity of groundwater fauna remains poorly known and understood. Groundwater biodiversity studies are strongly affected by habitat inaccessibility and taxonomic crisis. The objective of this work

was to investigate levels of genetic divergence across populations of Bathynellacea, a small crustacean group that lives exclusively in groundwater, in order to evaluate the extent of cryptic speciation in morphologically constrained clades. Partial sequences of cytochrome oxidase I (COI) have been obtained, for the first time in Bathynellidae. Specimens analyzed of the genus *Vejdovskybathynella* were obtained from six populations morphologically assignable to a single species; all of them are located in different areas of one of the largest karst systems (110 km of galleries topographed) known in Spain. The analyses of molecular data demonstrate the presence of three highly divergent genetic units, possibly corresponding to undescribed new species. The results of this study provide the first molecular data that complement morphological knowledge in order to address phylogenetic studies to try to resolve the relations between genera and species of the Bathynellidae family. We conclude that the evolutionary scenario of this special group of subterranean crustaceans cannot be revealed only by using morphological information due to the presence of very old lineages of cryptic species, as has been brought to light with the molecular data obtained here. KW: Groundwater fauna, COI, cryptic species, Bathynellacea, Spain. RES: La biodiversidad de la fauna de las aguas subterr  neas sigue siendo poco conocida. Los estudios de diversidad biol  gica de las aguas subterr  neas se ven negativamente afectados por la inaccesibilidad del h  bitat y la crisis taxon  mica. El objetivo de este trabajo es estudiar los niveles de divergencia gen  tica de poblaciones de Bathynellacea, un peque  o grupo de crust  ceos que viven exclusivamente en las aguas subterr  neas, para evaluar la extensi  n de la especiaci  n cr  ptica en clados morfol  gicamente constre  idos. Las secuencias parciales de citocromo oxidasa I (COI) se han obtenido, por primera vez, de varios ejemplares de la familia Bathynellidae. Los ejemplares analizados del g  nero *Vejdovskybathynella* proceden de seis poblaciones, morfol  gicamente asignables a una   nica especie, de uno de los sistemas k  rsticos m  s grandes de Espa  a (110 km de galer  as topografiadas). El an  lisis de datos moleculares demuestra la presencia de tres unidades con elevada divergencia gen  tica, dos de ellas posiblemente correspondientes a nuevas especies sin describir. Los resultados de este estudio proporcionan los primeros datos moleculares que permiten complementar el conocimiento morfol  gico para abordar estudios filogen  ticos que ayuden a resolver las relaciones de parentesco de las especies de diferentes g  neros de la familia Bathynellidae. Podemos concluir que el escenario evolutivo de este grupo de crust  ceos subterr  neos no se puede revelar s  lo con informaci  n morfol  gica debido a la presencia de linajes muy antiguos de especies cr  pticas que parecen salir a la luz s  lo con datos moleculares como los obtenidos en este trabajo. PC: Fauna acu  tica subterr  nea, COI, especies cr  pticas, Bathynellacea, Espa  a.

CAMPBELL (Joshua W.), WOODS (Maghan), BALL (Hannah L.), PIRKLE (Richard S.), CAREY (Vanessa) & RAY (Charles H.), 2011. Terrestrial macroinvertebrates captured with a baited ramp-pitfall trap from five limestone caves in North Alabama and Georgia (USA) and their association with soil organic matter. *Journal of Natural History* 45(43/44, November):2645-2659. DOI: <http://dx.doi.org/10.1080/00222933.2011.597884>.

ABSTRACT: Abundance and species richness of terrestrial cave invertebrates are not well known but are thought to be constrained by nutrient (food) supplies. A standard sampling procedure for collecting cave invertebrates does not exist. The majority of cave systems in the southeastern USA (e. g. Alabama and Georgia) have not been extensively sampled for invertebrates. We tested a baited ramp-pitfall trap for collecting terrestrial invertebrates from caves and investigated whether macroinvertebrate abundance and species richness follow total organic matter (TOM) levels from cave soils. In 14-day sampling periods, we captured 21204 invertebrates from 14 orders comprising at least 44 species from five caves in north Alabama and Georgia. Diptera was the most frequently captured order, comprising 18 species and over 91% of our captures. Overall, our traps were successful at sampling terrestrial invertebrates from caves; however, species richness and abundance did not always correlate with TOM concentration. KW: Caves, Alabama, Georgia, invertebrates, organic matter, pitfall trap.

CAMPOS-FILHO (Ivanklin Soares) & ARAUJO (Paula Beatriz), 2011. Two new troglobitic species of Scleropactidae (Crustacea: Isopoda: Oniscidea) from Par  , Brazil. *Nauplius* 19(1):28-39. DOI: <http://www.crustacea.org.br/index.php?id=3&subid=3>

CARABAJAL M  RQUEZ (Emilio), GARC  A CARRILLO (Jose) & RODR  GUEZ FERN  NDEZ (Fabriciano), 2011. Aportaciones al cat  logo de pseudoscorpiones de Andaluc  a (Espa  a) (Arachnida, Pseudoscorpiones). 1. *Bolet  n de la Sociedad Entomol  gica Aragonesa* 48:115-128. ABS: Several new species of cave-dwelling Pseudoscorpiones from the Spanish administrative region of Andaluc  a are described and compared with the geographically and morphologically closest species.

CARDOSO (Giovanna M.), BUENO (Alessandra A. de P.) & FERREIRA (Rodrigo L.), 2011. A new troglobiotic species of *Hyaella* (Crustacea, Amphipoda, Dogielinotidae) from Southeastern Brazil. *Nauplius* 19(1):17-26. DOI: <http://www.crustacea.org.br/index.php?id=3&subid=3>

CARLES-TOLR   (Miguel) & P  REZ (Toni), 2011. Nota breve: Algunas d  pteros capturados por el G. E. V. en cuevas del Sur Peninsular (Espa  a) (Diptera: Dixidae, Heleomyzidae y Sphaeroceridae). *Monograf  as Biospeleol  gicas* 6:3. RES: Se citan algunas especies de d  pteros capturadas por el G. E. V. en cavidades del sur Peninsular (Espa  a).

CARUSO (D.) & BOUCHON (D.), 2011. *Armadillidium virgo* n. sp. from caves in southeastern Sicily: Is it a parthenogenetic species? (Crustacea, Isopoda, Oniscidea). *Italian Journal of Zoology* 78(1):96-100. DOI: <http://dx.doi.org/10.1080/11250003.2010.490792>. ABS: We describe and illustrate a new species of *Armadillidium* from Sicily, *A. virgo* n. sp., collected in two small caves in the Climiti Mountains on the Iblean Plateau (southeastern Sicily, Italy). Of the ~200 specimens collected thus far, all are females. We compared this putative new species to *A. aelleni* Caruso & Ferrara found in some Maltese caves, and they seem to be closely related. KW: Taxonomy, new species, *Armadillidium*, Oniscidea, cave fauna, Sicily.

CARVALHO (Gustavo Mayr de Lima), BRAZIL (Reginaldo P.), SANGUINETTE (Cristiani C.) & ANDRADE FILHO (Jos   Dilermando), 2011. Description of *Evandromyia spelunca*, a new phlebotomine species of the *cortezzii* complex, from a cave in Minas Gerais State, Brazil (Diptera: Psychodidae: Phlebotominae). *Parasites & Vectors* 4:158. DOI: <http://dx.doi.org/10.1186/1756-3305-4-158>.

ABSTRACT: Background: The cave fauna of the Brazil is poorly documented, and among the insects those live or frequent caves and their adjacent environments phlebotomine sand flies call for special attention because several species are vectors of pathogens among vertebrates hosts. A new species of sand fly from Minas Gerais is described based in females and males collected in a cave of the municipality of Lassance. Results: The morphological characters of the new species permit to include in the *Evandromyia* genus, *cortezzii* complex. This complex consists of three species: *Evandromyia corumbaensis* (Galati, Nunes, Oshiro & Rego, 1989), *Evandromyia cortezzii* (Brethes, 1923) and *Evandromyia sallesi* (Galvao & Coutinho, 1940). Conclusions: The new species can be separate from the others of the *cortezzii* complex through morphological characters of the male terminalia and female spermathecae.

CARVALHO (Gustavo Mayr de Lima), DE VASCONCELOS (F. B.), DA SILVA (D. G.), BOTELHO (H. A.) & ANDRADE FILHO (Jos   Dilermando), 2011. Diversity of Phlebotomine Sand Flies (Diptera: Psychodidae) in Ibitipoca State Park, Minas Gerais, Brazil. *Journal of Medical Entomology* 48(4, July):764-769. DOI: <http://dx.doi.org/10.1603/ME10258>.

ABSTRACT: Leishmaniasis is a complex of zoonotic diseases that are endemic to many Brazilian states. They are transmitted to the vertebrates by the bite of the hematophagous female sand fly (Diptera: Psychodidae) vectors. Despite the increasing occurrence of visceral and cutaneous leishmaniasis cases in large urban centers, their transmission continues to occur primarily in a wild environment and may be associated with

- professional activities, ecotourism activities, or both. This study investigates the ecological parameters of the sand flies present in Ibitipoca State Park, Minas Gerais, Brazil. During 2009, systematic collections of sand flies were made monthly using HP light traps installed at five sites, including three natural settings (a cave, riparian vegetation, and a rain forest), the tourist and researchers' accommodations, and a surrounding domestic livestock area. In total, 161 sand flies (seven species) were collected, the most abundant, particularly in the surrounding domestic livestock area, being *Lutzomyia (Psychodopygus) lloydi* (Antunes, 1937). Furthermore, a previously unidentified *Lutzomyia (Sciopemyia)* sp. was prevalent in the cave environment. There are no existing records of the occurrence of leishmaniasis in Ibitipoca State Park; however, the some species of the subgenus *Psychodopygus* are known vectors of *Leishmania* spp in Brazil. Hence, the presence of a species of this genus in areas surrounding the park may represent a risk to ecotourism and the local inhabitants. Our study shows the importance of regular monitoring of the various areas used by humans to determine the distribution and spread of sand fly vectors for preventive management to forestall potential risk to health and consequent effect on ecotourists. KW: Sand flies, biodiversity, conservation, ecotourism, leishmaniasis.
- CASALE (Achille) & MARCIA (Paolo), 2011.** Two new *Typhloreicheia* species from Sardinia and their biogeographical significance (Coleoptera, Carabidae, Scaritinae). *ZooKeys* 134:15-31. DOI: <http://dx.doi.org/10.3897/zookeys.134.1707>. ABS: *Typhloreicheia monacha* sp. n. and *Typhloreicheia ilianae* sp. n. are described from two caves of Central-Eastern Sardinia (Nuoro province): the Bue Marino cave and the Nurra 'e Pradu cave, respectively. Both caves are located in the part of the island where many highly specialised subterranean carabid beetles are localised. *Typhloreicheia monacha* is apparently related to two other species of the same area, i. e. *Typhloreicheia onnisi* Casale & Magrini, 2004 and *Typhloreicheia elegans* (Dodero, 1916); *Typhloreicheia ilianae* is closely related to *Typhloreicheia henroti* Jeannel, 1957, known from a cave near Dorgali. Relationships and diagnostic features among these taxa are discussed and illustrated, and a key for identification of the specialised subterranean *Typhloreicheia* species of Sardinia is provided. The hypothesis of adaptive radiation of *Reicheina* species in Sardinia, recently proposed by the senior author of this contribution, is further elaborated in light of new data. KW: Coleoptera, Carabidae, Scaritinae, *Typhloreicheia*, new species, Sardinia, adaptive radiation.
- CASTELLO (Miris), 2011.** Le briofite dell'area presso la Grotta Ercole (31-6VG, Carso triestino) [The bryophytes of the Ercole cave area (31-6VG, Trieste Karst)]. *Atti e Memorie della Commissione Grotte "Eugenio Boegan"* 43:85-101. RIAS: È stato effettuato uno studio sulla diversità briologica presso la Grotta Ercole (31-6VG), situata sul Carso triestino. Vengono riportate 36 specie di briofite, di cui 29 specie di muschi e 7 specie di epatiche. Per ogni specie vengono indicati l'elemento corologico, la distribuzione nell'area e note ecologico-stazionali. Aspetti floristici, biogeografici e vegetazionali della componente briologica dell'area vengono discussi. ABS: The bryophyte diversity of the area near the "Grotta Ercole" (31-6VG), in the Trieste Karst (Italy) was investigated. 36 species of bryophytes (29 mosses and 7 liverworts) are reported. For each species the chorological element and notes on ecology and distribution within the survey area are provided. Floristic, biogeographic and vegetational aspects of the bryophyte component of the area are discussed. <http://www.boegan.it/index.php?id=550>
- Centre de Coordination Ouest pour l'étude et la protection des chauves-souris (CCO), 2011.** Publications scientifiques reçues ou cataloguées en 2011 au Centre chauves-souris - Scientific publications received or catalogued at the Swiss bat center in 2011. Muséum d'Histoire naturelle, Genève, Suisse. Mars/March 2011. <http://www.ville-ge.ch/mhng/cco>.
- Centre de Coordination Ouest pour l'étude et la protection des chauves-souris (CCO), 2011.** Publications scientifiques reçues ou cataloguées en 2011 au Centre chauves-souris - Scientific publications received or catalogued at the Swiss bat center in 2011. Muséum d'Histoire naturelle, Genève, Suisse. Septembre/September 2011. <http://www.ville-ge.ch/mhng/cco>.
- CHATURVEDI (V.) & CHATURVEDI (S.), 2011.** Editorial: What is in a Name? A Proposal to Use Geomyces Instead of White Nose Syndrome (WNS) to Describe Bat Infection Caused by *Geomyces destructans*. *Mycopathologia* 171(4, April):231-233. DOI: <http://dx.doi.org/10.1007/s11046-010-9385-3>.
- CHELINI (Marie-Claire), WILLEMART (Rodrigo H.) & GNASPINI (Pedro), 2011.** Caves as a Winter Refuge by a Neotropical Harvestman (Arachnida, Opiliones). *Journal of Insect Behavior* 24(5, September):393-398. DOI: <http://dx.doi.org/10.1007/s10905-011-9264-x>.
- CHEN (H.-M.), ZHANG (F.) & ZHU (M.-S.), 2011.** Four new troglophilous species of the genus *Pholcus* Walckenaer (Araneae, Pholcidae) from Guizhou Province, China. *Zootaxa* 2922(June 17):51-59, 4 pl., 13 réf. ABS: Four new troglophilous *Pholcus* spiders from Guizhou Province, China, are diagnosed, described and illustrated under the names: *Pholcus anlong* sp. nov., *P. ceheng* sp. nov., *P. xingren* sp. nov. and *P. xingyi* sp. nov. This is the first report on cave-dwelling *Pholcus* species from Guizhou Province, China. KW: Taxonomy, Pholcidae, new species, cave, Guizhou. <http://www.mapress.com/zootaxa/list/2011/2922.html>
- CHINNASAMY (K.), PITCHAMUTHU (M.), DOSS (P. S.), MARIMUTHU (G.) & RAJAN (K. E.), 2011.** Genetic diversity and population structure of leaf-nosed bat *Hipposideros speoris* (Chiroptera: Hipposideridae) in Indian subcontinent. *African Journal of Biotechnology* 10(8, February 21):1320-1328. <http://www.academicjournals.org/AJB/contents/2011cont/21Feb.htm>
- COOPER (J. E.) & COOPER (M. R.), 2011.** Observations on the biology of the endangered stygobiotic shrimp *Palaemonias alabamiae*, with notes on *P. ganteri* (Decapoda: Atyidae). *Subterranean Biology* 8(2010, Published:11.III.2011):9-20. DOI: <http://dx.doi.org/10.3897/subtbiol.8.1226>. ABS: *Palaemonias alabamiae* is endemic to subterranean waters in northern Alabama. Its type locality is Shelta Cave, Madison County, and ostensibly conspecific shrimps have been found in Bobcat and two other caves. Pollution and other factors may have extirpated the shrimp from the type locality. In Shelta Cave the species is smaller than the shrimp in Bobcat Cave and *P. ganteri* in Mammoth Cave, Kentucky. Adult female *P. alabamiae* (s. s.) and *P. ganteri* are larger than males. Female *P. alabamiae* with visible oocytes or, rarely, attached ova, were observed from July through January in Shelta Cave. Each female there produces 8 to 12 large ova, whereas females of the population in Bobcat Cave produce 20 to 24 ova, and *P. ganteri* produces 14 to 33 ova. Plankton samples taken in Shelta and Mammoth caves yielded nothing identifiable as zoea or postlarvae. *Palaemonias alabamiae* and *P. ganteri* usually feed by filtering bottom sediments through their mouthparts, but both sometimes feed upside down at the water's surface. Although there is some overlap, the compositions of the aquatic communities in Shelta and Mammoth caves differ, and there are some major differences among the Alabama shrimp caves. The stygobiotic fish, *Typhlichthys subterraneus*, is a known predator on *P. alabamiae* in Shelta Cave. KW: Cave shrimps, *Palaemonias alabamiae*, *P. ganteri*.
- CORTINI PEDROTTI (Carmela) & ALEFFI (Michele), 2011.** Lista rossa delle Briofite del Trentino. *Studi Trentini di Scienze naturali* 88:5-27. BL: Cf p. 20, *Isopterygiopsis muelleriana*, grottes; p. 23, *Schistostega pennata*, grottes.
- COURTOIS (Jean-Yves), RIST (Delphine) & BENEUX (Grégoire), 2011.** *Les chauves-souris de Corse*. ISBN:978-2-84698-377-8, format:16x24 cm, 168 p. Albiana. MC: Naturalisme, Mammifères, faune. http://issuu.com/albiana/docs/chauves_souris_extrait?mode=embed&layo ut=http%3A%2F%2Fskin.issuu.com%2Fv%2Fdark%2Flayout.xml&showFlipBtn=true

  UR  IĆ (Bo  idar Petar M.),   UR  IĆ (S. B.),   UR  IĆ (Nina B.) & ILIĆ (B. S.), 2011. *Chthonius* (*Globochthonius*) *Medeonis* n. sp.: A new cave false scorpion from Montenegro. *Archives of Biological Sciences* 63(1):245-250. DOI: <http://dx.doi.org/10.2298/ABS1101245C>.

ABS: The pseudoscorpion sample from a cave in Montenegro has been studied. A new species, *Chthonius* (*Globochthonius*) *medeonis* n. sp. is described. A reanalysis of the type material of *Chthonius* (*Ephippiochthonius*) *polychaetus* Had  i supports its transfer to the subgenus *Chthonius* (*Globochthonius* Beier). The species studied is considered to be endemic to the Balkan Peninsula. The diagnostic characteristics of the analyzed taxon are thoroughly described or figured. Taxonomic interrelationships and geographic distribution are briefly discussed. KW: *Chthonius* (*Globochthonius*) *medeonis* n. sp., cave fauna, pseudoscorpions, endemism, Montenegro.

  UR  IĆ (Bo  idar Petar M.),   UR  IĆ (S. B.),   UR  IĆ (Nina B.), RADA (T.) & DIMITRIJEVIĆ (Rajko N.), 2011. On two new pseudoscorpions from Herzegovina. *Archives of Biological Sciences* 63(3):855-865. DOI: <http://dx.doi.org/10.2298/ABS1103855C>.

ABS: Two new endemic cave pseudoscorpion species from the Petropavlova Pe  ina Cave, village Bihovi, 6 km from Trebinje, Herzegovina, are presented, thoroughly described and illustrated. These are named *Chthonius* (*Globochthonius*) *petroupauli* n. sp. and *Roncus paulipetrou* n. sp. Their main morphometric characteristics and important diagnostic features are analyzed and compared to those of their phylogenetically closest congeners. KW: Pseudoscorpions, Chthoniidae, Neobisiidae, endemism, caves, Herzegovina.

  UR  IĆ (Bo  idar Petar M.), DIMITRIJEVIĆ (Rajko N.) &   UR  IĆ (Nina B.), 2011. A new cave Pseudoscorpion (Pseudoscorpiones: Chthoniidae): *Chthonius* (*Chthonius*) *lupinus* n. sp. from Bosnia-Herzegovina. *Archives of Biological Sciences* 63(2):499-505. DOI: <http://dx.doi.org/10.2298/ABS1102499C>.

ABS: A new cavernicolous pseudoscorpion pertaining to the genus *Chthonius* (*Chthonius*) C. L. Koch, from Herzegovina (Bosnia-Herzegovina) is erected. Its relations with close congeners are briefly discussed. The new species *Chthonius* (*Chthonius*) *lupinus* n. sp. is an endemic form presently known only from its type locality (Vu  ija pe  ina Cave, Mt. Leotar, nr. Trebinje, Herzegovina). KW: Pseudoscorpiones, Chthoniidae, *Chthonius* (*Chthonius*) *lupinus* n. sp., endemism, caves, Bosnia-Herzegovina.

  UR  IĆ (Bo  idar Petar M.), DIMITRIJEVIĆ (Rajko N.) &   UR  IĆ (Nina B.), 2011. *Neobisium boreense* sp. n. (Pseudoscorpiones: Neobisiidae), a New Endemic Species From East Serbia. *Acta zoologica bulgarica* 63(1):3-6.

ABS: The cave-dwelling forms of the genus *Neobisium* Chamberlin in Serbia belong to many phyletic lines, some less specialized and others highly adapted to cave life. In this study, a description of the troglomorphic *N. boreense* sp. n., from a cave in Stol Mt. (East Serbia), has been presented, with some details on its morphology, biogeographic traits, and interrelationships with phenetically close species. KW: Pseudoscorpiones, Neobisiidae, *Neobisium boreense* sp. n., evolution, biogeography, biospeleology, Mt. Stol, East Serbia. [http://www.acta-zoologica-bulgarica.eu/azb_en.php?q=63%20\(1\)](http://www.acta-zoologica-bulgarica.eu/azb_en.php?q=63%20(1))

  UR  IĆ (Bo  idar Petar M.), ILIĆ (B. S.), RADA (T.), MAKAROV (S. E.), TOMIĆ (V. T.) & DIMITRIJEVIĆ (Rajko N.), 2011. On two new cave-dwelling and relict pseudoscorpions of the genus *Chthonius* C. L. Koch (Chthoniidae, Pseudoscorpiones) from Bosnia. *Archives of Biological Sciences* 63(3):847-854. DOI: <http://dx.doi.org/10.2298/ABS1103847C>.

ABS: The pseudoscorpion sample from a cave in Bosnia has been studied. Two new species have been described herein: *Chthonius* (*Chthonius*) *protobosniacus* n. sp. and *C. (C.) kladanjensis* n. sp. Both taxa are considered endemic of Bosnia and the Balkan Peninsula. In this paper, diagnostic characters of the analyzed forms are thoroughly described and figured. Taxonomic interrelationship and geographic distribution are briefly discussed. KW: Pseudoscorpions, *Chthonius* (*Chthonius*)

protobosniacus n. sp., *C. (C.) kladanjensis* n. sp., cave fauna, endemism, Bosnia.

  UR  IĆ (Bo  idar Petar M.), RADA (T.), DIMITRIJEVIĆ (Rajko N.), MAKAROV (S. E.), MILIN  IĆ (M.) & PECELJ (M.), 2011. Two new pseudoscorpions from the un administered province of Kosovo and Croatia. *Archives of Biological Sciences* 63(1):235-244. DOI: <http://dx.doi.org/10.2298/ABS1101235C>.

  UR  IĆ (Bo  idar Petar M.), RADA (T.), MAKAROV (S. E.),   UR  IĆ (S. B.), ILIĆ (B. S.) & DIMITRIJEVIĆ (Rajko N.), 2011. A Cavernicolous pseudoscorpion of the Genus *Chthonius* (*Chthonius*) c. l. Koch from Dalmatia. *Archives of Biological Sciences* 63(2):493-497. DOI: <http://dx.doi.org/10.2298/ABS1102493C>.

ABS: A new cave-dwelling pseudoscorpion from the Badanj (or Vili  nica) Cave, nr. Sveti Filip i Jakov, Dalmatia (Croatia) is thoroughly described and illustrated. Its main morphometric characteristics and important diagnostic traits are analyzed and compared to those of its phenetically close congener *Chthonius* (*Chthonius*) *absoloni* Beier from Dalmatia. The new species is relict and endemic to the area studied. KW: Pseudoscorpions, Chthoniidae, *Chthonius* (*Chthonius*) *pristani* n. sp., endemism, cave-dweller, Dalmatia.

DATRY (Thibault), 2011. Lechuguilla (  tats-Unis, Nouveau Mexique). *  cho des Vulcains* 68(Avril 2011):98-102.

DE PORRAS (Mar  a Eugenia), MANCINI (Mar  a Virginia) & PRIETO (Aldo Ra  l), 2011. Modern pollen analysis in caves at the Patagonian steppe, Argentina. *Review of Palaeobotany and Palynology* 166(3/4, August):335-343. DOI: <http://dx.doi.org/10.1016/j.revpalbo.2011.06.006>.

ABS: Cave fossil records from the Patagonian steppe (Argentina) have been largely used as a source of archaeological and palaeoenvironmental information. Major uncertainties exist, however, regarding the degree to which the fossil pollen assemblages from caves reflect past environments because of the complex site formation processes and post-depositional bias. Studies within caves from other regions have demonstrated that the understanding of modern pollen taphonomy helps to recognise the record bias improving thus the inferences. The present study therefore aims to understand how modern plant communities are represented within two caves at the Patagonian steppe and to establish the modern pollen taphonomic processes. Cave pollen assemblages provided a good representation of the local vegetation indicating therefore that cave fossil pollen assemblages are a reliable source for inferring the past vegetation. However, the modern taphonomic analysis pointed out that cave pollen assemblages are not homogeneous but show spatial variability due to different factors. Vegetation distribution, physiognomy and pollination type, biotic transport and human disturbance were the major factors affecting the cave pollen assemblages whereas orientation and topographic position seemed not to be significant. Biotic transport caused unexpected deposition patterns while animal and human post-depositional disturbance the homogenization of pollen assemblages. Other factors such as the cave internal topography, morphology and microclimatic circulation might be determinant on floor pollen assemblages so should be further investigated. Highlights: Modern pollen taphonomic processes were studied at two Patagonian steppe caves, Argentina. Predominant pollen deposition pathways are airfall and biotic. Biotic pollen transport strongly alters pollen deposition patterns. Human and animal trample disturbance lead to the homogenization of cave pollen assemblages. Cave orientation and topographic position do not determine pollen deposition within these caves. KW: Pollen, caves, taphonomy, Patagonian steppe.

DEFAYE (Danielle), SU  AREZ-MORALES (Eduardo) & VON VAUPEL KLEIN (J. Carel), 2011. *Studies on Freshwater Copepoda: a Volume in Honour of Bernard DUSSART*. *Crustaceana Monographs* 16. ISSN: 1570-7024, ISBN13: 9789004181380.

DEL  GUE (Fr  d  ric), 2011. S  jour en Hongrie, jeudi 6 au 17 mai 2010. *  cho des Vulcains* 68(Avril 2011):113-117.

DELTACHEV (Christo C.), 2011. The faunistic diversity of cave-dwelling spiders (Arachnida, Araneae) of Greece:23-

32. **DOI:** <http://dx.doi.org/10.5431/aramit4004>. In: 25th European Congress of Arachnology, Alexandroupoli, Greece, 16-21 August 2009, Proceedings, edited by: Maria CHATZAKI, Theo BLICK & Oliver-David FINCH, *Arachnologische Mitteilungen* 40(January), ISSN 1018 - 4171. ABS: Until today, from Greek caves a total of 109 species of spiders belonging to 25 families are known. One species, the linyphiid *Porrhomma convexum* (Westring, 1861) was recorded here for the first time in Greece. The 109 species are distributed in caves of different geographic territories as follows: Thrace - 8 species, Macedonia - 18, Epirus - 1, Thessaly - 6, Central Greece - 3, Attiki-Saronic Islands - 24, Peloponnese - 15, Evoia-Vories Sporades - 1, Eastern Aegean Islands - 5, Cyclades - 3, Dodecanese - 6, Ionian Islands - 23, Crete - 47. The largest fraction of troglobite species were encountered mainly in the territories of Crete - 15 species (5 of which are anophthalmic), the Ionian Islands - 4, Thrace - 2 (both anophthalmic), the Attiki-Saronic Islands - 2 (both anophthalmic), the Peloponnese - 2 (one anophthalmic), and Macedonia, Thessaly, and the Cyclades - each with 2 species. The richness of the troglobitic spiders in these regions strengthens the assumption that they were major centres of speciation and evolution for the species of this group. According to their current distribution, the established 109 species can be classified into 12 zoogeographical categories, grouped into 4 complexes (widely distributed, European, Mediterranean, endemics). The largest number of species belong to the endemic complex (53.2%) and are also the most characteristic and reflect the local character of the cave-dwelling spiders. KW: Cave-spiders fauna, endemics, troglobites, zoogeography.
- DELTSHEV (Christo C.) & ČURČIĆ (Božidar Petar M.), 2011.** A new spider species *Harpactea complicata* Deltshv sp. nov. from caves of Serbia (Araneae: Dysderidae). *Zootaxa* 2782(March 3):34-38, 4 pl., 7 réf. <http://www.mapress.com/zootaxa/list/2011/2782.html>
- DELTSHEV (Christo C.), LAZAROV (Stoyan), NAUMOVA (M.) & STOEV (P.), 2011.** A survey of spiders (Araneae) inhabiting the euedaphic soil stratum and the superficial underground compartment in Bulgaria:33-46. **DOI:** <http://dx.doi.org/10.5431/aramit4005>. In: 25th European Congress of Arachnology, Alexandroupoli, Greece, 16-21 August 2009, Proceedings, edited by: Maria CHATZAKI, Theo BLICK & Oliver-David FINCH, *Arachnologische Mitteilungen* 40(January), ISSN 1018 -4171. ABS: In 2005 a team of Bulgarian zoologists started a project aiming to study the invertebrates inhabiting the deeper soil stratum (euedaphon) and the Superficial Underground Compartment (SUC) in Bulgaria. In the course of a four-year sampling, a total of 52 species of spiders were caught from 19 collecting sites and 9 geographical regions. They belong to the following families: Scytodidae (1), Segestriidae (1), Dysderidae (8), Nesticidae (1), Anapidae (1), Theridiidae (1), Linyphiidae (20), Agelenidae (3), Cybaeidae (1), Dictynidae (2), Amaurobiidae (2), Licozanidae (3), Corinnidae (1), Zodariidae (1), Gnaphosidae (5), and Salticidae (1). The family Anapidae, with the species *Zanagherella relictata* (Kratovich, 1935) is recorded from three sites in the Pirin and Slavyanka mountains, and this represents the first record of the family, genus and species in Bulgaria. In spite of the active investigations of the epigean and cave spiders in these regions over the years *Z. relictata* was not found and it seems it occurs only in deeper subterranean habitats and nowhere else. Comparative study of almost topotypic specimens of *Z. relictata* from Montenegro with those collected from Bulgaria showed no variation in the shape of palp and female vulvae. Until the true identity of *Z. apuliae* (Caporiacco, 1949) from Italy is revealed, it remains unclear whether *Z. relictata* and *Z. apuliae* are conspecific, as it remains unclear whether the older records of *Z. apuliae* from the Balkan Peninsula refer to this species or to *Z. relictata*. *Pelecopsis menzei* (Simon, 1884) (Linyphiidae) and *Scotolathys simplex* Simon, 1884 (Dictynidae) are also reported from Bulgaria for the first time, the latter being also new to FYR of Macedonia. A faunistic overview of the spiders found in these underground environments is made, along with remarks on the distribution and ecology of some rare and interesting species. The presence of cave-dwelling and superficial spiders in the sampled sites indicates that SUC and euedaphon are inhabited by different ecotypes, e. g. litter- (tanatostromic), soil- (edaphic) and cave- (troglobitic) which at some places co-occur. KW: Anapidae, subterranean environments, troglomorphy, *Zanagherella relictata*.
- DELTSHEV (Christo C.), VRENOSI (Blerina), BLAGOEV (Gergin A.) & LAZAROV (Stoyan), 2011.** Spiders of Albania - Faunistic and Zoogeographical Review (Arachnida: Araneae). *Acta zoologica bulgarica* 63(2):125-144. [http://www.acta-zoologica-bulgarica.eu/azb_en.php?q=63%20\(2\)](http://www.acta-zoologica-bulgarica.eu/azb_en.php?q=63%20(2))
- DEVRIESE (H.), 2011.** Quel est l'intrus? Les Spongiaires ou Porifères. Session 2011.
- D'HAESE (C. A.) & THIBAUD (J.-M.), 2011.** Description and phylogenetic position of a new *Willemia* species (Collembola: Hypogastruridae) from the littoral coast of Brazil. *Zootaxa* 2932(June 28):33-40, 2 pl., 42 réf. ABS: A new psammobiontic *Willemia* species from Brazil is described and illustrated: *W. zeppelini* sp. nov. The phylogeny for all the 43 species of the genus *Willemia* is proposed comprising the new species and 8 species not included in D'Haese (2000) work. The new species is well defined with a unique Ant. III organ and one hr chaeta per anal valve among other characters. *W. zeppelini* is sister group to the *buddenbrocki*-group. An identification key for all known species of the genus is provided. KW: Poduromorpha, new species, phylogeny, neotropics, littoral sand, identification key. <http://www.mapress.com/zootaxa/list/2011/2932.html>
- DIERKENS (M.), 2011.** À propos d'*Heteropoda belua* Jäger, Sparassidae (Araneae) troglophile de Bornéo. *Bulletin mensuel de la Société linnéenne de Lyon* 80(7/8, Septembre/Octobre):119-121.
- DILLMAN (C. B.), BERGSTROM (D. E.), NOLTIE (D. B.), HOLTSFORD (T. P.) & MAYDEN (R. L.), 2011.** Regressive progression, progressive regression or neither? Phylogeny and evolution of the Percopsiformes (Teleostei, Paracanthopterygii). *Zoologica Scripta* 40(1, January):45-60. **DOI:** <http://dx.doi.org/10.1111/j.1463-6409.2010.00454.x>. ABS: Cave animals have fascinated scientists for centuries, and clades consisting primarily of cave-adapted species are even more intriguing. The percopsiforms are an enigmatic group of fishes comprised of nine species in seven genera, with four species in three genera exhibiting characteristic troglomorphic features, such as a lack of pigmentation and eyes. Nucleotide characters presented here provide the first test of monophyly for both the Percopsiformes and Amblyopsidae with this character type and taxonomic completeness. Characters of ND2 support a monophyletic Percopsiformes and Amblyopsidae and further document phylogeographic subdivision in two stygobitic genera, *Amblyopsis* and *Typhlichthys*, in Amblyopsidae. Age estimates from time-calibrated branch lengths utilizing two independent intra-lineage fossils indicate that the ancestor to amblyopsids is Eocene in age, and that phylogeographic subdivision in both *Amblyopsis* and *Typhlichthys* occurred primarily in the Miocene. Interestingly, ancestral character state reconstruction for the amblyopsids strongly supports the re-evolution of eyes and body pigment. While certainly unconventional, but supported with this character set, the hypothesis provides continued challenge to Dollo's Law.
- DISNEY (R. H. L.) & CAMPBELL (J. W.), 2011.** Scuttle flies (Diptera: Phoridae) from caves in Alabama and Georgia, USA. *Subterranean Biology* 8(2010, Published:1.III.2011):65-67. **DOI:** <http://dx.doi.org/10.3897/subtbiol.8.1233>. ABS: Four species of scuttle fly are reported from caves in Alabama and Georgia. KW: Diptera, Phoridae, caves, new records, USA.
- DIXON (Groves B.) & ZIGLER (Kirk S.), 2011.** Cave-obligate biodiversity on the campus of Sewanee: The University of the South, Franklin County, Tennessee. *Southeastern Naturalist* 10(2, June):251-266. **DOI:** <http://dx.doi.org/10.1656/058.010.0206>. ABS: The southern Cumberland Plateau in Tennessee and Alabama has the greatest diversity of cave-obligate animals in the United States. The University of the South in Franklin County, TN is one of the largest private landholders on the southern Cumberland Plateau. Its 13000-acre campus has more than 30 caves and is underlain by more than 14 km of horizontal passageways.

We examined the biodiversity of cave animals on the campus at the species level and at the genetic level. Through a survey of seven caves on the campus, we identified 24 cave-obligate species, including two new county records. This total accounts for half of the cave-obligate species reported for Franklin County. For our genetic analysis, we selected six diverse taxa (two millipedes, a beetle, a fly, an aquatic isopod, and a spider) that were collected from multiple caves, and compared their mitochondrial cytochrome oxidase I gene sequences. Across the six taxa we found: (1) low genetic diversity within caves (mean nucleotide diversity within caves across all taxa: 0.25%), (2) high genetic divergence between caves (divergence between caves within taxa ranged from 2.5%-10.9%, with two exceptions), and (3) little evidence for gene flow between caves (F_{ST} between caves within taxa >0.57 , with one exception). Thus, the campus supports tremendous species diversity, and even more remarkable genetic diversity within those species on a small geographic scale (no studied caves were >7 km apart). The divergence between cave populations and lack of gene flow between them that we observed across a range of taxa highlight the importance of cave conservation on a regional scale.

DIXON (Joseph W.), 2011. The role of small caves as bat hibernacula in Iowa. *Journal of Cave and Karst Studies* 73(1, April):21-27. DOI: <http://dx.doi.org/10.4311/jcks2010lsc0145>.

ABS: Small caves provide habitat for a variety of species, including bats. Past research on cave bats in Iowa has focused on a few large caves. Large caves are uncommon and represent only a portion of the known caves in the state. Since few hibernacula are protected in Iowa and no assessment of small caves has been done, bat census data were compared to cave morphology to determine the significance of small caves as hibernacula. Twelve years of census data (1998-2009) were reviewed for small caves (≤ 50.0 m in length) where hibernating bats had been documented. Four morphological features were compared against the data: entrance aspect, entrance size, cave length, and internal surface area. Student's t-test and Spearman rank correlation were used to test for relationships between the presence and abundance of each species and each of the four morphological features. The eastern pipistrelle occurred in 68% of the caves, and the little brown bat in 24%. Student's t-test showed a significant correlation with cave length for eastern pipistrelles. Spearman rank correlation showed a significant negative correlation with entrance aspect and significant positive correlations for cave length and internal surface area for eastern pipistrelles. The results are different from previous studies on larger Iowa caves, which showed big brown bats and little brown bats as the most abundant species. Eastern pipistrelles preferred larger caves with vertical entrances. However, large is a subjective term, and the results indicate that small caves are an important source of hibernacula for the eastern pipistrelle.

DJANASHVILI (Revaz A.) & BARJADZE (Shalva), 2011. A new species of the genus *Plutomurus* Yosii, 1956 (Collembola, Tomoceridae) from Georgian caves. *Journal of Cave and Karst Studies* 73(1, April):28-30. DOI: <http://dx.doi.org/10.4311/jcks2010lsc0147>.

ABS: A new species, *Plutomurus birsteini* sp. n., from Georgian caves is described and illustrated. It is similar to *Plutomurus baschkiricus* (Skorikow, 1899). Differences between the species are discussed. A key to the genus *Plutomurus* species found in the Caucasus is provided.

DLAUCHY (D.), TORNAL-LEHOCZKI (J.), SEDLÁČEK (I.), AUDY (M.) & PÉTER (G.), 2011. *Debaryomyces psychrosporus* sp. nov., a yeast species from a Venezuelan cave. *Antonie van Leeuwenhoek* 99(3, March):619-628. DOI: <http://dx.doi.org/10.1007/s10482-010-9534-1>.

ABS: Three yeast strains, which are phenotypically indistinguishable from *Debaryomyces hansenii*, were recovered from secondary mineral deposits (stalactites and stromatolites) obtained in the Crystal Eyes Cave, Roraima Tepui Mountain, Venezuela. Analyses of the D1/D2 domains of the LSU rRNA gene as well as the concatenated sequences of the nearly entire SSU rRNA gene, the ITS regions and the D1/D2 domains of the LSU rRNA gene confirmed the placement of these strains in the genus *Debaryomyces*, but relationship with all valid species of *D. hansenii* complex was distant. Based on the observed considerable sequence divergence the three strains are proposed as a new species, *D. psychrosporus* sp. nov., with the type strain NCAIM Y.01972^T (CBS 11845^T, NRRL Y-48723^T). KW: New yeast species, *Debaryomyces hansenii* complex, *Debaryomyces psychrosporus*, Parsimony network analysis.

DOCAMPO (S.), TRIGO (M. M.), RECIO (M.), MELGAR (M.), GARCÍA-SÁNCHEZ (J.) & CABEZUDO (B.), 2011. Fungal spore content of the atmosphere of the Cave of Nerja (southern Spain): Diversity and origin. *Science of the Total Environment* 409(4, January 15):835-843. DOI: <http://dx.doi.org/10.1016/j.scitotenv.2010.10.048>.

ABS: Fungal spores are of great interest in aerobiology and allergy due to their high incidence in both outdoor and indoor environments and their widely recognized ability to cause respiratory diseases and other pathologies. In this work, we study the spore content of the atmosphere of the Cave of Nerja, a karstic cavity and an important tourist attraction situated on the eastern coast of Malaga (southern Spain), which receives more than half a million visitors every year. This study was carried out over an uninterrupted period of 4 years (2002-2005) with the aid of two Hirst-type volumetric pollen traps (Lanzoni VPPS 2000) situated in different halls of the cave. In the atmosphere of the Cave of Nerja, 72 different spore types were detected during the studied period and daily mean concentrations of up to 282,195 spores/m³ were reached. Thirty-five of the spore types detected are included within Ascomycota and Basidiomycota (19 and 16 types, respectively). Of the remaining spore types, 32 were categorized within the group of so-called imperfect fungi, while Oomycota and Myxomycota were represented by 2 and 3 spore types, respectively. *Aspergillus/Penicillium* was the most abundant spore type with a yearly mean percentage that represented 50% of the total, followed by *Cladosporium*. Finally, the origin of the fungal spores found inside the cave is discussed on the basis of the indoor/outdoor concentrations and the seasonal behaviour observed. Research Highlights: Fungal spores are of great interest due to their high presence in the air. A four-year study was carried out inside a natural cave (Cave of Nerja, Spain). 72 spore types were detected, *Aspergillus/Penicillium* being the most abundant (50%). The origin of fungal spores was analysed by indoor/outdoor comparative studies. Most spores, excluding *Aspergillus/Penicillium*, could come from outside. KW: Aerobiology, Indoors, Cave, Fungal spores.

DOUANGBOUPHA (B.), BUMRUNGSI (S.), SATASOOK (C.), SOISOOK (P.), BU (S. S. H.), AUL (B.), HARRISON (D. L.), PEARCH (M. J.), THOMAS (N. M.) & BATES (P. J. J.), 2011. A new species of small *Hipposideros* (Chiroptera: Hipposideridae) from Myanmar and a reevaluation of the taxon *H. nicobarulae* Miller, 1902 from the Nicobar Islands. *Acta Chiropterologica* 13(1, June):61-78. DOI: <http://dx.doi.org/10.3161/150811011X578624>.

ABS: The taxon *Hipposideros nicobarulae* is elevated to a distinct species and an amended description is included. It is geographically restricted to the Nicobar Islands in the Andaman Sea where it has been found roosting in caves and deserted buildings. It is differentiated by size and external, cranial and dental morphology from *Hipposideros ater* from the Indian Subcontinent. Both taxa are distinguished from a new species, *Hipposideros* sp. nov., herein described from the Rakhine coast of western Myanmar, with referred material from Tanintharyi Division in southern Myanmar. In all cases, individuals were found roosting in human habitation. Information on the conservation status, distribution and ecology of the three species are included. KW: *Hipposideros* sp. nov., Myanmar, India, Nicobar Islands, Taxonomy, Distribution.

DRAGU (A.) & BORISSOV (I.), 2011. Low genetic variability of *Rhinolophus mehelyi* (Mehely's horseshoe bat) in Romania. *Acta Theriologica*, Online FirstTM, 6 May 2011. DOI: <http://dx.doi.org/10.1007/s13364-011-0043-z>.

ABS: *Rhinolophus mehelyi* (Mehely's horseshoe bat) is a vulnerable species with an increasingly fragmented distribution. In Romania, populations of *R. mehelyi* have experienced a dramatic decline over the past 50 years, and the current population size is estimated at only 100 adult individuals inhabiting almost exclusively the Limanu cave. In the present study, we investigated the genetic consequences of population decline for the viability of the remaining population of *R. mehelyi* in Romania. We sequenced and analyzed a 359-bp fragment of the mitochondrial control region from the only known Romanian population and compared it with two geographically close colonies from Bulgaria. A single haplotype was found in the Romanian population compared to 10

- in the Bulgarian population, suggesting genetic isolation. KW: Control region, Genetic variability, *Rhinolophus mehelyi*, Genetic isolation.
- DUBOUÉ (E. R.), KEENE (A. C.) & BOROWSKY (R. L.), 2011.** Evolutionary Convergence on Sleep Loss in Cavefish Populations? *Current Biology* 21(8, April 26):671-676. DOI: <http://dx.doi.org/10.1016/j.cub.2011.03.020>. SUM: Patterns of sleep vary widely among species [[1], [2], [3] and [4]], but the functional and evolutionary principles responsible for this diversity remain unknown. The characin fish, *Astyanax mexicanus*, has eyed surface and numerous blind cave populations [5]. The cave populations are largely independent in their origins, and the species is ideal for studying the genetic bases of convergent evolution [[5], [6] and [7]]. Here we show that this system is also uniquely valuable for the investigation of variability in patterns of sleep. We find that a clearly defined change in ecological conditions, from surface to cave, is correlated with a dramatic reduction in sleep in three independently derived cave populations of *A. mexicanus*. Analyses of surface × cave hybrids show that the alleles for reduced sleep in the Pachón and Tinaja cave populations are dominant in effect to the surface alleles. Genetic analysis of hybrids between surface and Pachón cavefish suggests that only a small number of loci with dominant effects are involved. Our results demonstrate that sleep is an evolutionarily labile phenotype, highly responsive to changes in ecological conditions. To our knowledge, this is the first example of a single species with a convergence on sleep loss exhibited by several independently evolved populations correlated with population-specific ecologies. Highlights: Blind Mexican Cavefish sleep much less than conspecific surface fish. Three cave populations converged independently on a sleep loss phenotype. Sleep phenotype in this species correlates with population-specific ecology.
- DUDIN (Georgi S.), GEORGIEV (Dilian G.) & STOYCHEVA (Slaveya B.), 2011.** Recent Vertebrate Animal Bones (Animalia: Vertebrata) from Yubileyna Cave (Rhodopes Mountain, South Bulgaria). *Ecologia Balkanica* 3(1):107-109. ABS: Excavations (area of 50 x 50 cm and 20 cm depth) at about 15 m from the cave entrance revealed various vertebrate fauna. As individual numbers the mammals and the frogs predominated as bone remains. All other taxa were with low percent of occurrence. The trogloneic species dominated than the trogloneic. Considering the cave characteristics and the taxonomical identity of the bones we proposed two main ways of bone accumulation in this cave in recent times. KW: Vertebrate faunal remains, bone findings, cave fauna, Yubileyna cave, Bulgaria.
- DUNGER (Wolfram) & SCHLITT (Bettina), 2011.** *Synopses on Palaearctic Collembola - Tullbergiidae. Soil Organisms* 83(1, April):168 p., 248 fig., 7 tab. http://www.senckenberg.de/root/index.php?page_id=1439. 8. BL: Voir: DUNGER (Wolfram) & SCHLITT (Bettina), Introduction:2-38.
- DUNGER (Wolfram) & SCHLITT (Bettina), 2011.** Introduction:2-38. In: DUNGER (W.) & SCHLITT (B.), *Synopses on Palaearctic Collembola - Tullbergiidae. Soil Organisms* 83(1, April):168 p., 248 fig., 7 tab. http://www.senckenberg.de/root/index.php?page_id=14400.
- EGGE (Jacob J. D.) & SIMONS (Andrew M.), 2011.** Evolution of venom delivery structures in madtom catfishes (Siluriformes: Ictaluridae). *Biological Journal of the Linnean Society* 102(1, January):115-129, 6 fig. DOI: <http://dx.doi.org/10.1111/j.1095-8312.2010.01578.x>.
- ELLIS (Martin), 2011.** The Caves of Satun. March 2011, 11 p.
- ELLIS (Martin), 2011.** The Caves of Chumphon. June 2011, 16 p.
- ENGEL (Joshua I.), HENNEN (Mary H.), WITT (Christopher C.) & WECKSTEIN (Jason D.), 2011.** Affinities of Three Vagrant Cave Swallows from Eastern North America. *The Wilson Journal of Ornithology* 123(4, December):840-845. DOI: <http://dx.doi.org/10.1676/11-021.1>. ABS: We analyzed the mitochondrial cytochrome b gene of three vagrant Cave Swallow (*Petrochelidon fulva*) specimens from Illinois, New York, and New Jersey and compared them to published sequences from across the breeding range of the species. All three specimens were assigned to the southwestern United States/Mexico subspecies (*P. f. pallida* group) on the basis of plumage coloration. Molecular results reveal that all three birds possess unique and novel mitochondrial haplotypes that are closely related to haplotypes from known *P. f. pallida* individuals. None of the three haplotypes from the vagrant individuals is within the monophyletic clade of haplotypes that corresponds to the Caribbean subspecies (*P. f. fulva*).
- ENGBRECHT (N. J.), LANNOO (S. J.), WHITAKER (J. O. Jr) & LANNOO (M. J.), 2011.** Comparative Morphometrics in Ranid Frogs (Subgenus *Nenirana*): Are Apomorphic Elongation and a Blunt Snout Responses to Small-bore Burrow Dwelling in Crawfish Frogs (*Lithobates areolatus*)? *Copeia* 2011(2, June):285-295. DOI: <http://dx.doi.org/10.1643/CG-10-075>. ABS: The subgenus *Nenirana* of North American ranid frogs encompasses Pickerel Frogs (*Lithobates palustris*), Crawfish Frogs (*L. areolatus*), Gopher Frogs (*L. capito*), and Dusky Gopher Frogs (*L. sevosus*). All four species inhabit caves, crevices, stump holes, and/or burrows when not in breeding wetlands. Crawfish Frogs obligately inhabit crayfish burrows as their primary retreat sites, and in this study we examine whether the deep, small-bore crayfish burrows used by Crawfish Frogs have influenced Crawfish Frog morphology. Specimens of all four species of *Nenirana* were radiographed and snout-urostyle length, maximum headwidth, head length, femur length, and tibiofibula length were measured from films. Our results suggest that if Crawfish Frog morphology is a response to life in burrows, it is due in part to having the size characteristic of being the largest member of the clade and in part through the shape characteristic of generally exhibiting an intermediate morphology between Pickerel Frogs and the two Gopher Frog species. Not all shape metrics, however, are intermediate; among *Nenirana*, Crawfish Frogs have the longest hindlimbs and the relatively bluntest snouts. Further, Crawfish Frogs exhibit positive allometry in headwidth, a reversal of the ancestral pattern exhibited by Pickerel Frogs. None of the morphological features of Crawfish Frogs fit neatly into known or predicted functional/morphological cause-and-effect relationships associated with burrow occupancy. It may be that the ranid body plan is generalized enough to permit Crawfish Frogs to inhabit, despite being unable to dig, deep small-bore burrows without undergoing major morphological changes.
- ENGEL (Annette Summers) & RANDALL (Kelli Willson), 2011.** Experimental Evidence for Microbially Mediated Carbonate Dissolution from the Saline Water Zone of the Edwards Aquifer, Central Texas. *Geomicrobiology Journal* 28(4):313-327. DOI: <http://dx.doi.org/10.1080/01490451.2010.500197>. ABS: Microbially induced carbonate dissolution was evaluated from sulfidic wells in the Edwards Aquifer, Texas. Filamentous biomass covers rock surfaces, with *Gammaproteobacteria* and *Epsilonproteobacteria* dominating the attached community, but novel *Alphaproteobacteria* dominating the planktonic community. Despite fluids being saturated with respect to calcite, experimental calcite from in situ microcosms had significantly greater mass loss when colonized. Moreover, neofomed gypsum crystals were observed on colonized surfaces where fluids were undersaturated with respect to gypsum. The results are similar to findings from shallow cave and karst environments, and highlight the underappreciated role of microbes in the modification of carbonate aquifers and reservoirs. KW: Subsurface microbiology, groundwater, biofilm, molecular ecology, carbonate dissolution.
- ESPINO DEL CASTILLO (Adriana), PAREDES-LEÓN (Ricardo) & MORALES-MALACARA (Juan B.), 2011.** Presence of intradermal chigger mite *Hannemania hylae* (Ewing, 1925) (Acari: Leuvenhoekiidae) in the trogloneic frog *Eleutherodactylus longipes* (Anura: Brachycephalidae) at Los Riscos Cave, Querétaro, Mexico. *International Journal of Acarology* 37(5, October):427-440. DOI: <http://dx.doi.org/10.1080/01647954.2010.525522>. ABS: For the first time, we report the presence of *Hannemania hylae* (Ewing) parasitizing the long-footed robber frog *Eleutherodactylus longipes*

- (Baird) in a cave environment in Queretaro State, Mexico. A morphological comparison was performed between *H. hylae* and its closest species *Hannemania bufonis* Loomis & Welbourn and *Hannemania monticola* Welbourn & Loomis. The main characters to separate these species are the size of ocular plate, the length of some scutal setae, and the shape and length of some tarsal setae of the legs I and II. We inspected 47 frogs, the prevalence of infestation was 23.4%, mean abundance was 1.8 mites per host, mean intensity 7.9 mites per infested host, and the range intensity was 1-30 mites. Larvae of *H. hylae* were only collected during the dry season. A brief discussion is provided about the period of larval stage on the host and seasonality is compared with similar studies. KW: Acari, Leeuwenhoekidae, *Hannemania*, Anura, *Eleutherodactylus*, Mexico.
- FAILLE (Arnaud) & BOURDEAU (Charles), 2011.** Une nouvelle espèce de Trechinae troglobie du versant sud des Pyrénées (Coleoptera, Carabidae, Trechinae) [A new species of troglobitic Trechinae from the southern slope of Pyrenees (Coleoptera, Carabidae, Trechinae)]. *Bulletin de la Société entomologique de France* 116(3):261-267. RÉSUMÉ: *Aphaenops (Aphaenops) fresnedai* n. sp., nouvelle espèce de Carabidae souterrain d'une grotte de haute altitude des Pyrénées de Huesca (Espagne), est décrite. Le seul exemplaire connu présente un certain nombre de caractères morphologiques particuliers, chétotaxie élytrale et conformation du labre notamment. Cette espèce est morphologiquement proche de *A. ochsi cabidochei* (Coiffait, 1959) et *A. valleti* Casale & Genest, 1986, deux espèces présentes dans la même région. SUM: *Aphaenops (Aphaenops) fresnedai* n. sp., a new species of cave Carabidae from a high altitude cave of Pyrenees of Huesca (Spain) is described. The single specimen known is characterized by some morphological characters, especially elytral chetotaxy and labrum conformation. This species is morphologically close of *A. ochsi cabidochei* (Coiffait, 1959) and *A. valleti* Casale & Genest, 1986, two species occurring in the same area. KW: Trechini, *Aphaenops*, taxonomy, new species, troglobitic, Spain.
- FAILLE (Arnaud), CASALE (Achille) & RIBERA (Ignacio), 2010.** Phylogenetic relationships of Western Mediterranean subterranean Trechini groundbeetles (Coleoptera: Carabidae). *Zoologica Scripta* 40(3, May):282-295. DOI: <http://dx.doi.org/10.1111/j.1463-6409.2010.00467.x>. ABS: Carabid beetles of tribe Trechini (Coleoptera) are one of the main groups of insects that colonized the subterranean environment. Many species of this group have developed similar morphological modifications related to the subterranean life, resulting in a characteristic *Aphaenops*-like phenotype that obscures their phylogenetic relationships (depigmented, blind, elongated body and appendages, narrow head and pronotum). We present here the result of a molecular study using a combination of nuclear (small ribosomal unit, large ribosomal unit) and mitochondrial (cox1, cyb, rnl, trnL, nad1) genes to investigate the phylogenetic placement of the highly modified subterranean genera of the tribe Trechini from the west Mediterranean area (France, Spain, Morocco and Sardinia). Our results confirm the multiple independent origin of troglomorphy among these genera, and reveal a pattern largely determined by geographical proximity. We discuss the validity of some groups proposed on the base of morphological features, and provide estimates of divergence between subterranean genera and other groups of Trechini, including epigeal species of the same area. We compare the estimated age for the origin of the main groups resulting from two different calibrations, using one the standard mitochondrial mutation rate (2.3% divergence per Myr) and the other the separation between Sardinia and mainland 33 Ma. Under the first scenario, the main groups of genera would have a late Miocene origin, with a subsequent colonization of north Africa at the Pliocene-Pleistocene boundary. The assumption that the main groups originated through vicariance due to the separation of the Sardinian plate in the Oligocene results in a Messinian origin of the north African subterranean taxa, and a global mitochondrial rate reduced to 1% divergence per Myr.
- FAHIMI (Hadi), YUSEFI (Gholam Hosein), MADJZADEH (Seyed Massoud), DAMANGIRE (Abbas Ali), SEHHATISABETE (Mohammad Ebrahim) & KHALATBARIB (Leili), 2011.** Camera traps reveal use of caves by Asiatic black bears (*Ursus thibetanus gedrosianus*) (Mammalia: Ursidae) in southeastern Iran. *Journal of Natural History* 45(37/38, October 1):2363-2373. DOI: <http://dx.doi.org/10.1080/00222933.2011.596632>.
- FAUBERT (Jean), GAGNON (Jean), BOUDIER (Pierre), ROY (Claude), GAUTHIER (Robert), DIGNARD (Norman), BASTIEN (Denis), LAPOINTE (Martine), DÉNOMMÉE (Nancy), PELLERIN (Stéphanie) & RHEAULT (Héloïse), 2011.** *Bryophytes nouvelles, rares et remarquables du Québec-Labrador*. Rapport hors série. Ministère des Ressources naturelles et de la Faune, Direction de la recherche forestière. 187 p. RÉSUMÉ: Des explorations botaniques réalisées au Québec au cours des dernières années, notamment dans les régions nordiques difficilement accessibles, ont permis d'affiner notre connaissance de la bryoflore de ce vaste territoire. De nouvelles informations sont présentées concernant 1 anthocérotes, 62 hépatiques, 4 sphaignes et 72 mousses.
- FERREIRA (Rodrigo Lopes), SOUZA (Maysa Fernanda V. R.), MACHADO (Ewerton Ortiz) & BRESCOVIT (Antonio Domingos), 2011.** Description of a new *Eukoenenia* (Palpigradi: Eukoeneniidae) and *Metagonia* (Araneae: Pholcidae) from Brazilian caves, with notes on their ecological interactions. *Journal of Arachnology* 39(3, December):409-419. DOI: <http://dx.doi.org/10.1636/Ha11-03.1>. ABS: Palpigradi comprises the most poorly known order within the Arachnida; hence, information regarding their biology and behavior is quite scarce. We document an interaction between a palpigrade of the genus *Eukoenenia* being preyed upon by a spider of the genus *Metagonia* in the Gruta do Vale, a cave in the municipal district of Felipe Guerra (Rio Grande do Norte, Brazil). The entire prey recognition and capture process by the *Metagonia* is described in full detail. Both species involved, *Eukoenenia potiguar* n. sp. and *Metagonia potiguar* n. sp., are also described. *Metagonia potiguar* n. sp. is the first Brazilian cave-dwelling *Metagonia* to be described. KW: Predation, taxonomy, morphology, Brazil, Neotropics.
- FERNANDES (C. S.), GREGATI (R. A.) & BICHUETTE (M. E.), 2011.** The first record of external abnormalities in the subterranean *Aegla marginata* Bond-Buckup & Buckup, 1994 (Crustacea: Decapoda: Aeglidae), from a karst area of Southeastern Brazil. *Subterranean Biology* 8(2010, Published:11.III.2011):33-38. DOI: <http://dx.doi.org/10.3897/subtbiol.8.1228>. ABS: The occurrence of a morphologically altered individual identified as *Aegla marginata* is reported in this note. The specimen was found in the subterranean environment, as part of wider bioespeleological study. The observed abnormalities consist mainly of deformities in abdominal epimera, pleopods, telson and uropods, which could result in difficulties for reproduction and escape from predators. Genetic or nutritional factors related to the scarce food supply observed in the cave environment are admitted as being the most probable cause of the deformities reported here. We emphasize the need of new studies in the area as well as efforts to preserve subterranean environment. KW: Anomura, abdominal deformities, nutritional factors, genetic factors, cave environment.
- FET (Victor), SOLEGLAD (Michael E.) & ZONSTEIN (Sergei L.), 2011.** The genus *Akrav* Levy, 2007 (Scorpiones: Akravidae) revisited. *Euscorpius* 134:1-49. <http://www.science.marshall.edu/fet/euscorpius/pubs.htm>
- FIGUEROA (Diego F.), 2011.** Two new Calanoid Copepods from the Galapagos Islands: *Pseudocyclops juanibali* n. sp. and *Pseudocyclops saenzi* n. sp. *Journal of Crustacean Biology* 31(4, October):725-741. DOI: <http://dx.doi.org/10.1651/10-3374.1>. ABS: Two new calanoid copepods, *Pseudocyclops juanibali* n. sp. and *Pseudocyclops saenzi* n. sp. are described from anchialine pools in the Galapagos Islands. *Pseudocyclops juanibali* n. sp. is similar to *P. australis*, *P. matthewsoni*, *P. simplex*, *P. pacificus*, and *P. latisetosus*. A deep cleft on the distal margin of the endopod of the left leg five of males separates these six species from all other *Pseudocyclops* likely forming a species group. *Pseudocyclops juanibali* differs from other members of this group in the shape and number of elements on the distal exopodal segment of the left leg five of males. *Pseudocyclops saenzi* n. sp. is most similar to *P.*

rubrocinctus and *P. steinitzi* but differs in the presence of a posterior seta on the basis of the leg five of females, a sclerotized seta on the exopod of the maxillule, and several differences in the shape and ornamentation of the leg five of males. A 569-base-pair region of the internal transcribed spacer 1 ribosomal DNA region (ITS-1) was amplified from specimens of *P. juanibali* and *P. saenzi*, and from specimens of *Pseudocyclops* that were morphologically identical to *P. juanibali* but from two different anchialine pools. The phylogenetic analysis of the ITS-1 region shows that *P. juanibali* and *P. saenzi* are genetically different from each other and, furthermore, that the specimens from the two other anchialine pools are genetically isolated from the former species, a finding that suggests cryptic speciation. The morphological and genetic evidence presented here, including confirmation of a close sibling species of *P. juanibali* from the Ryukyu Islands of Japan, demonstrate that vicariance and active migration are responsible for the observed distribution of species, with faunal exchange occurring between the Galapagos and the Caribbean and Western Pacific Oceans. However, although these copepods are able to cross the entire Pacific, such long-range migration is not the norm. They tend to have restricted distributions with minimal migration and gene exchange, even between habitats that are very close to each other such as the anchialine pools in the Galapagos. KW: Anchialine pools, Copepoda, cryptic species, Galapagos Islands, *Pseudocyclops*.

FLOREA (Lee J.), NOE-STINSON (Chasity L.), BREWER (Josh), FOWLER (Rick), KEARNS (B. Joe) & GRECO (Anthony M.), 2011. Iron Oxide and Calcite Associated with *Leptothrix* sp. Biofilms within an Estavelle in the Upper Floridan Aquifer. *International Journal of Speleology* 40(2, July):205-219. ABS: In Thornton's Cave, an Estavelle in west-central Florida, SEM, EDS, and XRD data reveal biofilms that are predominantly comprised of FeOOH-encrusted hollow sheaths that are overgrown and intercalated with calcite. Fragments of this crystalline biofilm adhere to the walls and ceiling as water levels vary within the cave. Those on the wall have a "cornflake" appearance and those affixed to the ceiling hang as fibrous membranes. PCR of DNA in the active biofilm, combined with morphological data from the tubes in SEM micrographs, point to *Leptothrix* sp., a common Fe-oxidizing bacteria, as the primary organism in the biofilm. Recent discoveries of "rusticles" in other Florida caves suggest that Fe-oxidizing bacteria may reside elsewhere in Florida groundwater and may play a role in the mobility of trace metals in the Upper Florida aquifer. SEM micrographs from two marble tablets submerged for five months, one exposed to microbial activity and a second isolated from microbial action, revealed no visible etchings or borings and very limited loss of mass. EDS data from the electron micrographs of the unfiltered tablet document the same FeOOH-encrusted hollow sheaths and similar deposits of calcite as seen in the "cornflakes". These results, combined with water chemistry data imply that the biofilm may focus or even promote calcite precipitation during low-water level conditions when CO₂ degasses from the cave pools. KW: Scanning electron microscopy, x-ray diffraction, electron diffraction spectroscopy, polymerase chain reaction; Thornton's Cave, Florida, geomicrobiology. <http://scholarcommons.usf.edu/ijs/vol40/iss2/11>

FLOT (Jean-Fran  ois) & STOCH (Fabio), 2011. A molecular perspective in the taxonomy of the genus *Niphargus* (Amphipoda, Niphargidae) in Italy. *New frontiers in Monitoring European Biodiversity: the role and importance of amphipod crustaceans*, Abstract Volume:39.

FORGET (F.), 2011. Syndrome du nez blanc: ouvrez l'  il! *L'  cho des Rhinos* 64(D  cembre 2010/Janvier 2011):9-10.

FORTI (Fabio), 2011. Seminario - "Salvaguardia del patrimonio biospeleologico". *Progressione* 57(April):161. <http://www.boegan.it/index.php?id=562>

FRANK (Andrew), 2011. Isolating Microsatellite Sequences for Development of Microsatellite Primers for Cave and Surface Amphipod *Gammarus minus*. Honors in Biology. Advisor: David CARLINI, PhD. American University. Washington, DC, Spring 2011, 23 p. ABS: Recent genetic studies of the cave and surface amphipod *Gammarus minus* have revealed hydrological differentiation of populations in the Karst geography of Virginia and West Virginia, as opposed to previously indicated. This indicates that cave populations are more closely related to their

neighboring above ground population rather than fellow cave populations. However, these genetic studies were not able to elucidate the fine scale geographical structure of these populations at the underground-aboveground interface. In this study, microsatellite containing DNA sequences are isolated de novo from *G. minus* genomic DNA using a selective hybridization technique. A number of genomic DNA fragments containing microsatellite repeats were isolated from a large pool of candidate fragments via sequencing of candidate fragments. These microsatellite containing genomic fragments serve as a starting point of the future primer design for a number of different *Gammarus minus* microsatellite loci.

Freshwater Biological Association (FBA), 2011. Course Programme 2011. Identification courses from the specialists. 8 p. <http://www.fba.org.uk/>

FRICKE (H.), HISSMANN (K.), FROESE (R.), SCHAUER (J.), PLANTE (R.) & FRICKE (S.), 2011. The population biology of the living coelacanth studied over 21 years. *Marine Biology* 158(7, July):1511-1522. DOI: <http://dx.doi.org/10.1007/s00227-011-1667-x>. ABS: Between 1986 and 2009 nine submersible and remote-operated vehicle expeditions were carried out to study the population biology of the coelacanth *Latimeria chalumnae* in the Comoro Islands, located in the western Indian Ocean. *Latimeria* live in large overlapping home ranges that can be occupied for as long as 21 years. Most individuals are confined to relatively small home ranges, resting in the same caves during the day. One hundred and forty five coelacanths are individually known, and we estimate the total population size of Grande Comore as approximately 300-400 adult individuals. The local population inhabiting a census area along an 8-km section of coastline remained stable for at least 18 years. Using LASER-assisted observations, we recorded length frequencies between 100 and 200 cm total length and did not encounter smaller-bodied individuals (<100 cm total length). It appears that coelacanth recruitment in the observation areas occur mainly by immigrating adults. We estimate that the mean numbers of deaths and newcomers are 3-4 individuals per year, suggesting that longevity may exceed 100 years. The domestic fishery represents a threat to the long-term survival of coelacanths in the study area. Recent changes in the local fishery include a decrease in the abundance of the un-motorized canoes associated with exploitation of coelacanths and an increase in motorized canoes. Exploitation rates have fallen in recent years, and by 2000, had fallen to lowest ever reported. Finally, future fishery developments are discussed.

FRONTANA-URIBE (Sarita C.) & SOL  S-WEISS (Vivianne), 2011. First records of polychaetous annelids from Cenote Aerolito (sinkhole and anchialine cave) in Cozumel Island, Mexico. *Journal of Cave and Karst Studies* 73(1, April):1-10. DOI:

<http://dx.doi.org/10.4311/jcks2009lsc0107>. ABS: In this study, polychaetous annelids are recorded for the first time in Mexican cenotes and anchialine caves. These organisms were collected in the Cenote Aerolito (Cozumel Island, on the Caribbean coast of Quintana Roo) during three sampling events from February 2006 to April 2008, among algae, roots of mangroves, and in karst sediments. A total of 1518 specimens belonging to five families (Paraonidae, Capitellidae, Nereididae, Dorvilleidae, and Syllidae), ten genera, and eleven species were collected. In the cave system, two specimens of the amphinomid *Hermodice carunculata* were found. This cenote and its biota are now in danger of disappearing because of a marina construction project in its western shore.

FROSCHAUER (A.) & MacLEAN (L.), 2011. Intergovernmental Executive Committee Convenes To Lead International White-Nose Syndrome Response. January 14, 2011. <http://www.fws.gov/whitenosesyndrome/news/011411.html>

FUJITA (Y.) & NARUSE (T.), 2011. *Catoptrus iejima*, a new species of cavernicolous swimming crab (Crustacea: Brachyura: Portunidae) from a submarine cave at Ie Island, Ryukyu Islands, Japan. *Zootaxa* 2918(June 14):29-38, 8 pl., 10 r  f. ABS: A new species of swimming crab belonging to the genus *Catoptrus* A. Milne-Edwards, 1870, is described based on a single female specimen collected from a submarine cave at Ie Island, Ryukyu Islands, Japan. The new species can be easily distinguished from all five

- congeners by its proportionally longer pereopods as well as by combinations of the characters of the carapace, eyes, and cheliped. KW: Brachyura, Portunidae, new species, taxonomy, Ryukyu Islands, Japan. <http://www.mapress.com/zootaxa/list/2011/2918.html>
- GAL  N (Carlos A.), 2011.** Notas sobre la sima de la cantera de Osinbeltz (Gipuzkoa, Pa  s Vasco) y su fauna de quir  pteros [Notes about the Osinbeltz quarry Abyss (Gipuzkoa, Basque Country) and its bat fauna]. Biosphere Consultancies & Sociedad de Ciencias Aranzadi. Marzo 2011. RES: Se presentan notas sobre la fauna de quir  pteros de una sima abierta en el corte de la cantera de Osinbeltz (Zestoa, Gipuzkoa). La cavidad consta de una sala inicial que prosigue en varias simas, totalizando -64 m de desnivel y 252 m de desarrollo de galer  as. En la cavidad habita *Myotis daubentoni* (Vespertilionidae), otras especies de Rhinolophidae, e invertebrados cavern  colas. Se describe la cavidad y sus caracter  sticas geol  gicas y se presentan datos obtenidos durante un estudio medio-ambiental con especial   nfasis en quir  pteros. Se discuten aspectos relativos a su conservaci  n y manejo. PC: Geoespeleolog  a, biospeleolog  a, zoology, quir  pteros, ecolog  a, conservaci  n. ABS: Notes about bat fauna of an abyss open in a section of the Osinbeltz quarry (Zestoa, Gipuzkoa) are presented. The cave has an initial room with various abyss, adding -64 m deep and 252 m of gallery development. In the abyss there are *Myotis daubentoni* (Vespertilionidae), other Rhinolophidae species of bats and invertebrate cave-dwelling fauna. We describe the cave and its geological characteristics and present data obtained from an environmental study with special emphasis in bats. Some aspects related to the management and protection of the cave are discussed. KW: Geospeleology, biospeleology, zoology, bats, ecology, conservation. <http://www.aranzadi-zientziak.org/category/espeleologia/articulos-de-consulta>
- GALASSI (D. M. P.), STOCH (F.) & BRANCELJ (A.), 2011.** Dissecting copepod diversity at different spatial scales in Southern European ground water. *11th International Conference on Copepoda, M  rida, Mexico*:42.
- GANESH (S. R.), SREEKAR (Rachakonda), PAL (Saunak P.), RAMCHANDRA (Gautam), SRINIVASULU (C.) & SRINIVASULU (Bhargavi), 2011.** Discovery and first description of male *Cnemaspis heteropholis* Bauer, 2002 (Reptilia: Gekkonidae) from Agumbe, central Western Ghats, India. *Journal of Threatened Taxa* 3(8, August):2023-2027. <http://www.threatenedtaxa.org/index.asp?jid=66>
- GARC  A-MACHADO (Erik), HERN  NDEZ (Damir), GARC  A-DEBR  S (Alfredo), CHEVALIER-MONTEAGUDO (Pedro), METCALFE (Cushla), BERNATCHEZE (Louis) & CASANE (Didier), 2011.** Molecular phylogeny and phylogeography of the Cuban cave-fishes of the genus *Lucifuga*: Evidence for cryptic allopatric diversity. *Molecular Phylogenetics and Evolution* 61(2, November):470-483. DOI: <http://dx.doi.org/10.1016/j.ympev.2011.06.015>. ABS: Underground environments are increasingly recognized as reservoirs of faunal diversity. Extreme environmental conditions and limited dispersal ability of underground organisms have been acknowledged as important factors promoting divergence between species and conspecific populations. However, in many instances, there is no correlation between genetic divergence and morphological differentiation. *Lucifuga* Poey is a stygobiotic fish genus that lives in Cuban and Bahamian caves. In Cuba, it offers a unique opportunity to study the influence of habitat fragmentation on the genetic divergence of stygobiotic species and populations. The genus includes four species and one morphological variant that have contrasting geographical distributions. In this study, we first performed a molecular phylogenetic analysis of the *Lucifuga* Cuban species using mitochondrial and nuclear markers. The mitochondrial phylogeny revealed three deeply divergent clades that were supported by nuclear and morphological characters. Within two of these main clades, we identified five lineages that are candidate cryptic species and a taxonomical synonymy between *Lucifuga subterranea* and *Lucifuga teresinarum*. Secondly, phylogeographic analysis using a fragment of the cytochrome b gene was performed for *Lucifuga dentata*, the most widely distributed species. We found strong geographical organization of the haplotype clades at different geographic scales that can be explained by episodes of dispersal and population expansion followed by population fragmentation and restricted gene flow. At a larger temporal scale, these processes could also explain the diversification and the distribution of the different species. Highlights: mtDNA phylogeny of the Cuban cave fishes (*Lucifuga*) revealed three main clades. Nuclear and morphological characters support these clades. Five putative new cryptic species were identified within two of these clades. Phylogeography indicates that dispersal and vicariance have moulds this diversity. The evolutionary trends of four phenotypic traits were inferred. KW: Blind cave fish, Cryptic species, Phylogeny, Phylogeography, Stygobiotic.
- GARC  A RUIZ (Andr  s), 2011.** Contribuci  n al conocimiento de los quil  podos cavern  colas de la Provincia de Ja  n. 3. Sima de la Lastra, Cuevas Secreta del Sagreo y Secreta del Poyo Manquillo. *Monograf  as Biospeleol  gicas* 6:26-29. ABS: In the present work of centipedes the material of samples are studied, all of the Ja  n caves and have been collected by biospeleologists of the GEV in several expeditions. They make an appointment five species for the first time for the county the and for it wide the distribution of the these for the Iberian Peninsula.
- GARGOMINY (O.), PRI   (V.), BICHAIN (J.-M.), CUCHERAT (X.) & FONTAINE (B.), 2011.** Liste de r  f  rence annot  e des Mollusques continentaux de France [Annotated checklist of the continental molluscs from France]. *MalaCo* 7:307-382. <http://www.journal-malaco.fr/page-46.html>
- GASPARO (Fulvio), 2011.** Una nuova *Harpactea* cavernicola di Creta [A new cave-dwelling *Harpactea* from Crete (Araneae, Dysderidae)]. *Atti e Memorie della Commissione Grotte "Eugenio Boegan"* 43:57-65. RIAS: Viene descritta *Harpactea persephone* n. sp. su di un singolo esemplare di sesso femminile, recentemente rinvenuto nella grotta di Kournas (Spilaio tou Kourna), presso il villaggio omonimo (prefettura di Chania, Creta). La nuova specie, di grande taglia e caratterizzata da un'accentuata riduzione e depigmentazione oculare, si distingue da tutte le specie conosciute del genere *Harpactea* per la spinulazione straordinariamente abbondante delle zampe, con spine presenti su tutti i segmenti, eccezion fatta per le coxe e le patelle anteriori e tutti i tarsi; in particolare un numero inconsueto di spine (circa 10) si riscontra sulle tibie ed i metatarsi del primo e secondo paio di zampe. *Harpactea persephone* n. sp. appartiene al gruppo *rubicunda* e, in base alla struttura della vulva, presenta evidenti affinit   con *H. catholica* (Brignoli, 1984), specie troglolofila raccolta anche in sede epigea, endemica del settore occidentale di Creta. SUM: *Harpactea persephone* n. sp. is described on a single female specimen collected in the Kournas cave (Spilaio tou Kourna), Chania prefecture, Crete. The main diagnostic characters of the new species are: the large body size, a strong eye reduction and depigmentation and the very abundant leg spination: spines are present on all leg segments, except for the anterior coxae and patellae and all the tarsi; an absolutely high number of spines (about 10 on each segment) are located on the tibiae and metatarsi of the first and second pair of legs. Due to the above features, the new species is easily distinguished from all the congeners. *Harpactea persephone* n. sp. belongs to the *rubicunda* group and, according to the vulvar structure, appears to be related to *H. catholica* (Brignoli, 1984), a trogliphilic species (often found outside caves) endemic for the western part of Crete. <http://www.boegan.it/index.php?id=550>
- GASPARO (Fulvio), 2011.** Ricerche biospeleologiche a Creta 2008-2010. *Progressione* 57(April):137-143. <http://www.boegan.it/index.php?id=562>
- GAUTHIER (Robert), 2011.** Le genre *Tetrodontium* (Tetraphidaceae, Musci) au Qu  bec. *Carnets de Bryologie* 1:10-14. BL: Cf p. 12, "Les trois esp  ces de *Tetrodontium* croissent exclusivement    l'ombre, sur les rochers acides ou calcaires, suspendues au plafond des abris sous-roche, dans les crevasses des parois rocheuses ou encore au fond des grottes, l   o   l'humidit   est   lev  e et constante sans que ce soient des rochers suintants".
- GEORGIEV (Dilian Georgiev), 2011.** New localities of four Bulgarian endemic Hydrobiidae species (Mollusca: Gastropoda: Risooidea). *ZooNotes* 16:1-4. ABS: New

localities of *Belgrandiella pussila* Angelov, 1959, *Belgrandiella angelovi* Pintér, 1968, *Bythiospeum copiosus* (Angelov, 1972), and *Grossuana thracica* Glöer & Georgiev, 2009 were reported in Bulgaria. Some notes on the generic position of *Belgrandiella angelovi* and *Bythiospeum copiosus* were done. KW: Spring, cave, snail. <http://www.doaj.org/doi?func=openurl&genre=journal&issn=13139916&volume=16&issue=-&date=2011>

GERLACH (J.), 2011. Conservation of the Seychelles sheath-tailed bat *Coleura seychellensis* from 1997-2011 and future prospects. *Phelsuma* 19:54-68. ABS: The Critically Endangered Seychelles sheath-tailed bat *Coleura seychellensis* has been the subject of conservation activity on Silhouette Island since 1997, in addition research into its status has been carried out on Mahé island. The species was more abundant in the past and many known roosts have been abandoned. The causes of decline have been speculated to include disturbance and predation but studies of the roosts suggest that habitat change may be the most significant factor. The species occupies small caves in boulder fields in lowland woodland which has been extensively invaded by introduced plants. These plants support reduced numbers of insects, especially Coleoptera. Lepidoptera and Coleoptera dominate the diet with a strong preference for the latter before and during the breeding season. Habitat management on Silhouette has removed alien plants from around the roosts and improved foraging conditions for the bat resulting in an increase in breeding activity. The population at La Passe on Silhouette has increased from 14-25 individuals in the 1990s to 40 in 2009. In 2010 this colony fragmented with 18-20 individuals leaving to start a second colony at Anse Lascars. The forced closure of the conservation project in March 2011 means that all conservation action for the species has ceased. In the absence of Seychelles government commitment to support conservation of this Critically Endangered species its future prospects do not look promising. <http://www.islandbiodiversity.com/Phelsuma19.htm>

GIACHINO (Pier Mauro) & VAILATI (Dante), 2011. *Review of the Anillina of Greece (Coleoptera, Carabidae, Bembidiini). Biodiversity Journal, Monograph 1* (30 June). ISBN 978-88-904929-8-3 (Print edition), ISBN 978-88-904929-9-0 (Online edition), ISSN 2039-0394 (Print edition) ISSN 2039-0408 (Online edition), Palermo (Italy), Edizioni Danaus, 112 p. <http://www.biodiversityjournal.com/contents.html>

GIRIBET (Gonzalo), 2011. *Shearogovea*, a New Genus of Cyphophthalmi (Arachnida, Opiliones) of Uncertain Position from Oaxacan Caves, Mexico. *Breviora* 528(November):1-7. DOI: <http://dx.doi.org/10.3099/528.1>. ABS: *Shearogovea* gen. nov. is erected for *Neogovea mexasca* Shear, 1977, a troglobitic cyphophthalmid species from a cave system in Oaxaca, Mexico. The new genus does not show affinity to *Neogovea* Hinton, 1938, as it lacks the characteristic toothed claw of leg II or the fusion of the coxae of legs II to those of legs III (which are in turn fused to coxae of legs IV). *Shearogovea* gen. nov. is probably not related to other Neotropical neogoveid genera, but its exact phylogenetic position remains unresolved. KW: Troglobite, Mexico, new genus, Neogoveidae, Sironidae.

GLAZIER (Douglas S.) & DEPTOLA (Travis J.), 2011. The amphipod *Gammarus minus* has larger eyes in freshwater springs with numerous fish predators. *Invertebrate Biology* 130(1, March):60-67. DOI: <http://dx.doi.org/10.1111/j.1744-7410.2010.00220.x>. ABS: Intraspecific variation in eye size in relation to ecological factors has not been well studied. Here, for the first time, we show that larger eyes in a freshwater crustacean may be associated with the presence of predators. In central Pennsylvania (USA), individuals of the amphipod crustacean *Gammarus minus* have significantly larger eyes in two freshwater springs with numerous fish predators (*Cottus cognatus*) than in three springs with few or no fish predators. Although we do not know the precise causes of these differences, this study and previous work on cave populations of *G. minus* suggest that eye size is an evolutionarily malleable trait that may respond to multiple selection pressures, either directly or indirectly. Three plausible explanations for the eye-size variation observed among our study populations include (1) larger eyes may enable amphipods to better detect and avoid fish predators, (2) fish predation favors nocturnal or shallow interstitial activity that is facilitated by larger, more light-sensitive eyes, or (3) the presence of fishes is associated with other

environmental factors that may favor relatively large eyes. Available evidence suggests that the first hypothesis is the most viable explanation, but further study is required. KW: Amphipoda, compound eye, evolution.

GOLDBERG (Julia) & TREWICK (Steven A.), 2011. Exploring Phylogeographic Congruence in a Continental Island System. *Insects* 2(3, August 3):369-399. DOI: <http://dx.doi.org/10.3390/insects2030369>. ABS: A prediction in phylogeographic studies is that patterns of lineage diversity and timing will be similar within the same landscape under the assumption that these lineages have responded to past environmental changes in comparable ways. Eight invertebrate taxa from four different orders were included in this study of mainland New Zealand and Chatham Islands lineages to explore outcomes of island colonization. These comprised two orthopteran genera, one an endemic forest-dwelling genus of cave weta (Rhaphidophoridae, *Talitropsis*) and the other a grasshopper (Acrididae, *Phaulacridum*) that inhabits open grassland; four genera of Coleoptera including carabid beetles (*Mecodema*), stag beetles (*Geodorcus*), weevils (*Hadramphus*) and clickbeetles (*Amychus*); the widespread earwig genus *Anisolabis* (Dermaptera) that is common on beaches in New Zealand and the Chatham Islands, and an endemic and widespread cockroach genus *Celaoblatta* (Blattodea). Mitochondrial DNA data were used to reconstruct phylogeographic hypotheses to compare among these taxa. Strikingly, despite a maximum age of the Chathams of ~4 million years there is no concordance among these taxa, in the extent of genetic divergence and partitioning between Chatham and Mainland populations. Some Chatham lineages are represented by insular endemics and others by haplotypes shared with mainland populations. These diverse patterns suggest that combinations of intrinsic (taxon ecology) and extrinsic (extinction and dispersal) factors can result in apparently very different biogeographic outcomes. KW: New Zealand, Chatham Islands, insects, phylogeographic patterns, mitochondrial DNA, Orthoptera, Coleoptera, Blattodea, Dermaptera.

GOLOVATCH (Sergei I.), 2011. The millipede genus *Caucasodesmus* Golovatch, 1985, with the description of a new species from the Crimea, Ukraine (Polydesmida, Diplopoda, Trichopolydesmidae):1-8. In: GOLOVATCH (S. I.) & MESIBOV (R.), *Advances in the Systematics of Diplopoda 4. ZooKeys* 93, Special Issue, GOLOVATCH (S. I.) & MESIBOV (R.), Eds.:65 p. DOI: <http://dx.doi.org/10.3897/zookeys.93.1159>. ABS: The hitherto monotypic genus *Caucasodesmus* is new to the Ukrainian list due to the discovery of *Caucasodesmus tauricus* sp. n. in a cave in the Crimea. The new species is easily distinguished from *Caucasodesmus inexpectatus* Golovatch, 1985, the type, and only other, known species of this genus, in the abundantly setose collum and following metaterga, and more elaborate gonopods. The status of *Caucasodesmus*, which shows in the superfamily Trichopolydesmoidea where it definitely belongs such evident generic-level apomorphies as the absence of bacilliform sensilla on antennomeres 5 and 7, of a cannula on the gonocoxite, and of a seminal groove on a biramous gonopod telopodite (apparently, both latter characters are functionally correlated to each other), is refined by formally reassigning it to the family Trichopolydesmidae. KW: Millipede, Trichopolydesmidae, taxonomy, new species, cave, Crimea.

GOLOVATCH (Sergei I.), GEOFFROY (Jean-Jacques), MAURIÈS (Jean-Paul) & VANDENSPIEGEL (Didier), 2011. The millipede genus *Plusioglyphiulus* Silvestri, 1923 in Thailand (Diplopoda, Spirostreptida, Cambalopsidae). *Zootaxa* 2940(July 5):1-63, 53 pl., 10 réf. ABS: The basically southeast Asian genus *Plusioglyphiulus* is shown to currently comprise 27 species, all keyed, of which 13 are new, stemming from Thailand, and mapped: *P. panhai* sp. n., *P. antiquior* sp. n., *P. sutchariti* sp. n., *P. likhitrakarni* sp. n., *P. pimvichatae* sp. n., *P. erawan* sp. n., *P. wat* sp. n., *P. tham* sp. n., *P. phra* sp. n., *P. jaydee* sp. n., *P. puttakan* sp. n., *P. saksit* sp. n. and *P. samakkee* sp. n. Although the new species have mainly been collected in caves, none seems to actually represent a troglobiont. A second record of *P. ampullifer* Golovatch, Geoffroy, Mauriès & Vandenspiegel, 2009 is provided in southern Vietnam, as well as new illustrations are presented for *P. bessoni* Golovatch, Geoffroy, Mauriès & Vandenspiegel, 2009, prepared from strictly topotypic samples in northern Thailand. With the discovery of *P. panhai* sp. n. and, especially, *P. antiquior* sp. n., both from southern Thailand, and both markedly transitional to the more northerly diversified *javanicus*-group of *Glyphiulus*, the genus *Plusioglyphiulus* is reconfirmed

- as being heterogeneous. Its diagnosis seems to be based now only on a single, rather weak apomorphy in posterior gonopod structure. Some evolutionary and zoogeographical considerations are presented to substantiate the predominantly eastward and/or southward speciation events in typical *Plusioglyphiulus* which have reached northern and eastern Borneo in the east and southeast. KW: Diplopoda, *Plusioglyphiulus*, *Glyphiulus*, heterogeneity, taxonomy, new species, key, cave, Thailand, Vietnam.
<http://www.mapress.com/zootaxa/list/2011/2940.html>
- GOLOVATCH (Sergei I.) & MESIBOV (Robert), 2011.** *Advances in the Systematics of Diplopoda 4. ZooKeys* 93, Special Issue, GOLOVATCH (S. I.) & MESIBOV (R.), Eds.:65 p. BL: Voir: GOLOVATCH (S. I.), The millipede genus *Caucasodesmus* Golovatch, 1985, with the description of a new species from the Crimea, Ukraine (Polydesmida, Diplopoda, Trichopolydesmidae):1-8; GOLOVATCH (S. I.), MIKHALJOVA (E. V.) & CHANG (H.-W.), The millipede family Polydesmidae in Taiwan, with descriptions of five new species (Polydesmida, Diplopoda):9-42; MESIBOV (R.), New species of *Asphalidesmus* Silvestri, 1910 from Australia (Diplopoda, Polydesmida, Dalodesmidea):43-65.
<http://www.pensoft.net/journals/zookeys/issue/93/>
- GOLOVATCH (Sergei I.), MIKHALJOVA (Elena V.) & CHANG (Hsueh-Wen), 2011.** The millipede family Polydesmidae in Taiwan, with descriptions of five new species (Polydesmida, Diplopoda):9-42. In: GOLOVATCH (S. I.) & MESIBOV (R.), *Advances in the Systematics of Diplopoda 4. ZooKeys* 93, Special Issue, GOLOVATCH (S. I.) & MESIBOV (R.), Eds.:65 p. DOI: <http://dx.doi.org/10.3897/zookeys.93.1167>.
- GONZ  LEZ (C.), 2011.** El Rol del Conservacionista en el Manejo y Protecci  n del Recurso Cuevas. *Espeleorevista Puerto Rico* 4(Enero-Junio):24-26.
- GOODMAN (S. M.), RAMASINDRAZANA (B.), MAMINIRINA (C. P.), SCHOEMAN (M. C.) & APPLETON (B.), 2011.** Morphological, bioacoustical, and genetic variation in *Miniopterus* bats from eastern Madagascar, with the description of a new species. *Zootaxa* 2880(May 17):1-19, 8 pl., 32 r  f. BL: Cf p. 11, fig. 5 C, *Miniopterus sororculus* (FMNH 209181) from Province de Fianarantsoa, Grotte de Fandanana, 4.1 km NE de Fandriana.
<http://www.mapress.com/zootaxa/list/2011/2880.html>
- GOROCHOV (A. V.), 2011.** Contribution to the Fauna and Systematics of the Stenopelmatoidea (Orthoptera) of Indochina and some other territories. 9. *Entomological Review* 9(1, March)71-89, 106 fig. DOI: <http://dx.doi.org/10.1134/S0013873811010064>. Original Russian Text    GOROCHOV (A. V.), 2010, published in *Entomologicheskoe Obozrenie* 89(4):805-827. BL: Cf p. 88-89, *Neorhaphidophora steineri* Gorochov, sp. n., fig. 62-64, Hai Sin Gu (NE47.14.019) Cave, 29.I.2009, 1    holotype, 2 deutonymphs (   and   ).paratypes (H. Steiner). The holotype is provided with n   010/09, and the paratypes, with n   020/09 and 009/09, respectively. Comparison: The new species significantly differs from *N. valentinae* in the above characters, part of which may be results of the adaptation of this species to the cave-dwelling mode of life (however, its darkish coloration assumes that *N. steineri* is not an absolute obligate troglolobiont). LP: Myanmar cave, crickets.
- GRANT (E. H. C.), 2011.** Structural complexity, movement bias, and metapopulation extinction risk in dendritic ecological networks. *Journal of the North American Benthological Society* 30(1, March):252-258. DOI: <http://dx.doi.org/10.1899/09-120.1>. ABS: Spatial complexity in metacommunities can be separated into 3 main components: size (i. e., number of habitat patches), spatial arrangement of habitat patches (network topology), and diversity of habitat patch types. Much attention has been paid to lattice-type networks, such as patch-based metapopulations, but interest in understanding ecological networks of alternative geometries is building. Dendritic ecological networks (DENs) include some increasingly threatened ecological systems, such as caves and streams. The restrictive architecture of dendritic ecological networks might have overriding implications for species persistence. I used a modeling approach to investigate how number and spatial arrangement of habitat patches influence metapopulation extinction risk in 2 DENs of different size and topology. Metapopulation persistence was higher in larger networks, but this relationship was mediated by network topology and the dispersal pathways used to navigate the network. Larger networks, especially those with greater topological complexity, generally had lower extinction risk than smaller and less-complex networks, but dispersal bias and magnitude affected the shape of this relationship. Applying these general results to real systems will require empirical data on the movement behavior of organisms and will improve our understanding of the implications of network complexity on population and community patterns and processes. KW: Dendritic ecological network, dendritic metapopulation, dispersal bias, metapopulation persistence, network complexity.
- GRAVE (S. de) & SAKIHARA (T. S.), 2011.** Further records of the anchialine shrimp, *Periclimenes pholeter* Holthuis, 1973 (Crustacea, Decapoda, Palaemonidae). *Zootaxa* 2903(June 2):64-68, 2 pl., 19 r  f.
<http://www.mapress.com/zootaxa/list/2011/2903.html>
- GRIFFIN (D. W.), GONZALEZ (C.), TEIGELL (N.), PETROSKY (T.), NORTHUP (D. E.) & LYLES (M.), 2011.** Observations on the use of membrane filtration and liquid impingement to collect airborne microorganisms in various atmospheric environments. *Aerobiologia* 27(1, March):25-35. DOI: <http://dx.doi.org/10.1007/s10453-010-9173-z>. ABS: The influence of sample-collection-time on the recovery of culturable airborne microorganisms using a low-flow-rate membrane-filtration unit and a high-flow-rate liquid impinger were investigated. Differences in recoveries were investigated in four different atmospheric environments, one mid-oceanic at an altitude of ~10.0 m, one on a mountain top at an altitude of ~3,000.0 m, one at ~1.0 m altitude in Tallahassee, Florida, and one at ~1.0 m above ground in a subterranean-cave. Regarding use of membrane filtration, a common trend was observed: the shorter the collection period, the higher the recovery of culturable bacteria and fungi. These data also demonstrated that lower culturable counts were common in the more remote mid-oceanic and mountain-top atmospheric environments with bacteria, fungi, and total numbers averaging (by sample time or method categories) <3.0 colony-forming units (CFU) m⁻³. At the Florida and subterranean sites, the lowest average count noted was 3.5 bacteria CFU m⁻³, and the highest averaged 140.4 total CFU m⁻³. When atmospheric temperature allowed use, the high-volume liquid impinger utilized in this study resulted in much higher recoveries, as much as 10    greater in a number of the categories (bacterial, fungal, and total CFU). Together, these data illustrated that (1) the high-volume liquid impinger is clearly superior to membrane filtration for aeromicrobiology studies if start-up costs are not an issue and temperature permits use; (2) although membrane filtration is more cost friendly and has a "typically" wider operational range, its limits include loss of cell viability with increased sample time and issues with effectively extracting nucleic acids for community-based analyses; (3) the ability to recover culturable microorganisms is limited in "extreme" atmospheric environments and thus the use of a "limited" methodology in these environments must be taken into account; and (4) the atmosphere culls, i. e., everything is not everywhere. KW: Bacteria, Fungi, Methods, Membrane filtration, Liquid impingement, Aeromicrobiology, Microbiology.
- Grupo de Espeleolog  a de Villacarrillo (G. E. V.), 2011.** Acuse de Recibo: I concurso fotogr  fico de flora y fauna cavern  cola. *Bolet  n de la Sociedad Entomol  gica Aragonesa* 48:388.
- HARTKE (Tamara R.), FI  SER (Cene), HOHAGEN (Jennifer), KLEBER (Sascha), HARTMANN (Rainer) & KOENEMANN (Stefan), 2011.** Morphological and molecular analyses of closely related species in the stygobiontic genus *Niphargus* (Amphipoda). *Journal of Crustacean Biology* 31(4, October):701-709. DOI: <http://dx.doi.org/10.1651/10-3434.1>. ABS: The present study investigates morphologically similar species in the amphipod genus *Niphargus*, with special emphasis on three presumably closely-related species: *N. fontanus*, *N. aquilex*, and *N. schellenbergi*. The distribution ranges of these species overlap in Central Europe, and ambiguity of the

- current diagnostic characters has likely resulted in misidentifications. To address this issue, we carried out molecular-phylogenetic analyses of Cytochrome Oxidase Subunit 1 gene (COI) and 28S rDNA sequences for 34 individuals of the three species from 27 sites in Central Europe and Great Britain. We also included 14 GenBank sequences for two additional species, *N. virei* and *N. rhenorhodanensis*, to increase the resolution potential among our in-group taxa. In addition, about 100 specimens of the three species were examined for a reappraisal of diagnostic characters. Representative specimens taken from various subterranean habitat types were examined for each of the three species. A new morphological key, utilizing improved characters, is presented to clearly distinguish between *N. fontanus*, *N. aquilex*, and *N. schellenbergi*. Molecular-phylogenetic analysis using COI sequence data indicates geographically well-delimited clades for *N. aquilex* and *N. fontanus*. Our data suggest that some previously recorded nipargids from the Harz Mountains of Germany, initially identified as *N. fontanus* or *N. aquilex*, were all *N. schellenbergi*. KW: 28S rDNA, Bayesian inference, COI, cryptic species, groundwater, Harz Mountains, identification key.
- HARTKE (Tamara R.), KOENEMANN (Stefan) & YAGER (Jill), 2011.** *Speleonectes williamsi*, a new species of Remipedia (Crustacea) from the Bahamas. *Zootaxa* 3115(December 1):21-28, 6 pl., 11 réf. ABS: We describe a new species of the genus *Speleonectes* (Crustacea, Remipedia, Nectiopoda) from an anchialine cave on Grand Bahama Island in the northern Bahamas. *Speleonectes williamsi* n. sp. is morphologically highly similar to *Speleonectes emersoni* from the Dominican Republic. However, morphological differences between the two species were detected in dissected body parts, such as the setal patterns of the antennae and trunk limbs, the terminal claws of maxillae and maxillipeds, and the frontal filaments. KW: Remipede, cryptic species, pseudo-cryptic species, glands, Speleonectidae. <http://www.mapress.com/zootaxa/list/2011/3115.html>
- HARVEY (M. S.), RIX (M. G.), FRAMENAU (V. W.), HAMILTON (Z. R.), JOHNSON (M. S.), TEALE (R. J.), HUMPHREYS (G.) & HUMPHREYS (W. F.), 2011.** Protecting the innocent: studying short-range endemic taxa enhances conservation outcomes. *Invertebrate Systematics* 25(1, July):1-10. DOI: <http://dx.doi.org/10.1071/IS11011>.
- HAUG (Joachim T.), OLESEN (Jørgen), MAAS (Andreas) & WALOSZEK (Dieter), 2011.** External morphology and post-embryonic development of *Derocheilocaris remanei* (Mystacocarida) revisited, with a comparison to the cambrian taxon *Skara*. *Journal of Crustacean Biology* 31(4, October):668-692. DOI: <http://dx.doi.org/10.1651/11-3481.1>.
- HAUSDORF (B.), WILKENS (H.) & STRECKER (U.), 2011.** Population genetic patterns revealed by microsatellite data challenge the mitochondrial DNA based taxonomy of *Astyanax* in Mexico (Characidae, Teleostei). *Molecular Phylogenetics and Evolution* 60(1, July):89-97. DOI: <http://dx.doi.org/10.1016/j.ympev.2011.03.009>. ABS: *Astyanax* has become an important model system for evolutionary studies of cave animals. We investigated correlations of population genetic patterns revealed by microsatellite data and phylogeographic patterns shown by mitochondrial DNA sequences in Mexican cave and surface fish of the genus *Astyanax* (Characidae, Teleostei) to improve the understanding of the colonization history of this neotropical fish in Central and North America and to assess a recent taxonomic classification. The distribution of nuclear genotypes is not congruent with that of the mitochondrial clades. Admixture analyses suggest there has been nuclear gene flow between populations defined by different mitochondrial clades. The microsatellite data indicate that there was mitochondrial capture of a cave population from adjacent populations. Furthermore, gene flow also occurred between populations belonging to different nuclear genotypic clusters. This indicates that neither the nuclear genotypic clusters nor the mitochondrial clades represent independent evolutionary units, although the mitochondrial divergences are high and in a range usually characteristic for different fish species. This conclusion is supported by the presence of morphologically intermediate forms. Our analyses show that the Trans-Mexican Volcanic Belt limited gene flow,
- but has been crossed by *Astyanax* several times. In Yucatán, where obvious geographic barriers are missing, the incongruence between the distribution of nuclear and mitochondrial markers reflects random colonization events caused by inundations or marine transgressions resulting in random phylogeographic breaks. Thus, conclusions about the phylogeographic history and even more about the delimitation of species should not be based on single genetic markers. Highlights: Incongruence between nuclear genotypic clusters and mitochondrial clades. Gene flow between groups with different mitochondrial clades. Mitochondrial capture of a cave population. The Trans-Mexican Volcanic Belt is not a complete geographic boundary for *Astyanax*. Random phylogeographic breaks in haplotype distribution in Yucatán. KW: Barcoding, Introgression, mtDNA capture, Phylogeographic breaks, Troglodites.
- HÄUSER (Christoph L.), HOFFMANN (Anke), KROUPA (Alexander) & MONJE (Juan Carlos), 2011.** The ATBI+M pilot site Mercatour/Alpi Maritime - Establishing the taxonomic baseline for nature conservation. *EDIT Newsletter* #25(February):28-30.
- HAWES (T. C.), 2011.** Mating Behavior in the Alpine Tiger Moth, *Metacrias huttoni*. *Journal of Insect Behavior* 24(1, January):22-33. DOI: <http://dx.doi.org/10.1007/s10905-010-9233-9>.
- HERNANDES (F.), BERNARDI (L. F. de O.) & FERREIRA (R. L.), 2011.** Snout mites from caves in Brazil, with description of a new species (Acari: Trombidiformes: Bdellidae). *Journal of Natural History* 45(13/14, April):799-812. DOI: <http://dx.doi.org/10.1080/00222933.2010.535919>. ABS: In this paper we describe the first species of the genus *Cyta* from Brazil, *Cyta troglodyta* sp. nov., with a key to the world species of the genus. New records of mites of the family Bdellidae are reported from caves in Brazil. KW: Acari, Bdellidae, *Cyta*, snout mites, cave, Brazil.
- HERSHLER (R.), LIU (H.-P.) & LANDYE (J. J.), 2011.** Two new genera and four new species of freshwater cochliopid gastropods (Rissooidea) from northeastern Mexico. *Journal of Molluscan Studies* 77(1, February):8-23. DOI: <http://dx.doi.org/10.1093/mollus/eyq033>. ABS: We describe four new species of cochliopid snails from thermal springs in northeastern Mexico (Chihuahua, Coahuila and Durango States). Two of these are placed in *Pseudotryonia* and represent the first Mexican records for this genus. They are diagnosed by unique or unique combinations of shell and anatomical characters, are well differentiated genetically from both each other and other congeners (mtCOI sequence divergence $\geq 2.0\%$) and were resolved as sister species within the *Pseudotryonia* clade in our molecular phylogenetic analyses. The other two species resemble *Ipnobius*, *Pseudotryonia* and *Tryonia* in having a thin, narrow shell, penis ornamented with a small number of glandular papillae and ovoviviparous reproductive mode, but are well differentiated (from these and each other) by other morphological/anatomical characters and mtCOI sequences (8.6-12.5% and 5.2-12.1% divergence, respectively) and consequently are placed in new monotypic genera (*Chorrobibus* and *Minckleyella*). *Chorrobibus* and *Minckleyella* formed a clade with *Ipnobius*, *Mexipyrigus* and *Tryonia* in all of our molecular phylogenetic analyses. *Chorrobibus* was consistently delineated as a divergent lineage within this clade, but its relationships were otherwise unresolved. *Minckleyella* was nested within *Tryonia* in most of the trees and was sister to this genus in the others; despite this finding we erected a new genus for this snail because of its highly distinctive anatomical features and large genetic divergence relative to *Tryonia* (5.2 \pm 0.6%). Each of the four new species is endemic to highly disturbed single springs or local spring systems and may require protection.
- HERSHLER (R.), LIU (H.-P.) & LANDYE (J. J.), 2011.** New species and records of springsnails (Caenogastropoda: Cochliopidae: *Tryonia*) from the Chihuahuan Desert (Mexico and United States), an imperiled bio-diversity hotspot. *Zootaxa* 3001(August 23):1-32, 12 pl., 50 réf. ABS: We describe 13 new, narrowly localized species of the aquatic gastropod genus *Tryonia* from springs in the Chihuahuan Desert (Chihuahua and Texas): *T. allendae* n. sp., *T. angosturae* n. sp., *T. chuwiscarae* n. sp., *T. contrerasi* n. sp., *T. julimesensis* n. sp., *T. metcalfi* n. sp., *T. minckleyi* n. sp., *T. molinae* n. sp.,

- T. oasiensis* n. sp., *T. ovata* n. sp., *T. peregrina* n. sp., *T. taylora* n. sp. and *T. zaragozae* n. sp. These novelties are distinguished by shell and other morphologic characters and are well differentiated genetically from each other and from other congeners (mtCOI sequence divergence >1.9%). We also provide two new records for *T. seemani* (Frauenfeld, 1863), which is distributed near the southern limit of the Chihuahuan Desert (Durango State) and previously had been thought to be possibly extinct. Bayesian analysis of a mtCOI dataset resolved two clades composed of novelties described herein: one (containing four species) is distributed in several drainages in Chihuahua, the other (containing three species) is a local species flock in the Río Conchos basin (also in Chihuahua) that lives in the warmest waters yet recorded for *Tryonia* (41-44°C). (The phylogenetic relationships of the other new species were not well supported.) Both of these clades contain sympatric species pairs; co-occurrence of *Tryonia* congeners previously had been reported only in Ash Meadows (southern Nevada). Some of the species described herein are from previously unsurveyed localities and may help delineate new areas of endemism within the Chihuahuan Desert. One of the new species (*T. julimesensis*) became extinct between 1991 and 2001 and another (*T. oasiensis*) disappeared from its single known locality shortly after it was first discovered in 2009 and also may be extinct. The other species treated herein are at risk of extirpation owing to the declining extent and condition of their unprotected habitats. KW: Springs, Mexico, Texas, gastropods, mitochondrial DNA, endemism, taxonomy, conservation. <http://www.mapress.com/zootaxa/list/2011/3001.html>
- HIGASHI (R.) & TSUKAGOSHI (A.), 2011.** Four new species of the interstitial family Cobanocytheridae (Crustacea: Ostracoda) from central Japan. *Zootaxa* 2924(June 20):33-56, 19 pl., 12 réf. ABS: Four interstitial cobanocytherid species are described from central Japan: *Cobanocythere ikeyai* sp. nov., *Cobanocythere lata* sp. nov., *Paracobanocythere watanabei* sp. nov. and *Paracobanocythere grandis* sp. nov. The reports of the two new *Paracobanocythere* species are the second and third for this genus since the original description of *P. hawaiiensis* Gottwald, 1983. *Cobanocythere ikeyai* sp. nov., and *C. lata* sp. nov., from Japan are morphologically more similar to the species of the "lanceolata group" by Gottwald (1983) and *C. guttaeformis* Gottwald, 1983 from the Galapagos Islands, respectively, rather than to other *Cobanocythere* species from Japan. The Japanese archipelago (eastern Eurasian Continent) and the Galapagos Islands (north-western South America) are separated by about 15000 km from each other, and have never been adjoined throughout geological history. This fact, and also the morphological similarities between *Cobanocythere* species from Japan and the Galapagos Islands, suggests that this genus may have undergone global dispersal at several times in the past. Conversely, the genera *Cobanocythere* and *Paracobanocythere* are distributed not only around continents and continental islands but also around oceanic islands such as the Hawaiian and Galapagos Islands. We conclude, therefore, that the cobanocytherids seem to have been able to disperse long distances across oceans. KW: *Podocopa*, *Cytheroidea*, *Cobanocythere*, *Paracobanocythere*, taxonomy, dispersal. <http://www.mapress.com/zootaxa/list/2011/2924.html>
- HIGASHI (R.), TSUKAGOSHI (A.), KIMURA (H.) & KATO (K.), 2011.** Male Dimorphism in a New Interstitial Species of the Genus *Microloxoconcha* (Podocopida: Ostracoda). *Journal of Crustacean Biology* 31(1, February):142-152. DOI: <http://dx.doi.org/10.1651/09-3234.1>. ABS: The marine interstitial *Microloxoconcha dimorpha* n. sp. has two morphotypes in the male, "L type" and "S type"; they occur sympatrically and can be distinguished by the size of their carapaces and the morphology of the male copulatory organs. Conversely, the genetic relationships based on the partial mitochondrial COI gene did not demonstrate an independent clade as belonging to only one type. The L and S types are therefore not reproductively isolated from each other, and they express an intra-sexual dimorphism. We also argue that the morphological features of the male copulatory organ could have changed prior to the establishment of reproductive isolation. KW: COI, Intra-sexual dimorphism, male copulatory organ, *Microloxoconcha dimorpha*, Ostracoda, speciation.
- HLAVÁČ (Peter), 2011.** Endogean and cavernicolous Coleoptera of the Balkans. 11. Revision of the subgenus *Trogloorhynchus* Reitter of the genus *Otiorhynchus* Germar (Coleoptera: Curculionidae) [Endogejski i špiljski Coleoptera Balkana. 11. Revizija podroda *Trogloorhynchus* Reitter roda *Otiorhynchus* Germar (Coleoptera: Curculionidae)]. *Natura Croatica* 20(1, June 30):189-200. ABS: The subgenus *Trogloorhynchus* Reitter, 1854 of the genus *Otiorhynchus* Germar, 1824 is redescribed, revised and differentiated from other subgenera of *Otiorhynchus*, which has the micro or anophthalmous species. *T. anophthalmoides omeros* Colonnelli, 2003, *T. pretneri* F. Solari, 1955 as well as *T. celejensis* G. Müller, 1924 are synonymized to *T. anophthalmoides* Reitter, 1914. KW: Coleoptera, Curculionidae, Entiminae, *Otiorhynchus*, *Trogloorhynchus*, revision, biospeleology, Austria, Slovenia, Italy, Croatia, taxonomy. SAŽ: Podrod *Trogloorhynchus* Reitter, 1854 roda *Otiorhynchus* Germar, 1824 se ponovno opisuje, revidira i diferencira od ostalih podrodova roda *Otiorhynchus* u kojem su vrste bez ili s izuzetno malim očima. *T. anophthalmoides omeros* Colonnelli, 2003, *T. pretneri* F. Solari, 1955 kao i *T. celejensis* G. Müller, 1924 su sinonimizirane s *T. anophthalmoides* Reitter, 1914. KR: Coleoptera, Curculionidae, Entiminae, *Otiorhynchus*, *Trogloorhynchus*, revizija, biospeleologija, Austrija, Slovenija, Italija, Hrvatska, taksonomija. http://hrcak.srce.hr/index.php?show=clanak&id_clanak_jezik=104173
- HO (H.-C.) & SHAO (K.-T.), 2011.** Annotated checklist and type catalog of fish genera and species described from Taiwan. *Zootaxa* 2957(July 8):1-74, 8 pl., 261 réf. <http://www.mapress.com/zootaxa/list/2011/2957.html>
- HOU (Zhong), SKET (Boris), FIŠER (Cene) & LI (Shuqiang), 2011.** Eocene habitat shift from saline to freshwater promoted Tethyan amphipod diversification. *Proceedings of the National Academy of Sciences of the United States of America* 108(35, August 30):14533-14538, + supplements. DOI: <http://dx.doi.org/10.1073/pnas.1104636108>. ABS: Current theory predicts that a shift to a new habitat would increase the rate of diversification, while as lineages evolve into multiple species, intensified competition would decrease the rate of diversification. We used Holarctic amphipods of the genus *Gammarus* to test this hypothesis. We sequenced four genes (5088 bp) for 289 samples representing 115 *Gammarus* species. A phylogenetic analysis showed that *Gammarus* originated from the Tethyan region with a saline ancestry in the Paleocene, and later colonized the freshwater habitat in the Middle Eocene. Ancestral range reconstruction and diversification mode analysis combined with paleogeological and paleoclimatic evidence suggested that the habitat shift from saline to freshwater led to an increased diversification rate. The saline lineage of *Gammarus* dispersed to both sides of the Atlantic at 55 million years ago (Ma), because of the few barriers between the Tethys and the Atlantic, and diversified throughout its evolutionary history with a constant diversification rate [0.04 species per million years (sp/My)]. The freshwater *Gammarus*, however, underwent a rapid diversification phase (0.11 sp/My) until the Middle Miocene, and lineages successively diversified across Eurasia via vicariance process likely driven by changes of the Tethys and landmass. In particular, the freshwater *Gammarus lacustris* and *Gammarus balcanicus* lineages had a relatively high diversification shift, corresponding to the regression of the Paratethys Sea and the continentalization of Eurasian lands during the Miocene period. Subsequently (14 Ma), the diversification rate of the freshwater *Gammarus* decreased to 0.05 and again to 0.01 sp/My. The genus *Gammarus* provides an excellent aquatic case supporting the hypothesis that ecological opportunities promote diversification. KW: Evolution, molecular dating, range expansion.
- HOUSTON (T. F.), 2011.** Egg gigantism in some Australian earth-borer beetles (Coleoptera: Geotrupidae: Bolboceratinae) and its apparent association with reduction or elimination of larval feeding. *Australian Journal of Entomology* 50(2, May):164-173. DOI: <http://dx.doi.org/10.1111/j.1440-6055.2010.00794.x>. ABS: Field and laboratory observations have revealed that four Western Australian bolboceratine beetle species (*Blackburnium reichei* (Guérin-Méneville), *Blackbolbus frontalis* (Guérin-Méneville), *Bolborhachium inclinatum* Howden and *Bolborhachium trituberculatum* (Bainbridge)) develop and lay one relatively gigantic egg at a time. Eggs of *Bbu. reichei* weighed up to 56% as much as the females that laid them. These observations accord with earlier reports of egg gigantism in two other *Bolborhachium* species. However, while those earlier reports noted that the eggs were deposited in large brood cells provisioned with a "humus-like material", no comparable provision was found in the present study

(with the possible exception of *Bbo. frontalis*). Larvae of *Bbu. reichei*, *Brh. trituberculatum* and *Blackbolbus hoplocephalus* (Lea) and the pupa of the latter species are briefly described and illustrated for the first time. The final instar larva of *Bbo. hoplocephalus* was unusual in its globose body form, vestigial appendages and complete immobility. Evidence is presented which suggests that females of at least *Bbu. reichei* (and probably other species) deposit their eggs in comparatively small, bare, earthen cells and development to adulthood takes place in the absence of larval feeding. Comparisons are made with similar biology reported for some European cave beetles. KW: Bolboceratini, egg, larva, life cycle, oviposition, Scarabaeoidea.

HUME (Julian) & MIDDLETON (Greg), 2011. A preliminary vertebrate palaeontological cave survey of the Comoros Islands. *Phelsuma* 19:26-40. <http://www.islandbiodiversity.com/Phelsuma19.htm>

HUNTSMAN (Brock M.), VENARSKY (Michael P.) & BENSTEAD (Jonathan P.), 2011. Relating carrion breakdown rates to ambient resource level and community structure in four cave stream ecosystems. *Journal of the North American Benthological Society* 30(4, December):882-892. DOI: <http://dx.doi.org/10.1899/10-116.1>. ABS: Detrital inputs into ecosystems vary in quantity and quality (e. g., plant litter vs carrion). Variability in detrital quantity and quality potentially affects consumer biomass and rates of organic matter (OM) breakdown. We used cave streams to test 2 linked hypotheses regarding the influence of total detrital inputs on consumer biomass and the breakdown of high-quality carrion detritus. First, we hypothesized that cave systems with higher total OM availability would support a higher biomass of consumers. Second, we predicted that higher consumer biomass would cause faster carrion breakdown rates. To test these hypotheses, we quantified macroinvertebrate biomass and breakdown rates (k, d⁻¹) of carrion (mouse carcasses, *Mus musculus*) in 4 cave streams in northeastern Alabama and southeastern Tennessee (USA) that varied in total OM storage. We estimated carrion breakdown rates in coarse- and fine-mesh packs (10-mm and 500-µm mesh size) to isolate the influence of scavenging by crayfish. Macroinvertebrate biomass (excluding crayfish) in carrion packs was positively correlated with OM storage, but neither macroinvertebrate biomass (excluding crayfish) nor OM storage were strong predictors of carrion breakdown rates. Crayfish biomass was not correlated with total OM storage but was positively correlated with coarse-mesh breakdown rates. Our study illustrates the influence of community structure and consumer biomass on detrital breakdown rates in cave ecosystems. However, determining how detrital inputs structure cave communities will require further study. KW: Bottom-up, *Cambarus*, cave, decomposition, karst, *Orconectes*, scavenging.

HUNTSMAN (Brock M.), VENARSKY (Michael P.), BENSTEAD (Jonathan P.) & HURYN (Alexander D.), 2011. Effects of organic matter availability on the life history and production of a top vertebrate predator (Plethodontidae: *Gyrinophilus palleucus*) in two cave streams. *Freshwater Biology* 56(9, September):1746-1760. DOI: <http://dx.doi.org/10.1111/j.1365-2427.2011.02609.x>. SUM: 1. Surface ecosystems provide the primary source of organic matter to many cave communities. Variation in the strength of connectivity to the surface suggests that some caves may be more resource-limited than others. To test this, we examined diet, prey availability and production of an obligate cave salamander *Gyrinophilus palleucus* (Plethodontidae), a top predator, in two south-eastern U. S. A. caves with different levels of organic matter (Tony Sinks cave, 165 g AFDM m⁻²; Bluff River cave, 62 g AFDM m⁻²). 2. We quantified density, biomass, growth rate, production and diet of *G. palleucus* monthly for 21 months. Diet composition, differences in prey communities and seasonal patterns in prey consumption were also analysed. 3. Salamander density, biomass and secondary production were significantly greater in the high organic matter cave (0.10 m⁻², 0.18 g AFDM m⁻², 0.12 g AFDM m⁻² year⁻¹) than in the low organic matter cave (0.03 m⁻², 0.03 g AFDM m⁻², 0.01 g AFDM m⁻² year⁻¹). Although growth rates were not statistically different between the two cave salamander populations, low recaptures probably influenced this result. 4. Isopoda prey were the major contributor to salamander production in the high organic matter cave (69%). In the low organic matter cave, production was provided by isopods (41%) and oligochaetes (20%). The lower number of prey taxa contributing to

salamander production in the high organic matter cave suggests the ability to forage more selectively. 5. The differences in foraging strategy, density, biomass and secondary production were probably related to differences in the strength of surface connectivity, which controls organic matter supply. Links between basal resource level and top predator performance show the importance of bottom-up limitation in the food webs of caves and other detritus-based ecosystems. KW: Bottom-up control, resource limitation, salamander, secondary production, trophic basis of production.

HUSANA (Daniel Edison M.), TAN (Swee Hee) & KASE (Tomoki), 2011. A new genus and species of anchialine Hymenosomatidae (Crustacea, Decapoda, Brachyura) from Samar, Philippines. *Zootaxa* 3109(November 24):49-59, 8 pl., 23 réf. ABS: A new genus and species of brachyuran crab, *Samarplax princeps* (family Hymenosomatidae) is described from an anchialine cave in Samar Island, Philippines. This cavernicolous species lacks rostrum and has degenerated eyes, possesses two small spines at the lateral margin of the carapace, has a proportionally shorter projected merus of the third maxilliped, an almost flat epistome and brush-like setae instead of teeth along the cutting edges of the chelae. The complete loss of visual organs and pigmentation, the long but slender ambulatory legs and large egg size suggest a completely hypogean lifestyle for this species. This is the first species of Hymenosomatidae recorded from an anchialine cave in the Philippines exhibiting true troglomorphic adaptations. KW: *Samarplax princeps* new genus, new species, taxonomy, Philippines, Samar, Principe Cave, anchialine cave, troglobite. <http://www.mapress.com/zootaxa/list/2011/3109.html>

IEPURE (Sanda) & OARGA (Andreea), 2011. A New *Acanthocyclops* Kiefer, 1927 (Copepoda: Cyclopidae) from Caves in Apuseni Mountains (North-Western Romania). *Annales Zoologici* 61(2, June):427-438. DOI: <http://dx.doi.org/10.3161/000345411X584889>. ABS: A new stygobite species *Acanthocyclops transylvanicus* sp. nov. is described from the north-western Romanian Carpathians (Apuseni Mountains) and is accommodated in the subterranean *kieferi*-group. *Acanthocyclops transylvanicus* sp. nov. resembles closely *A. biarticulatus* Monchenko, 1972 in the segmentation pattern of the swimming legs (3.2/3.2/3.2/3.2), but differs by the following characters: antennary second endopodite segment with 7 setae; distal articles of endopodites of P1 and P3 with 4 and 5 setae, respectively; absence of coxopodite ornamentation pattern in leg 4; leg 4 endopodite with 3-segmented appearance, but lacking a functional articulation between the second and third segment. We assume that the 2-segmented nature of the leg 4 endopodite as observed in both species is a convergent acquisition. The adult shape of the leg 4 endopodite in *A. transylvanicus* sp. nov. results from the simple suppression of an arthrodial membrane formation. *A. transylvanicus* is the ninth representative known in Romania which is accommodated in the *kieferi*-group. An identification key for the species of *kieferi*-group known to occur in Romania is given. KW: Copepoda, Cyclopidae, *Acanthocyclops*, taxonomy, new species, caves, Romania.

IGREJA (Ricardo Pereira), 2011. Infectious Diseases Associated with Caves. *Wilderness & Environmental Medicine* 22(2, June):115-121. DOI: <http://dx.doi.org/10.1016/j.wem.2011.02.012>. ABS: In recent times, caving has become increasingly popular, with almost 2 million people visiting national park caves each year in the United States. Although the 2 million tourist visits are extremely low risk, smaller numbers of sport cavers are at risk for some high risk conditions, and expedition cavers are at risk for some obscure infections. Infectious diseases like histoplasmosis, rabies, leptospirosis, and tick-borne relapsing fever may be transmitted by the underground fauna. To reduce the risk of illness or injury while caving, knowledge of potential risks before engaging in this activity is important. Caving preparation needs to be carefully planned and executed, including vaccinations, prophylactic medications, and advice regarding safe conduct and behaviors. KW: Cave, infectious diseases, histoplasmosis, rabies.

ISAIA (Marco), GIACHINO (P. M.), SAPINO (E.), CASALE (A.) & BADINO (Guido), 2011. Conservation value of artificial subterranean systems: A case study in an abandoned mine in Italy. *Journal for Nature Conservation* 19(1, January):24-33. DOI: <http://dx.doi.org/10.1016/j.jnc.2010.04.002>. ABS:

Subterranean ecosystems often harbour unique and specialised biocoenoses of considerable scientific interest and high potential conservation value. In view of the peculiar species assemblage in the abandoned tunnels of a talc mine complex in the north-western Italian Alps (Germanasca Valley, Province of Turin, NW Italy), the aims of the present work were (i) to investigate the subterranean invertebrate fauna, (ii) to assess the impact of tourism activities on the invertebrate fauna, and (iii) to assess the conservation value of the terrestrial invertebrate community and associated habitats. The study was carried out at four sites: one tunnel restored for tourism purposes; two abandoned tunnels; and a wild cave. The results of several statistical analyses, including ANOVA, PCA and CCA, showed that the eutrophic conditions induced by past human activity could improve the quality of the subterranean habitat. On the other hand, a massive intervention for tourism purposes could seriously jeopardise the survival of the most sensitive species. The increased thermic instability and mean temperature had a significant negative effect on the local populations of cave-dwelling arthropods, whose ecological optimum is determined primarily by low thermic instability, cold temperatures and intermediate conditions of eutrophy. On the basis of our results we strongly recommend to avoid thermic isolation of any part of tunnels, as it is the primary factor affecting the most sensitive species. KW: Cave-dwelling arthropods, CCA, Eutrophy, Human disturbance, Thermic instability.

JABŁOŃSKA (A.) & PEŠIĆ (V. M.), 2011. Five aquatic Oligochaeta species new for the fauna of Montenegro. *Turkish Journal of Zoology* 35(1, January):119-121.

<http://mistug.tubitak.gov.tr/bdyim/toc.php?dergi=zoo&yilsayi=2011/1>

JIANG (R.-H.), ZHANG (X.-C.) & LIU (Yan), 2011. *Asplenium cornutissimum* (Aspleniaceae), a new species from karst caves in Guangxi, China. *Brittonia* 63(1, March):83-86. DOI: <http://dx.doi.org/10.1007/s12228-010-9139-z>.

ABS: *Asplenium cornutissimum*, a new species from Guangxi, southern China, is described, illustrated, and compared to three similar species: *A. pulcherrimum*, *A. coenobiale*, and *A. tenuifolium*. So far, the new species is known only from the limestone region in southern Guangxi, from 750-825 m. It grows exclusively in karst caves. KW: Fern, karst cave, China, Aspleniaceae, new species.

JIN (L.-R.), LIN (A.-Q.), SUN (K.-P.), LIU (Y.) & FENG (J.), 2011. Postnatal development of morphological features and vocalization in the pomona leaf-nosed bat *Hipposideros pomona*. *Acta Theriologica* 56(1, January):13-22. DOI: <http://dx.doi.org/10.1007/s13364-010-0011-z>.

JOCQUÉ (M.) & JOCQUÉ (R.), 2011. An overview of *Neogovea* species (Opiliones: Cyphophthalmi: Neogoveidae) with the description of *Neogovea virginie* n. sp. from French Guiana. *Zootaxa* 2754(February 1st):41-50, 6 pl., 20 réf. BL: Cf p. 41, "They typically live in forest litter but some species appear to occur in caves such as *Neogovea mexasca* Shear, 1977 (Juberthie 1971).

<http://www.mapress.com/zootaxa/list/2011/2754.html>

JONES (B.), 2011. Stalactite Growth Mediated by Biofilms: Example from Nani Cave, Cayman Brac, British West Indies. *Journal of Sedimentary Research* 81(4, April):322-338. DOI: <http://dx.doi.org/10.2110/jsr.2011.28>.

ABS: Growth lines evident in cross sections through stalactites from Nani Cave provide a temporal record of their growth. Many of these dark, organic-rich laminae developed as biofilms that are recognized by the presence of (1) a diverse microbial biota that is dominated by actinomycetes, (2) calcified filaments, (3) films formed of extracellular polymeric substances (EPS), (4) grain-coating sheets of calcite crystals that grew in EPS, (5) biterninal calcite crystals, and (6) etching. This biosignatures suite encompasses a variety of constructive and destructive processes. Where fully developed, the features generated by the biofilms form a distinctive microstratigraphic succession, collectively <50 µm thick, which can be traced laterally across the stalactite's surface. The use of speleothems in paleoclimate studies is commonly framed against a chronology that relies, at least in part, on annual growth couplets. The dark, organic-rich lamina that forms one part of the growth couplet is typically ascribed to abiotic precipitation that incorporated exogenic organic matter that was flushed into the cave following the first major rainfall of the wet season. This assumption ignores the possibility that

dark, organic-rich growth laminae can be the record of biofilms that developed on the surface of the stalactites and hence, may not be a record of annual events.

JUGOVIC (J.), PREVORČNIK (S.), BLEJEC (A.) & SKET (B.), 2011. Morphological differentiation in the cave shrimps *Troglocaris* (Crustacea: Decapoda: Atyidae) of the Dinaric karst - a consequence of geographical isolation or adaptation? *Journal of Zoological Systematics and Evolutionary Research* 49(3, August):185-195. DOI: <http://dx.doi.org/10.1111/j.1439-0469.2010.00611.x>.

ABS: Three Dinaric subgenera of cave shrimps from the genus *Troglocaris* s. l.: *T. sg. Troglocaris* Dormitzer, 1853 (= *Troglocaris* s. str.), *T. sg. Spelaecaris* Matjašič, 1956 and *T. sg. Troglocaridella* Babić, 1922 comprise 12 currently known species and phylogenetic lineages. On the basis of the results of previous molecular studies and the extensive morphometric analysis, appropriateness of several former and the existence of some new metric descriptors are examined by multivariate statistical methods. In discriminant function analyses (DFA), all subgenera are distinctly separated even when only sexually non-dimorphic characters are used. Since considerable number of these characters is acknowledged, a joined analysis of both sexes is proven to be appropriate for the identification of the subgenera. Characters for the species recognition of *Spelaecaris* and *Troglocaridella* females are provided. In the subgenus *Troglocaris* s. str., molecularly recognized phylogroups are separated by DFA despite the expressed clinal variation. Also, minimum spanning tree (MST) demonstrates the existence of considerable morphological differences. The amounts of morphological difference (indicated by the length of the MST lines) and genetic difference are concordant i. e. morphological differences among the subgenera exceed the ones within the subgenera. KW: Morphometry, multivariate statistics, clinal variation, morphometric descriptors, systematics, *Troglocaris*. ZUS: Drei dinarische Untergattungen der Höhlengarnelen aus der Gattung *Troglocaris* s. l.: *T. sg. Troglocaris* Dormitzer, 1853 (= *Troglocaris* s. str.), *T. sg. Spelaecaris* Matjašič, 1956 und *T. sg. Troglocaridella* Babić, 1922, bestehend aus 12 Arten und phylogenetischen Linien. Die molekulare Analyse von früheren Studien war die Grundlage für unsere morphometrischen Untersuchungen. Eine umfangreiche morphometrische Analyse zeigt die Angemessenheit der früheren und die Existenz der neuen morphometrischen Merkmale. Bei der Diskriminanzanalyse wurden die sexuell dimorphen morphometrischen Merkmale nicht berücksichtigt. Weil eine Reihe von sexuell nicht dimorphen morphometrischen Merkmalen gefunden wurde, ist eine gemeinsame Analyse beider Geschlechter geeignet für die Identifizierung der Untergattungen. Merkmale für die Identifizierung der Arten von der Untergattungen *Spelaecaris* und *Troglocaridella* werden diskutiert. Trotz der graduellen Variation ist es uns gelungen, Phylogruppen von *Troglocaris* s. str. zu erkennen. Der minimale Stammbaum (MST) bestätigt die Existenz von erheblichen morphologischen Unterschieden. Die Beträge der morphologischen Unterschiede (angedeutet durch die Länge der MST-Linien) und genetische Unterschiede sind übereinstimmend: Morphologische Unterschiede zwischen den Untergattungen sind größer als innerhalb der Untergattungen.

KARANOVIC (I.), 2011. On the recent Cycloocyridinae (Podocopida, Candonidae) with description of two new genera and one new species. *Zootaxa* 2820(April 14):1-61, 30 pl., 108 réf. ABS: The recent representatives of the subfamily Cycloocyridinae Kaufmann, 1900 are revised here, based on some newly collected Australian material, as well as an extensive study of type material of already described species deposited in various museums. The following two new genera are proposed: *Kempfcycloocypris* gen. nov. and *Keysercypris* gen. nov. The genus *Kempfcycloocypris* is erected to include single new species from subterranean waters of New South Wales, Australia. *Kempfcycloocypris australis* gen. et sp. nov. can be distinguished from other members of the subfamily by the following characters: 6-segmented antennula, absence of the sexual bristles on antenna, weakly asymmetrical prehensile palps, absence of the basal seta on the second thoracopod, and the long distal seta on the penultimate segment of the third thoracopod. *Keysercypris* is erected to include some South American species previously described in the genera *Physocypris* Vávra, 1897 or *Cypria* Zenker, 1854. The main characters of this genus are: rather globular carapace, with or without marginal tubercles; very short setae on endopodal segments of the third thoracopod; unequally long setae "h1" and "h2" on the terminal segment of the same appendage; and the presence of the basal seta on the second thoracopod. *Keysercypris*

affinis (Klie, 1933) comb. nov. is chosen as the type species and, together with *K. deformis* (Klie, 1940) comb. nov., *K. longiseta* (Klie, 1930) comb. nov., *K. obtusa* (Klie, 1940) comb. nov., and *K. pellucida* (Sars, 1901), redescribed in the present paper and lectotype and paralectotype are designated. After examining and redescribing the type species of the genus *Physocypria* Vávra, 1897, *P. bullata* Vávra, 1897, the genus *Mecynocypria* Rome, 1962 is synonymised with *Physocypria*. Lectotype of *P. bullata* is here designated. For each valid genus a diagnosis, a key to species and a distribution map are provided. A list of six genera and 87 species, currently belonging to the subfamily Cyclopyridinae, is given at the end of the paper, along with their synonyms. Twenty four species are not included in the keys due to lack of data; these are also listed at the end of the paper. KW: Ostracoda, revision, zoogeography, stygofauna. <http://www.mapress.com/zootaxa/list/2011/2820.html>

KARANOVIC (Tomislav) & COOPER (Steven J. B.), 2011. Molecular and morphological evidence for short range endemism in the *Kinnecaris solitaria* complex (Copepoda: Parastenocarididae), with descriptions of seven new species. *Zootaxa* 3026(September 14):1-64, 26 pl., 113 réf. ABS: Recent investigation of one of the larger calcretes in the uppermost reaches of the Carey palaeochannel in the Yilgarn region of Western Australia revealed an unprecedented diversity of copepod crustaceans. Twenty-two different species and subspecies, from six copepod families, represent 70% of the previously recorded copepod α -diversity in the whole region, although the area investigated is less than 3% of its surface. The aims of this study were to explore the diversity of the harpacticoid genus *Kinnecaris* Jakobi, 1972 using both molecular and morphological methods, establish precise species boundaries, find their accurate area of distribution, reconstruct phylogenetic relationships, and explore colonisation pathways. To achieve this we sampled very intensively in the area, as well as in two neighbouring palaeochannels, analysing more than 700 samples from 230 different localities, half of which contained copepods. Seven species are described here as new, five of them from the Yeelirrie palaeochannel (*K. esbe* sp. nov., *K. lined* sp. nov., *K. linel* sp. nov., *K. linesae* sp. nov., and *K. uranusi* sp. nov.) and one each from two neighbouring palaeochannels (*K. barrambie* sp. nov. and *K. lakewayi* sp. nov.). *Parastenocaris jane* Karanovic, 2006 from the Pilbara region, along with a newly described third Australian parastenocaridid genus from the Yilgarn, were used as outgroups in our molecular analysis. The COI fragment was successfully PCR-amplified from 12 parastenocaridid specimens using a nested combination of primers. All analyses supported the presence of at least seven genetically divergent lineages, most supported with very high bootstrap values. Three genera formed three separate clades, and the average pairwise distances between *Kinnecaris* morpho-taxa were found to be very high (8.2-16.8 %), while the highest divergences within morpho-taxa were 0.3%. Some conflict between molecular phylogenies and morphological data was observed when it came to recognizing different groups of species. While morphology indicates that *K. esbe*, *K. linel*, and *K. uranusi* represent a group of very closely related species, supported by a number of synapomorphies, molecular analyses suggest that *K. linel* and *K. uranusi* are only remotely related. We argue in favor of morphological data, until more markers can be studied to try to resolve these differences. In Yeelirrie, morphological evidence would suggest a downstream colonisation history in the genus *Kinnecaris*, where the most plesiomorphic form (*K. linesae*) lives in the uppermost reaches of the palaeochannel, and the trend in the caudal rami elongation and denser somite ornamentation is obvious downstream the palaeochannel (*K. uranusi*, *K. linel*, and then *K. esbe*), with the only exception being *K. lined*, which probably represents an independent colonisation event. Parastenocarids are copepods of freshwater origin, and we argue that they can probably disperse downstream during periods of increased rainfall, evolving into separate species in isolated calcrete pockets during periods of increased aridity. Although some of the questions remained unanswered in this study, detailed morphological and molecular observations indicate that we are not dealing with one widely distributed and variable species in the Yilgarn region, but rather with a complex of short range endemics. Areas of distribution for different species range from 30 km to less than 5 km in diameter. Very strong seasonal dynamics in this subterranean community was observed, and this is a novel concept for these ecosystems globally. A key to nine Australian species of *Kinnecaris* is also included. KW: Western Australia, Harpacticoida, stygofauna, taxonomy, systematics, barcoding. <http://www.mapress.com/zootaxa/list/2011/3026.html>

KARANOVIC (Tomislav), EBERHARD (S. M.) & MURDOCH (A.), 2011. A cladistic analysis and taxonomic revision of Australian *Metacyclops* and *Goniocyclops*, with description of four new species and three new genera (Copepoda, Cyclopoida). *Crustaceana* 84(1):1-67. DOI: <http://dx.doi.org/10.1163/001121610X546698>.

ABS: Four new small subterranean cyclopid species are described from Australia in a newly erected genus *Anzycyclops* n. gen.: *A. yarriensis* n. sp. (type), *A. belli* n. sp., *A. ballensis* n. sp., and *A. euryantennula* n. sp. Three species are from the Pilbara region in Western Australia, the fourth species from central Queensland. Another previously described species from New Zealand is transferred to this genus, *A. silvestris* (Harding, 1958) n. comb., originally described in the genus *Goniocyclops* Kiefer, 1955. The new genus has a number of unique features, including dorsoventrally compressed habitus, reticulated integument of prosomites, and a characteristic shape of the fifth leg. It is most closely related to the South American genus *Muscocyclops* Kiefer, 1937, and the two share the same spine formula of the swimming legs (2.3.3.2), but they can be distinguished by a number of characters in the shape of the genital double-somite, caudal rami, and anal operculum, as well as in the armature of the first leg. Our preliminary cladistic analysis revealed the polyphyletic nature of the endemic Australian genus *Fierscyclops* Karanovic, 2004. As a result, the subgenus *Pilbaracyclops* Karanovic, 2006 is upgraded to full generic rank and its two species are given as new combinations: *P. supersensus* (Karanovic, 2006) n. comb. (type) and *P. frustratio* (Karanovic, 2006) n. comb. The assemblage of Australian species previously considered members of the genus *Metacyclops* Kiefer, 1927 is also found to be polyphyletic and all five Australian representatives and one New Zealand species of the so-called "trispinosus"-group are transferred into a newly erected genus *Pescecyclops* n. gen.: *P. laurentiisae* (Karanovic, 2004) n. comb. (type), *P. pilanus* (Karanovic, 2004) n. comb., *P. arnaudi* (G. O. Sars, 1908) n. comb., *P. monacanthus* (Kiefer, 1928) n. comb., *P. kimberleyi* (Karanovic, 2004) n. comb., and *P. pilbaricus* (Karanovic, 2004) n. comb. After this, only two Australian species are left in the genus *Metacyclops*: *M. mortonii* Pesce, De Laurentiis & Humphreys, 1996 and *M. superincidentis* Karanovic, 2004. *Pescecyclops* is defined by the presence of three spines on the distal exopodal segment of all swimming legs, only one apical spine on the fourth leg endopod, and absence of any sexual dimorphism in postantennular appendages, in addition to a *Metacyclops*-like fifth leg. Two Australian species previously considered members of *Goniocyclops* and one as a member of *Allocyclops* Kiefer, 1932 proved to be relatively closely related to each other and quite separate from other members of their respective genera. They are transferred into a third new genus, *Dussartcyclops* n. gen., although subdivided into two subgenera: *D.* (s. str.) *uniarticulatus* (Karanovic, 2004) n. comb. (type), *D.* (s. str.) *mortonii* (Karanovic, 2004) n. comb., and *D.* (*Barrowcyclops*) *consensus* (Karanovic, 2003) n. comb. They all have a reduced armature of the swimming legs (spine formula 2.2.2.2), vermiform habitus, and the fifth leg exopod armed with two subequal apical setae, but the subgenus *Barrowcyclops* n. subgen. has the exopod of the fifth leg fused basally to the somite and the inner spine on the first leg basis absent, in addition to a more plesiomorphic endopodal armature of the first and fourth legs. RÉ: Quatre nouvelles espèces de petits cyclopidés souterrains sont décrites d'Australie, appartenant à un genre nouveau, *Anzycyclops* n. gen.: *A. yarriensis* n. sp. (type), *A. belli* n. sp., *A. ballensis* n. sp., et *A. euryantennula* n. sp. Trois d'entre elles proviennent de la région de Pilbara en Australie Occidentale, la quatrième de la région centrale du Queensland. Une autre espèce, antérieurement décrite de Nouvelle-Zélande, est transférée dans ce genre, *A. silvestris* (Harding, 1958) n. comb., attribuée auparavant au genre *Goniocyclops* Kiefer, 1955. Le nouveau genre présente un ensemble de traits uniques, incluant un habitus comprimé dorso-ventralement, un tégument réticulé des prosomites, et une forme caractéristique de la cinquième paire de pattes. Il apparaît le plus étroitement apparenté au genre sud-américain *Muscocyclops* Kiefer, 1937, et les deux genres partagent la même formule des épines des exopodites des pattes natatoires (2.3.3.2), mais ils peuvent être distingués par d'autres caractères, dans la forme du double-somite génital, les rames furcales et l'opercule anal, comme par l'armature de la première patte. Notre analyse cladistique préliminaire a révélé la nature polyphylétique du genre endémique australien *Fierscyclops* Karanovic, 2004. Comme résultat, le sous-genre *Pilbaracyclops* Karanovic, 2006 est élevé au rang de genre et ses deux espèces sont nommées comme nouvelles combinaisons: *P. supersensus* (Karanovic, 2006) n. comb. (type) et *P. frustratio* (Karanovic, 2006) n. comb. L'assemblage des

espèces australiennes auparavant considérées comme membres du genre *Metacyclops* Kiefer, 1927 se révèle aussi être polyphylétique et tous les cinq représentants australiens et une espèce de Nouvelle-Zélande du groupe *trispinosus* sont transférés dans un nouveau genre *Pescecyclus* n. gen.: *P. laurentiisae* (Karanovic, 2004) n. comb. (type), *P. pilanus* (Karanovic, 2004) n. comb., *P. arnaudi* (G. O. Sars, 1908) n. comb., *P. monacanthus* (Kiefer, 1928) n. comb., *P. kimberleyi* (Karanovic, 2004) n. comb., et *P. pilbaricus* (Karanovic, 2004) n. comb. Seules deux espèces australiennes sont maintenues dans le genre *Metacyclops*: *M. murtoni* Pesce, De Laurentiis & Humphreys, 1996 et *M. superincidentis* Karanovic, 2004. *Pescecyclus* est défini par la présence de trois épines sur le segment distal de l'exopodite des pattes natatoires, par une seule épine apicale à l'endopodite de la quatrième patte, et l'absence de tout dimorphisme sexuel sur les appendices post-antennulaires, en plus d'une cinquième patte de type *Metacyclops*. Deux espèces australiennes auparavant considérées comme membres du genre *Goniocyclus* et une du genre *Alloocyclus* Kiefer, 1932 se révèlent relativement proches l'une de l'autre et distinctes des autres membres de leurs genres respectifs. Elles sont transférées dans un troisième nouveau genre, *Dussartcyclus* n. gen., bien que subdivisé en deux sous-genres: *D.* (s. str.) *uniarticulatus* (Karanovic, 2004) n. comb. (type), *D.* (s. str.) *murtoni* (Karanovic, 2004) n. comb., et *D.* (*Barrowcyclus*) *consensus* (Karanovic, 2003) n. comb. Elles présentent toutes une armature réduite des pattes natatoires (formule des épines 2.2.2.2), un habitus vermiforme, et l'exopodite de la cinquième patte armé de deux soies apicales subégales; mais le sous-genre *Barrowcyclus* n. subgen. présente l'exopodite de la cinquième patte fusionné à sa base au somite et l'épine interne du basipodite de la première patte est absente, en plus d'une armature plus plésiomorphe de l'endopodite des premières et quatrièmes pattes.

KARUNARATHNA (D. M. S. Suranjan) & AMARASINGHE (A. A. Thasun), 2011. *Hemidactylus maculatus hunae* (Reptilia: Gekkonidae) preys on *Bandicota bengalensis* (Mammalia: Rodentia) in the Galoya National Park, Sri Lanka [*Hemidactylus maculatus hunae* (Reptilia: Gekkonidae) preda sobre *Bandicota bengalensis* (Mammalia: Rodentia) en el Parque Nacional Galoya, Sri Lanka]. *Herpetotropicos* 5(2, May 10):111-113.

KAUR (H.), VENKATESHWARLU (P.), SRINIVASULU (C.) & SRINIVASULU (B.), 2011. First report of *Hipposideros lankadiva* (Chiroptera: Hipposideridae) from Hyderabad, Andhra Pradesh, India. *Small Mammal Mail* 2(2, July/December 2010, January 2011):2-3. <http://www.zoosprint.org/shownewslettersBackIssue.asp?hidNewsLetter=11>

KEIM (B.), 2011. Bats Are Worth at Least \$3 Billion Per Year. *Wired Science* (April 1, 7:00 am). www.Wired.com. <http://www.wired.com/wiredscience/tag/white-nose-syndrome/>

KEIM (B.), 2011. The Man Who Swims With Coelacanth. *Wired Science* (May 26, 4:39 pm). www.Wired.com. <http://www.wired.com/wiredscience/2011/05/hans-fricke/>

KLAUS (S.) & PLATH (M.), 2011. Predation on a Cave Fish by the Freshwater Crab *Avotrichodactylus bidens* (Bott, 1969) (Brachyura, Trichodactylidae) in a Mexican Sulfur Cave. *Crustaceana* 84(4):411-418. **DOI:** <http://dx.doi.org/10.1163/001121611X560853>. ABS: Using prey-choice experiments, we demonstrate that the freshwater crab *Avotrichodactylus bidens* (Bott, 1969) preys on cave-dwelling fish (*Poecilia mexicana* Steindachner, 1863) in a sulfidic southern Mexican cave, the Cueva del Azufre, and thus may be one of the top predators in this subterranean ecosystem. ZUS: Mittels Beutewahlexperimenten können wir zeigen, dass die Süßwasserkrabbe *Avotrichodactylus bidens* (Bott, 1969) höhlenbewohnende Fische (*Poecilia mexicana* Steindachner, 1863) in einer schwefelwasserstoffhaltigen süd-mexikanischen Höhle (der Cueva del Azufre) bejagt. Möglicherweise gehören die Krabben zu den Topprädatoren in diesem unterirdischen Ökosystem.

KOMAI (T.) & YAMADA (Y.), 2011. A new species of the caridean genus *Bresilia* Calman (Decapoda: Bresiliidae) discovered from a shallow-water submarine cave in Okinawa Islands, Japan. *Bulletin of the National Museum*

of Natural Science, Series A, Supplement 5(February 21):71-82. ABS: During SCUBA diving collections of shallow water aphotic submarine caves in Okinawa Islands, Ryukyu Islands, two specimens representing the caridean genus *Bresilia* Calman, 1896 were collected. A new species, *B. ruficulus*, is described on the basis of these two specimens, increasing the number of species in the genus to eight. It is referred to the *B. antipodarum* Bruce, 1990 species group, and is morphologically similar to *B. gibbosa* Komai & Yamada, 2010 and *B. saldanhai* Calado, Chevvaldonné & dos Santos, 2004, both collected from submarine caves. Differentiating characters among the six species of the species group are discussed. This new species has a somewhat reduced and reflective cornea and eyestalk with rather limited movability, which may represent an adaptation to the aphotic environments. KW: Crustacea, Decapoda, Caridea, Bresiliidae, *Bresilia*, new species, marine cave, Japan.

KOMNENOV (Marjan), 2011. Preliminary report on the results of investigation on the cave spider fauna in the frame of international speleological expedition to mountain Hekurave, south slopes of Prokletije, Albania. *Progressione* 57(April):144-146. <http://www.boegan.it/index.php?id=562>

KOPERSKI (Paweł), DUMNICKA (Elżbieta) & GALAS (Joanna), 2011. Abiotic parameters determining fauna composition in karstic springs. *Polish Journal of Ecology* 59(1):153-163. ABS: The biotic diversity of springs is specific, which makes them valuable sites important for nature protection. Springs located in the Krakow-Częstochowa Upland (southern Poland) are characterized by low variability of environmental conditions, but their benthic fauna composition is considerably different. Benthic invertebrates, water chemistry as well as sediment characteristics of 25 springs were studied four times in 2003. The relationships between fauna composition and abiotic parameters were ascertained using multivariate statistical analyses. In total, fifty families or subfamilies and four higher taxa of invertebrates were identified in the springs studied. Only *Gammarus fossarum* (Amphipoda) occurred in all of the springs, whereas crenophilic taxonomic groups such as Turbellaria, Bythinellinae, Némouridae, Limoniidae, Limnephilidae and Enchytraeidae as well as ubiquitous taxa such as Tubificidae and Chironomidae were very common but not present in all springs. Important factors determining differences in the taxonomic composition (at the family level) of the invertebrate fauna of springs were found to be those connected with their geographical location as well as chemical and discharge parameters, which were different for southern and northern groups of springs. The taxonomic richness, i. e. the number of invertebrate taxa, was found to be strongly dependent on discharge and the content of organic matter in bottom sediments, whereas specific taxa mentioned above had other abiotic determinants such as alkalinity, NO₃ and temperature. KW: Macroinvertebrates, multivariate analysis, springs, crenobiology, Poland. <http://www.pol.j.ecol.cbe.pan.pl/>

KORBEL (K. L.) & HOSE (G. C.), 2011. A tiered framework for assessing groundwater ecosystem health. *Hydrobiologia* 661(1, February)329-349, from the issue entitled "Lake Restoration: An Experimental Ecosystem Approach for Eutrophication Control", Guest Editors: D. P. Hamilton, M. J. Landman, QuickBird Satellite Imagery as a Tool for Restoration and Rehabilitation of Lake Sevan, Armenia, Guest Editor: Martin A. Stapanian. **DOI:** <http://dx.doi.org/10.1007/s10750-010-0541-z>. ABS: The notion of ecosystem health has been widely adopted in environmental policy, particularly in the management of river systems. Despite this, even a notional understanding of ecosystem health and its assessment in connected aquifer ecosystems remains elusive. In this article, we propose a definition and provide a tiered framework for the assessment of ecosystem health in groundwater. From the literature we identify general attributes of a healthy groundwater ecosystem and from these develop primary (Tier 1) indicators of health. Where Tier 1 benchmarks are exceeded or more detailed assessment is required, we discuss a range of indicators (Tier 2) that may together generate a multimetric index of groundwater health. Our case study using samples from an alluvial aquifer in north-western New South Wales, Australia, demonstrates the utility of both tiers of the framework, and the ability of the approach to separate disturbed and undisturbed sites. The process of multimetric

development is simple and our Tier 2 benchmarks determined from limited data. Nevertheless, our framework will be applicable and readily adaptable to site-specific contexts. KW: Groundwater, Ecosystem health, Indicators, Aquifers, Stygofauna, Groundwater ecosystems. Handling editor: S. A. HALSE.

KORNOBIS (E.), P  LSSON (S.), SIDOROV (D. A.), HOLSINGER (J. R.) & KRISTJ  NSSON (B. K.), 2011. Molecular taxonomy and phylogenetic affinities of two groundwater amphipods, *Crangonyx islandicus* and *Crymostygius thingvallensis*, endemic to Iceland. *Molecular Phylogenetics and Evolution* 58(3, March):527-539. DOI: <http://dx.doi.org/10.1016/j.ympev.2010.12.010>. ABS: The amphipod superfamily Crangonyctoidea is distributed exclusively in freshwater habitats worldwide and is characteristic of subterranean habitats. Two members of the family, *Crangonyx islandicus* and *Crymostygius thingvallensis*, are endemic to Iceland and were recently discovered in groundwater underneath lava fields. *C. islandicus* belongs to a well-known genus with representatives both in North America and in Eurasia. *C. thingvallensis* defines a new family, Crymostygiidae. Considering the incongruences observed recently between molecular and morphological taxonomy within subterranean species, we aim to assess the taxonomical status of the two species using molecular data. Additionally, the study contributes to the phylogenetic relationships among several crangonyctoidean species and specifically among species from four genera of the family Crangonyctidae. Given the available data we consider how the two Icelandic species could have colonized Iceland, by comparing geographical origin of the species with the phylogeny. Regions of two nuclear (18S and 28S rRNA) and two mitochondrial genes (16S rRNA and COI) for 20 different species of three families of the Crangonyctoidea were sequenced. Four different methods were used to align the RNA gene sequences and phylogenetic trees were constructed using bayesian and maximum likelihood analysis. The Crangonyctidae monophyly is supported. *C. islandicus* appeared more closely related to species from the Nearctic region. *C. thingvallensis* is clearly divergent from the other species of Crangonyctoidea. *Crangonyx* and *Synurella* genera are clearly polyphyletic and showed a geographical association, being split into a Nearctic and a Palearctic group. This research confirms that the studied species of Crangonyctidae share a common ancestor, which was probably widespread in the Northern hemisphere well before the break up of Laurasia. The Icelandic species are of particular interest since Iceland emerged after the separation of Eurasia and North America, is geographically isolated and has repeatedly been covered by glaciers during the Ice Age. The close relation between *C. islandicus* and North American species supports the hypothesis of the Trans-Atlantic land bridge between Greenland and Iceland which might have persisted until 6 million years ago. The status of the family Crymostygiidae is supported, whereas *C. islandicus* might represent a new genus. As commonly observed in subterranean animals, molecular and morphological taxonomy led to different conclusions, probably due to convergent evolution of morphological traits. Our molecular analysis suggests that the family Crangonyctidae needs taxonomic revisions. KW: rDNA, Crustacea, Amphipoda, Crangonyctoidea, Molecular phylogeny, Alignment methods.

KRUCKENHAUSER (Luise), HARING (Elisabeth), SEEMANN (Robert) & SATTMANN (Helmut), 2011. Genetic differentiation between cave and surface-dwelling populations of *Garra barreimiae* (Cyprinidae) in Oman. *BMC Evolutionary Biology* 11(1):172. DOI: <http://dx.doi.org/10.1186/1471-2148-11-172>. ABS: Background: Phenotypic similarities among cave-dwelling animals displaying troglomorphic characters (e. g. reduced eyes and lack of pigmentation) have induced a long-term discussion about the forces driving convergent evolution. Here we introduce *Garra barreimiae* Fowler & Steinitz, 1956, as an interesting system to study the evolution of troglomorphic characters. The only hitherto known troglomorphic population of this species lives in Al Hoota Cave (Sultanate of Oman) close to a surface population. As a first approach, we assessed the genetic differentiation between the two morphotypes of *G. barreimiae* to determine whether gene flow still occurs. Results: We analysed the mitochondrial control region (CR). In *G. barreimiae* the CR starts immediately downstream of the tRNA-Thr gene, while the tRNA-Pro gene is missing at this genomic location. Interestingly, a putative tRNA-Pro sequence is found within the CR. The phylogenetic analyses of the CR sequences yielded a tree divided into three clades: Clade 1 has a high

genetic distance to the other clades and contains the individuals of three populations which are separated by a watershed from all the others. Clade 2 comprises the individuals from Wadi Bani Khalid, the geographically most remote population. Clade 3 comprises all other populations investigated including that of Al Hoota Cave. The latter forms a haplogroup which also includes individuals from the adjacent surface population. Conclusions: Our data indicates that the troglomorphic cave population is of quite recent origin supporting the hypothesis that selection drives the fast evolution of troglomorphic traits. In this context pleiotropic effects might play an important role as it has been shown for *Astyanax*. There seems to be some gene flow from the cave population into the adjacent surface populations. One blind individual, found at a surface locality geographically distinct from Al Hoota Cave, is genetically differentiated from the other blind specimens indicating the probable existence of another cave population of *G. barreimiae*. The phylogeographic analyses show that while some of the surface populations are either still in contact or have been until recently, the population Wadi Bani Khalid is genetically separated. One group consisting of three populations is genetically highly differentiated questioning the conspecificity with *G. barreimiae*.

LACK (Justin B.), NICHOLS (Randilea D.), WILSON (Gregory M.) & VAN DEN BUSSCHE (Ronald A.), 2011. Genetic Signature of Reproductive Manipulation in the Phylogeography of the Bat Fly, *Trichobius major*. *Journal of Heredity* 102(6, November/December):705-718. DOI: <http://dx.doi.org/10.1093/jhered/esr090>. ABS: The bat fly (*Trichobius major*) is a blood-feeding ectoparasite of the cave myotis (*Myotis velifer*). A recent mitochondrial DNA (mtDNA) study examining population structure of *T. major* in the South Central United States detected a single haplotype from all individuals examined (N 48 from 12 different caves), representing one of only a few known examples of such widespread mtDNA uniformity. We examined nuclear genetic diversity using amplified fragment length polymorphism and detected high levels of nuclear genetic diversity in all populations sampled. Amplified fragment length polymorphism analyses indicated significant levels of gene flow among caves >700 km apart, suggesting the absence of mtDNA diversity in *T. major* is the result of a selective sweep, not a demographic event (i. e., a recent bottleneck). One mechanism by which mtDNA sweeps occur in arthropods is through bacterial parasites that manipulate host reproduction and mtDNA inheritance. We used PCR to test for the presence of all known reproductive parasites and detected a widespread infection (91.33% infection rate) of *T. major* with a novel *Arsenophonus bacterium*, as well as the infection of 2 individuals (1.16% infection rate) with a novel strain of *Rickettsia*. We discuss the implications for *T. major* phylogeography and the necessity of a bigenomic approach in arthropod population genetics. KW: AFLP, *Arsenophonus*, bat fly, *Rickettsia*, reproductive parasites, *Trichobius major*.

LAMICHHANE (N.) & GHIMIRE (R.), 2011. Second record of *Hipposideros fulvus* in Nepal. *Small Mammal Mail* 2(2, July/December 2010, January 2011):27-28. <http://www.zoosprint.org/shownewslettersBackIssue.asp?hidNewsLetter=11>

LATELLA (Latella) & SAMBUGAR (Beatrice), 2011. Sandro RUFFO. Remind of a master. August 26, 1915 - May 7, 2010. *Subterranean Biology* 8(2010, Published:11.III.2011):69-70. DOI: <http://dx.doi.org/10.3897/subtbiol.8.1234>.

LATELLA (Latella) & SAURO (Ugo), 2011. Note di Storia Naturale del sottosuolo dei Monti Lessini e del suo popolamento. *Scienze naturali*:57-64. RIAS: Il sistema di cavit   sotterranee di tipo carsico dei Monti Lessini si    formato in molti milioni di anni e ospita una singolare fauna di invertebrati che si    evoluta al suo interno; nell'articolo    brevemente descritto il caso delle Grotta dell'Arena, uno dei biositi cavernicoli pi   interessanti delle Alpi.

LATINNE (Alice), WAENGSOETHORN (Surachit), HERBRETEAU (Vincent) & MICHAUX (Johan R.), 2011. Evidence of complex phylogeographic structure for the threatened rodent *Leopoldamys neilli*, in Southeast Asia. *Conservation Genetics* 12(6, December):1495-1511. DOI: <http://dx.doi.org/10.1007/s10592-011-0248-3>. ABS: *Leopoldamys neilli* is a threatened murine rodent species endemic to

- limestone karsts of Thailand. We have studied the phylogeography of *L. neilli* using two mitochondrial markers (cytb, COI) and one nuclear fragment (bfibr), in order to assess the influence of its endemism to karst habitat. One hundred fifteen individuals of *L. neilli* were collected in 20 localities throughout the geographic range of this species in Thailand. Our study revealed strong geographic structure of the mtDNA genetic diversity: six highly differentiated, allopatric genetic lineages were observed in our dataset. They exhibit a very high degree of genetic divergence, low gene flow among lineages and low levels of haplotype and nucleotide diversities within lineages. Our results suggest that *L. neilli*'s populations are highly fragmented due to the scattered distribution of its karst habitat. The most divergent lineage includes the populations from western Thailand, which have been separated from the other genetic lineages since at least the Early Pleistocene. The other lineages are more closely related and have diverged since the Middle Pleistocene. This study revealed an unexpected high level of genetic differentiation within *L. neilli* and highlighted the high endemism of this species to limestone karsts. Our results enhance the importance of protecting limestone habitats to preserve not only the species but also intraspecific diversity. KW: Southeast Asia, *Leopoldamys neilli*, Limestone karsts, Conservation, Phylogeography, Intraspecific diversity.
- LATINNE (Alice), WAENGSOOTHORN (Surachit), RISTERUCCI (Ange Marie) & MICHAUX (Johan R.), 2011.** Isolation, Characterization and PCR Multiplexing of Polymorphic Microsatellite Markers in the Threatened Murine Rodent, *Leopoldamys neilli*. *Conservation Genetics Resources* 3(3, July):511-513. DOI: <http://dx.doi.org/10.1007/s12686-011-9391-x>. ABS: *Leopoldamys neilli* is a threatened murine rodent species endemic to limestone karsts of Thailand. Twelve microsatellite loci were identified using the method of microsatellite-enriched libraries. Polymorphism was assessed in samples (N = 62) from four geographically distinct populations in Thailand. Number of alleles per locus ranged from 9 to 15 (average 11.6). Observed and expected heterozygosities varied from 0.28 to 1.0 and from 0.44 to 0.91, respectively. There was no evidence for linkage disequilibrium, however, four loci showed evidence of departure from Hardy-Weinberg equilibrium in one population. Presence of null alleles was not detected in all the 12 loci. These first microsatellite primers developed for *L. neilli* will provide information on the fine-scale genetic structure of this threatened species and will help in the development of future conservation policies. KW: *Leopoldamys neilli*, Murine rodent, Microsatellite, Multiplex, Genetic structure, Southeast Asia.
- LEACH (Emily), 2011.** Dr Diana NORTHUP. <http://tedxabq.com/2011-speakers/dr-diana-e-northup/>
- LEFEBVRE (D.) & REMACLE (L.), 2011.** Spéléos et Chiros: le début d'une histoire d'amour? *L'Écho des Rhinos* 66(Avri/Mai):1.
- LEIJS (Remko), BLOECHL (Armin) & KOENEMANN (Stefan), 2011.** *Bogidiella veneris*, a New Species of Subterranean Amphipoda (Bogidiellidae) from Australia, with Remarks on the Systematics and Biogeography. *Journal of Crustacean Biology* 31(3, July):566-575. DOI: <http://dx.doi.org/10.1651/11-3476.1>. ABS: A new species of subterranean amphipod, *Bogidiella veneris*, from Venus Bay, South Australia is described. The species was found in a groundwater observation well drilled in an aeolianite limestone formation only 500 m from the seashore. The discovery of the new bogidiellid amphipod is one of the outcomes of a three year stygofauna survey in South Australia. *Bogidiella veneris* is the fourth species of Bogidiellidae from the Australian region. KW: Anchieline, *Bogidiella veneris*, DNA sequencing, groundwater fauna, stygobiont.
- LELANT (Vanessa) & CHENAVAL (Nicolas), 2011.** *Bilan d'une étude chiroptérologique dans trois pays d'Afrique de l'Ouest (Mali, Mauritanie et Sénégal) de novembre 2010 à février 2011.* Novembre 2011, 22 p.
- LESIŃSKI (G.), IGNACZAK (M.) & KOWALSKI (M.), 2011.** Increasing bat abundance in a major winter roost in central Poland over 30 years. *Mammalia* 75(2, May):163-167. DOI: <http://dx.doi.org/10.1515/MAMM.2011.003>. ABS: A bat census in the years 1981-2010 (repeated twice during each hibernation period in January and March) showed upward trends in many populations of bats hibernating in the Szachownica Cave (central Poland). Total numbers of the bat assemblage, which consisted of 11 species, increased within the study period from 178 to 1477 individuals in the first decade to 835-2902 in the past decade of the study, with the highest rates of increase noted in *Barbastella barbastellus*, *Plecotus auritus* and *Myotis nattereri*. *Myotis myotis* and *Myotis daubentonii* showed only slight upward trends. In the years 2009-2010, *Myotis bechsteinii* occurred in markedly higher numbers (up to 24 individuals) as compared to previous years. KW: Abundance, cave, central Europe, Chiroptera, hibernation, long-term changes, upward trend.
- LEWIS (J. J.), BOWMAN (T. E.) & FELLER (D. J.), 2011.** A synopsis of the subterranean asellids of Maryland, U. S. A., with description of *Caecidotea alleghenyensis*, new species (Crustacea: Isopoda: Asellota). *Zootaxa* 2769(February 21):54-64, 6 pl., 21 réf. ABS: Nine species of asellid isopods are reported from groundwater habitats in Maryland. Three of these species are habitually found in springs: *Lirceus brachyurus*, *Caecidotea kenki*, and *C. alleghenyensis*, n. sp. The latter, described herein, is a member of the *hobbsi* group known only from the Allegheny Mountains in Garrett Co. Six species are obligate inhabitants of subterranean waters and are found primarily in Appalachian caves, although some have broad ranges that span noncavernous areas. The obligate subterranean species are *Caecidotea pricei*, *C. franzi*, *C. holsingeri*, *C. mausi*, *C. vandeli* and *C. nordeni*. KW: Asellidae, *Lirceus brachyurus*, *Caecidotea kenki*, *Caecidotea pricei*, *Caecidotea franzi*, *Caecidotea holsingeri*, *Caecidotea mausi*, *Caecidotea vandeli*, *Caecidotea nordeni*. <http://www.mapress.com/zootaxa/list/2011/2769.html>
- LIPOVŠEK (S.), NOVAK (T.), JANŽEKOVIČ (F.) & PABST (M. A.), 2011.** Role of the fat body in the cave crickets *Troglophilus cavicola* and *Troglophilus neglectus* (Rhaphidophoridae, Saltatoria) during overwintering. *Arthropod Structure & Development* 40(1, January):54-63. DOI: <http://dx.doi.org/10.1016/j.asd.2010.09.002>. ABS: The cave crickets *Troglophilus cavicola* and *Troglophilus neglectus* are the most widely distributed European species of the family Rhaphidophoridae. Their life cycles span two years. They overwinter twice in caves in 4-6 months lasting diapause, *T. cavicola* in warmer microhabitats. In caves, older *T. cavicola* undergo sexual maturation, while *T. neglectus* do not. We hypothesized that the use of energy-supplying compounds and reserve proteins in the fat body is more extensive in *T. cavicola* than in *T. neglectus*. We analyzed the contents and morphology of lipid droplets, glycogen rosettes and protein granula at the beginning, the middle and the end of overwintering applying optic, TEM and biochemical methods. In all individuals, the fat body is composed of about 40 oval ribbons consisted of gradually changing adipocytes and urocytes. *T. cavicola* use glycogen continuously, and stop using lipids in the middle of overwintering, while this is inverse in *T. neglectus*. Till the middle of overwintering, all individuals exploit proteins, afterwards they are unevenly exploited. We found that the fat body is differently engaged in metabolism of both cave crickets during overwintering, supporting a more glycogen dependant metabolism in *T. cavicola*, and a more lipid dependant one in *T. neglectus*. KW: Diapause, Fat body, Dynamics of reserve substances, Adipocytes, Urocytes.
- LIPS (Bernard), 2011.** Expédition Kundudo 2011 (Éthiopie) et histoplasmose. *Info CREI* 49(2^e trimestre):2.
- LIPS (Bernard), 2011.** Synthèse des activités 2010 du GS Vulcain. *Écho des Vulcains* 68(Avril 2011):145-216. BL: Cf p. 151 (2 réf.), 154-155, 157-158, 166, 180, 197, 202-203, 205-206, 206, 208, 213 (2 réf.).
- LIPS (Bernard), LIPS (Josiane) & ROBERT (Xavier), 2011.** Bornéo 2010. Expédition spéléologique au Kalimantan (Indonésie), 28 juillet au 30 août 2010. *Écho des Vulcains* 68(Avril 2011):33-97. Voir: LIPS (Josiane), Chapitre V, Biologie souterraine:86-95, dessins de Daniel ARIAGNO + p. 195, photo de Chauve-souris dans Lubang Gedung du 18.VIII.2010 par Bernard LIPS.
- LIPS (Josiane), 2011.** Biologie souterraine:86-95, dessins de Daniel ARIAGNO + p. 195, photo de Chauve-souris dans Lubang Gedung du 18.VIII.2010 par Bernard LIPS. In: LIPS (Bernard), LIPS (Josiane) & ROBERT (Xavier),

- Bornéo 2010. Expédition spéléologique au Kalimantan (Indonésie), 28 juillet au 30 août 2010. *Écho des Vulcains* 68(Avril 2011):33-97.
- LIU (J.-N.) & KARASOV (W. H.), 2011.** Hibernation in warm hibernacula by free-ranging Formosan leaf-nosed bats, *Hipposideros terasensis*, in subtropical Taiwan. *Journal of Comparative Physiology B: Biochemical, Systemic, and Environmental Physiology* 181(1, January):125-135, DOI: <http://dx.doi.org/10.1007/s00360-010-0509-3>. ABS: The subtropical Formosan leaf-nosed bats, *Hipposideros terasensis* (Hipposideridae), show little activity during winter. It has never been determined whether in winter they exhibit hibernation and multi-day periods of low body temperature. The objectives of this study were to understand the winter activity pattern of *H. terasensis* and to examine whether it enters hibernation during winter. We monitored the skin temperature (T_{sk}) of nine free-ranging *H. terasensis* by attaching temperature-sensitive transmitters during the winters of 2007-2008 and 2008-2009. The results showed that *H. terasensis* entered hibernation from late December to early March. *H. terasensis*, however, differs from temperate hibernating bats in several ways: (1) it is capable of hibernation at roost temperature (T_r) and $T_{sk} > 20^\circ\text{C}$; (2) hibernation at high T_r and T_{sk} does not lead to a relatively high arousal frequency; and (3) adults do not increase body mass in autumn prior to hibernation. To test the hypothesis that *H. terasensis* feeds frequently during the hibernation period to compensate for the high energetic demands of hibernating in warm hibernacula, we recorded the number and timing of bats that emerged from and entered into a hibernaculum, which contained more than 1000 bats. From 30 December 2007 to 29 February 2008, an average of only 8.4 bats (<1%) per night (29 nights) emerged from the hibernaculum. Adult bats lost an average of 13-14% of body mass during an approximately 70-day hibernation period. We suggest that *H. terasensis* might have remarkably low torpid metabolic rates during hibernation. KW: Arousal, Body temperature, Cave-dwelling, Hibernation, Winter activity.
- LÓPEZ-PANCORBO (Alberto) & RIBERA (Carles), 2011.** *Nesticus baeticus* sp. n., a new troglobitic spider species from south-west Europe (Araneae, Nesticidae). *ZooKeys* 89:1-13. DOI: <http://dx.doi.org/10.3897/zookeys.89.921>. ABS: A new troglobitic species, *Nesticus baeticus* sp. n. (♂♀), inhabiting the karst landscapes of the high part of the Cazorla, Segura and Las Villas Natural Park (NE Jaén, Spain) where it has been found in 8 caves is diagnosed and described, its distribution and habitat are also analyzed. The new species belongs to the Iberian species group that includes *Nesticus luquei*, *Nesticus lusitanicus* and *Nesticus murgis*. Evolutionary relationships of the Iberian *Nesticus* species are discussed on the basis of morphological and molecular data (cox1 and rnl). KW: Arachnida, Araneae, taxonomy, description, new species, caves, Iberian Peninsula, Mediterranean basin.
- LORIA (Stephanie F.), ZIGLER (Kirk S.) & LEWIS (Julian J.), 2011.** Molecular phylogeography of the troglobiotic millipede *Tetracion* Hoffman, 1956 (Diplopoda, Callipodida, Abacionidae). *International Journal of Myriapodology* 5:35-48. DOI: <http://dx.doi.org/10.3897/ijm.5.1891>. ABS: More than 85 species of cave-obligate (troglobiotic) millipede have been described from North America. Understanding the patterns and processes that determine their distribution in this region is an area of recent research. Here, we present the first molecular phylogeographic study of troglobiotic millipedes. Millipedes of the genus *Tetracion* Hoffman, 1956 (Callipodida: Abacionidae) inhabit caves on the Cumberland Plateau in Tennessee and Alabama, a global hotspot for cave biodiversity. Three species have been described: *Tetracion jonesi* Hoffman, 1956, *Tetracion antraeum* Hoffman, 1956, and *Tetracion tennesseensis* Causey, 1959. To examine genetic divergence within and between species of *Tetracion* we sequenced part of the mitochondrial cytochrome oxidase 1 gene from 53 individuals from eleven caves across the range of *Tetracion tennesseensis* and in the northern part of the range of *Tetracion jonesi*. We found: (1) little variation within species (six haplotypes in *Tetracion tennesseensis* and four haplotypes in *Tetracion jonesi*, with a maximum of 1.4% intraspecific divergence between haplotypes), (2) that gene flow between caves is limited (7 of 10 haplotypes were restricted to a single cave, and $F_{ST} > 0.80$ and $P < 0.05$ for fifteen of eighteen comparisons between caves), and (3) significant genetic divergence between species (8.8% between *Tetracion tennesseensis* and *Tetracion jonesi*). Our results are consistent with previous morphology-based species definitions showing *Tetracion tennesseensis* and *Tetracion jonesi* belonging to distinct taxa. Our research contributes to the growing body of phylogeographic information about cave species on the Cumberland Plateau, and provides a point of comparison for future studies of troglobionts and millipedes. KW: Tennessee, Alabama, USA, millipedes, cytochrome oxidase 1 gene, genetic variation.
- LUNDBERG (J.) & McFARLANE (D. A.), 2011.** A note on the occurrence of a crayback stalagmite at Niah Caves, Borneo. *International Journal of Speleology* 40(1, January):39-43. DOI: <http://dx.doi.org/10.5038/1827-806X.40.1.5>. ABS: Crayback stalagmites have mainly been reported from New South Wales, Australia. Here we document a small crayback in the entrance of Painted Cave (Kain Hitam), part of the Niah Caves complex in Sarawak, Borneo. Measuring some 65 cm in length and 18 cm in height, this deposit is elongate in the direction of the dominant wind and thus oriented towards the natural tunnel entrance. It shows the classic humpbacked long profile, made up of small transverse segments or plates, in this case the tail extending towards the entrance. The dark blue-green colour down the centre suggests that cyanobacterial growth follows the track of the wind-deflected roof drip. The dry silty cave sediment provides material for accretion onto the biological mat. This is the only example known from Borneo and one of the very few known from outside of Australia. KW: Crayback, stalagmite, cyanobacteria, phototropic, stromatolitic, Sarawak, Malaysia.
- LUŠTRIK (R.), TURJAK (M.), KRALJ-FIŠER (S.) & FIŠER (C.), 2011.** Coexistence of surface and cave amphipods in an ecotone environment. *Contributions to Zoology* 80(2):133-141. ABS: Interspecific interactions between surface and subterranean species may be a key determinant for species distributions. Until now, the existence of competition (including predation) between these groups has not been tested. To assess the coexistence and potential role of interspecific interactions between surface *Gammarus fossarum* and subterranean *Niphargus timavi*, and to determine their micro distributions, we conducted a series of field and laboratory observations. We aimed to determine: (1) species substrate preference, (2) whether the presence of *G. fossarum* influences the habitat choice of *N. timavi*, and (3) possible predation effects on micro habitat choice of small juveniles. Throughout a small river in SW Slovenia, *N. timavi* was predominantly found in leaf litter and gravel, but rarely in sand. In the sand however, we exclusively found juveniles. In contrast, surface *G. fossarum* sheltered mainly in leaf litter. A similar, body size dependent, micro distribution was observed in *G. fossarum*, where small individuals were generally found in gravel and sand. The presence of *G. fossarum* affected the micro distribution of juvenile, but not adult, *N. timavi*. In the laboratory we observed predation and cannibalism in both species. *Niphargus timavi*, however, appeared to be a more efficient predator than *G. fossarum*. In particular, juvenile *N. timavi* were most vulnerable to preying by adults of both species. This probably affected the distribution of juvenile *N. timavi* that chose finer substrates when placed with adult individuals in an aquarium with granules of different size. To understand the distribution of subterranean species, the summed effect of intraspecific interactions, as well as surface - subterranean species interactions, in particular between individuals of different size, should be taken into account. KW: Amphipoda, cannibalism, competition, ecotone, microhabitat preference, predation. <http://dpc.uba.uva.nl/cgi/t/text/text-index?c=ctz;sid=a30747b7fe51f6edd2e7907065bc0b88;rgn=main;idno=m8002a03;view=text>
- MACHADO (Ewerton Ortiz), FERREIRA (Rodrigo Lopes) & BRESCOVIT (Antonio Domingos), 2011.** A new troglomorphic *Metagonia* Simon, 1893 (Araneae, Pholcidae) from Brazil. *Zootaxa* 3135(December 19):59-62, 2 pl., 12 réf. <http://www.mapress.com/zootaxa/list/2011/3135.html>
- MAHNERT (V.), 2011.** *Pseudoblothrus infernus* sp. n. (Pseudoscorpiones, Syariniidae) from the Hölloch cave (Schwyz, Switzerland), with new records of *Pseudoblothrus strinatii* Vachon from Switzerland and France. *Revue suisse de Zoologie* 118(1, Mars):11-15. ABS: The new species *Pseudoblothrus infernus* n. sp. is described from the

- Hölloch cave in the canton of Schwyz, Switzerland. It is the third species of this genus recorded from this country. New records are given for *Pseudoblothrus strinatii* Vachon, found in caves of the Jura Mountains of Switzerland (canton of Neuchâtel) and in France (Doubs department).
KW: Biospeology, taxonomy. http://www.ville-ge.ch/mhng/publication03_01.php
- MAKAROV (Slobodan E.), ČURČIĆ (Božidar Petar M.), TOMIĆ (Vladimir T.), RAĐA (Tonći), RAĐA (Biljana), ČURČIĆ (Srećko B.), MITIĆ (Bojan M.) & LUCIĆ (Luka R.), 2011.** Revision of the family Heterolatzeliidae (Diplopoda, Chordeumatida). *Zootaxa* 2994(August 12):33-44, 7 pl., 19 réf. <http://www.mapress.com/zootaxa/list/2011/2994.html>
- MALFAIT (Guillaume), 2011.** Les chauves-souris, des mammifères témoins de l'état de la biodiversité. *Le point sur...* 73(Février):4 p.
- MALLORY (M. L.) & FORBES (M. R.), 2011.** Nest shelter predicts nesting success but not nesting phenology or parental behaviors in high arctic Northern Fulmars *Fulmarus glacialis*. *Journal of Ornithology* 152(1, January):119-126. DOI: <http://dx.doi.org/10.1007/s10336-010-0556-2>. ABS: The physical characteristics of nest sites are thought to influence both the outcome of breeding attempts and breeding behavior in colonial seabirds. We examined the relationship between nest shelter in breeding Northern Fulmars (*Fulmarus glacialis*), at the remote Cape Vera colony on Devon Island, Nunavut, Canada, and timing of nesting, reproductive success, and the amounts of time parents spent in different behaviors. Fulmars nesting in sheltered caves experienced lower predation pressure and produced more chicks than Fulmars nesting on exposed ledges. Experimental nests at such cave sites also had lower depredation rates than experimental nests on ledges. There were no differences between Fulmars at different nest types in their laying dates, incubation shifts, incubation period, or the amount of time they allocated to behaviors at the nest. Parents with nests at sheltered cave sites appeared to have higher thermoregulatory costs. We postulate parental experience is more important than costs associated with physical characteristics of nest sites in influencing behavior of incubating Fulmars. KW: Arctic, Predation, Weather, Incubation, *Fulmarus glacialis*.
- MALONEY (Bridget), ILIFFE (Thomas M.), GELWICK (Frances) & QUIGG (Antonietta), 2011.** Effect of nutrient enrichment on naturally occurring macroalgal species in six cave pools in Bermuda. *Phycologia* 50(2, March):132-143. DOI: <http://dx.doi.org/10.2216/09-83.1>. ABS: Bermuda has one of the highest concentrations of cave systems of any country in the world. As the island's resident human population and tourism expand, its unique subterranean habitats are becoming increasingly threatened by development and eutrophication. The response to nutrient enrichment of six macroalgal species found in Bermuda's anchialine cave pools (landlocked body with a subterranean connection to the ocean) was examined during summer of 2007. We used a combination of nutrient bioassays, productivity measurements, and water quality analysis. *Ulva* sp. (Chlorophyta) responded similarly across all nutrient treatments (+N as 30 µM nitrate, +P as 2 µM phosphate, and +NP as 30 µM nitrate + 2 µM phosphate) at Calabash, which had dissolved inorganic N (DIN):soluble reactive P (SRP) ratios of 13-16, whereas at Harbour Pool, *Ulva* sp. responded best to the +N addition alone. The latter was consistent with very low DIN:SRP (5.8) ratios indicative of potential N limitation in this pool. P limitation was only detected in nutrient assays conducted with *Caulerpa mexicana* (Chlorophyta) collected from Cliff Pool, which had DIN:SRP ratios of 110. *Halymenia floresia* (Rhodophyta) was found to be light rather than nutrient limited in the Emerald cave pool. In some combinations of cave pools (e. g. Grenadier and Deep Blue) and for some macroalgae [e. g. *Caulerpa racemosa* (Chlorophyta), *Caulerpa sertularioides* (Chlorophyta), and *Cryptonemia* sp. (Rhodophyta)], findings were not easily characterized with measured parameters. Our findings illustrate the importance of evaluating individual cave pools as well as individual macroalgal species in each cave pool. Of the six macroalgae examined, *Ulva* sp. and *H. floresia* showed the greatest potential as bioindicators for groundwater quality in Bermudian caves. KW: Bermuda, Eutrophication, Groundwater, Macroalgae, Nitrogen, Nutrient addition, Phosphorus, Productivity.
- MARKS (P.), 2011.** Cave cricket's trick keeps robot chatter confidential. *The New Scientist* 209(2802, March 5):28. DOI: [http://dx.doi.org/10.1016/S0262-4079\(11\)60496-X](http://dx.doi.org/10.1016/S0262-4079(11)60496-X).
- MARRONE (Federico), STOCH (Fabio) & GALASSI (Diana Maria Paola), 2011.** Discovery of a stygobiotic population of the epigeal diaptomid calanoid *Eudiaptomus intermedius* (Steuer, 1897) in Central Italy. *11th International Conference on Copepoda, Mérida, Mexico*:79.
- MARTENS (K.) & SAVATENALINTON (S.), 2011.** A subjective checklist of the Recent, free-living, non-marine Ostracoda (Crustacea). *Zootaxa* 2855(April 29):1-79, 59 réf. <http://www.mapress.com/zootaxa/list/2011/2855.html>
- MARUSIK (Y. M.), 2010.** A new genus of hahniid spiders from Far East Asia (Araneae: Hahniidae). *Zootaxa* 2788(March 11):57-68, 7 pl., 11 réf. BL: Cf p. 57, "The subsequent paper by Pichka (1965) dealing with a description of the blind cave dwelling *Iberina ljevuschkini* from Caucasus". <http://www.mapress.com/zootaxa/list/2011/2788.html>
- Maryland Department of Natural Resources, 2011.** White-Nose Syndrome found in Bats hibernating in Garrett County Cave. Annapolis, Md., April 14. 2 p.
- MAŠÁN (P.) & MADEJ (G.), 2011.** Description of two cave-dwelling mites of the genus *Veigaia* (Acari: Mesostigmata: Veigaiidae) from Belgium: *V. hubarti* sp. n. and *V. leruthi* Willmann, 1935. *Journal of Natural History*, iFirst article, 1-15. DOI: <http://dx.doi.org/10.1080/00222933.2010.535913>. ABS: Two *Veigaia* species (Acari, Mesostigmata, Veigaiidae) are described and illustrated: *V. hubarti* sp. nov., described here as a new species, and *V. leruthi*, which is known primarily from the old original descriptions of Willmann in 1935 and 1936. These species are members of the *V. exigua* group, for which the main diagnostic characters are added, and are both reported as cave dwellers from various subterranean habitats in Belgium. A new key to females of the European species of *V. exigua* group is provided. KW: Acari, *Veigaia*, new species, identification key, Belgium.
- MAUGHAN (Nicolas), 2011.** Analyse d'ouvrage: NEW (T. R.), 2010. *Beetles in conservation*. Wiley-Blackwell, ISBN 978-1-4443-3259-9, Février 2010, 248 p. <http://eu.wiley.com/>. *Bulletin de la Société entomologique de France* 116(3):267-270.
- MAZINA (S. E.) & MAXIMOV (V. N.), 2011.** Photosynthetic organism communities of the Akhshtyrskaya excursion cave. *Biologiya* 2011(1):41-46.
- MAZINA (S. E.) & MAXIMOV (V. N.), 2011.** Photosynthetic organism communities of the Akhshtyrskaya excursion cave. *Moscow University Biological Sciences Bulletin* 66(1, March):37-41, original Russian Text © MAZINA (S. E.) & MAXIMOV (V. N.), 2011, published in *Vestnik Moskovskogo Universiteta, Biologiya* 2011(1):41-46. DOI: <http://dx.doi.org/10.3103/S009639251101007X>. ABS: Flora of the Akhshtyrskaya cave developing in lamplight conditions is investigated. Taxonomic analysis of species and measurement of invasion area are carried out. Formed communities are described, and dominant species are marked out. Correlation between taxonomic structure of invasions and geological and mineralogical properties of substrates are shown. KW: Cave, ecosystem, lamp flora.
- McALLISTER (Chris T.), BURSEY (Charles R.), STEFFEN (Michael A.), MARTIN (Samuel E.), TRUJANO-ALVAREZ (Ana Lilia) & BONETT (Ronald M.), 2011.** *Sphyrnura euryceae* (Monogeneoidea: Polystomatoinea: Sphyrnuridae) from the Grotto Salamander, *Eurycea spelaea* and Oklahoma Salamander, *Eurycea tynerensis* (Caudata: Plethodontidae), in

- Northeastern Oklahoma, U. S. A. *Comparative Parasitology* 78(1, January):188-192. DOI: <http://dx.doi.org/10.1654/4477.1>. ABS: Seventy-four Oklahoma salamanders, *Eurycea tynerensis*, and 12 larval grotto salamanders, *Eurycea spelaea*, were collected from 4 stream sections of Sawmill Hollow Creek, Cherokee County, Oklahoma, and examined for monogenoids. Thirty-seven of 74 (50%) *E. tynerensis* were found to harbor *Sphyranura euryceae*. Fifteen of 25 (60%) of the *E. tynerensis* in the far-downstream section were infested by *S. euryceae*, 8 of 31 (26%) of the mid-downstream Oklahoma salamanders were infested, and 14 of 19 (78%) of the near-downstream *E. tynerensis* had the highest prevalence of *S. euryceae*. Analyses of variance with Fisher's least significant difference test of mean intensity of *S. euryceae* on *E. tynerensis* showed significant variation among groups. One of 2 (50%) *E. spelaea* from the near-downstream section harbored *S. euryceae*; none of the 10 *E. spelaea* from the pond inlet were infested. We report the first population study of *S. euryceae* in *E. tynerensis* and a new host record for this monogenoidean in *E. spelaea*. KW: *Eurycea spelaea*, *Eurycea tynerensis*, grotto salamander, Oklahoma salamander, Caudata, Plethodontidae, Monogenoidea, Polystomatinea, Sphyranuridae, Acanthocephala, *Sphyranura euryceae*, *Fessisensis vanclavei*, Trematoda, prevalence, intensity.
- MELEG (Ioana-Nicoleta), MOLDOVAN (Oana Teodora), IEPURE (Sanda), FIERS (Frank) & BRAD (Traian), 2011.** Diversity patterns of fauna in dripping water of caves from Transylvania. *Annales de Limnologie - International Journal of Limnology* 47(2, January):185-197. DOI: <http://dx.doi.org/10.1051/limn/2011014>. ABS: Recent studies substantiate the importance of the unsaturated zone in ground-water biodiversity of karst areas. Few investigations, however, have addressed the temporal changes in community composition in relation to water physico-chemical features. We provide information on the distribution pattern of the fauna in dripping water at spatial and temporal scales. This is related to variation in water chemistry and other environmental features in five caves within two hydrographic basins of the Pădurea Craiului Mountains (northwestern Romania). The analysis revealed no major pollution in the dripping water. The physico-chemical parameters varied within and between caves over one year. The dripping water fauna is heterogeneously distributed within and between the caves, containing a mixture of epigeal and hypogean species. This emphasizes high microhabitat partition and also underlines the influence of physico-chemical parameters. The species composition among the two hydrographic basins was different. Crustaceans are the best represented in terms of both abundance and species richness. Six out of 15 crustacean species are endemic to the Pădurea Craiului Mountains and four are new to science. All these point to the importance of unsaturated karstic habitats as biodiversity hot spots in ground-water ecosystems. KW: Biodiversity, karst unsaturated zone, Pădurea Craiului Mountains, Romania.
- MERRITT (D. J.) & CLARKE (A. K.), 2011.** Synchronized Circadian Bioluminescence in Cave-Dwelling *Arachnocampa tasmaniensis* (Glowworms). *Journal of Biological Rhythms* 26(1, February):34-43. DOI: <http://dx.doi.org/10.1177/0748730410391947>. ABS: Larvae of the genus *Arachnocampa*, known as glowworms, are bioluminescent predatory insects that use light to attract prey. One species, *Arachnocampa flava*, is known to possess true circadian regulation of bioluminescence: light:dark cycles entrain the rhythm of nocturnal glowing. Given the absence of natural light as a cue in caves, we addressed the question of whether cave populations of *Arachnocampa tasmaniensis*, a species known to inhabit caves as well as epigeal environments, are rhythmic. We found that the major dark-zone cave populations of *A. tasmaniensis* maintain a high-amplitude 24-hour rhythm of bioluminescence, with the acrophase during external daylight hours. Populations of *A. tasmaniensis* in caves many kilometers apart show similar, but not exactly the same, timing of the acrophase. Systematic investigation of colonies in the dark zone of a single cave showed that some smaller colonies distant to the main ceiling colony, also in the dark zone, glow in antiphase. Periodic monitoring of a single colony over several years showed that the acrophase shifted from nocturnal to diurnal some time between October 2008 and January 2009. Prey availability was investigated as a possible zeitgeber. The acrophase of prey availability, as measured by light trapping, and the acrophase of bioluminescence do not precisely match, occurring 3 hours apart. Using in-cave artificial light exposure, we show that after LD cycles, cave larvae become entrained to bioluminescence during the foregoing photophase. In contrast, epigeal larvae exposed to artificial LD cycles after a period of DD become entrained to bioluminescence during the foregoing scotophase. One explanation is that individuals within colonies in the dark zone synchronize their bioluminescence rhythms through detection and matching of each other's bioluminescence. KW: Mutual synchronization, coupled oscillators, epigeal, hypogean, troglophile.
- MESIBOV (Robert), 2011.** New species of *Asphalidesmus* Silvestri, 1910 from Australia (Diplopoda, Polydesmida, Dalodesmidea):43-65. In: GOLOVATCH (S. I.) & MESIBOV (R.), *Advances in the Systematics of Diplopoda 4. ZooKeys* 93, Special Issue, GOLOVATCH (S. I.) & MESIBOV (R.), Eds.:65 p. DOI: <http://dx.doi.org/10.3897/zookeys.93.1255>.
- MIENIS (H. K.), 2011.** Is *Acicula palaestinensis* in need of special protection? *Tentacle* 19(February):29. <http://www.hawaii.edu/cowielab/issues.htm>
- MIRANDA (G. S. de) & GIUPPONI (A. P. de L.), 2011.** A new synanthropic species of *Charinus* Simon, 1892 from Brazilian Amazonia and notes on the genus (Arachnida: Amblypygi: Charinidae). *Zootaxa* 2980(July 29):61-68, 4 pl. 16 réf. <http://www.mapress.com/zootaxa/list/2011/2980.html>
- MITOV (Plamen Genkov), 2011.** A new anophthalmous species of *Paranemastoma* from Bulgaria (Opiliones: Nemastomatidae). *Journal of Arachnology* 39(2, August):303-319. DOI: <http://dx.doi.org/10.1636/CHA10-99.1>. ABS: A new, eyeless species of harvestman, *Paranemastoma beroni*, collected from the Stoykova Dupka 1 Cave in the Slavyanka Mountains (south-western Bulgaria) is described and illustrated. A character combination of the form of the penis, the form of the pedipalps and absence of scutum armament, distinguish the new species from all other *Paranemastoma* species. The closest morphological relative, and the only other eyeless example, is the troglonid *P. bureschi* (Roewer, 1926), which is allopatric (north-western Bulgaria) and clearly differs in the presence of scutum armament and lack of cheliceral apophysis and opening of the cheliceral gland. Characterization and comparison of sculpture in non-troglonid and troglonid *Paranemastoma* species and SEM illustrations are included. A case of cuticular neoteny in troglonids is also reported. KW: Taxonomy, troglonid species, *Paranemastoma beroni* sp. nov., microsculpture, cuticular neoteny, caves, Balkan.
- MOLDOVAN (Oana Teodora), LEVEI (Erika), MARIN (Constantin), BANCIU (Manuela), BANCIU (Horia Leonard), PAVELESCU (Claudia), BRAD (Traian), CÎMPEAN (Mirela-Dorina), MELEG (Ioana-Nicoleta), IEPURE (Sanda) & POVARĂ (Ioan), 2011.** Spatial distribution patterns of the hyporheic invertebrate communities in a polluted river in Romania. *Hydrobiologia* 669(1, July):63-82. DOI: <http://dx.doi.org/10.1007/s10750-011-0651-2>. ABS: The purpose of this study was to examine the sensitivity, in a field situation, of the hyporheic fauna to pollution by heavy metals and also to test the use of oxidative stress enzymes produced by this fauna as a sensitive indicator of oxidative stress generated by chemical contamination. This was done by surveying the patterns of distribution, structure, and composition of hyporheic invertebrate communities in one of the most polluted rivers in Romania. Twelve permanent sampling stations with differing water qualities were established along a 180 km transect of the Arieș River. Data on hyporheic invertebrate abundance and richness, chemistry of the surface and hyporheic water and interstitial suspended particles were analyzed via multifactorial analyses. In the downstream, more polluted stations, epigeal species were less abundant and hyporheic communities, especially macrocrustaceans and oligochetes, became dominant. The higher levels of hyporheic invertebrate biodiversity in the moderately polluted stations compared to highly polluted, and the increase of the number of some hyporheos (especially macrocrustaceans) in the moderately polluted stations, suggested that the hyporheic fauna was more tolerant of heavy metal pollution than the surface water fauna of the area. However, the different richness and abundance of hyporheic

- fauna in sites of similar water chemistry suggested that additional factors, such as sediment structure are shaping the spatial distribution of hyporheic fauna. Strong correlations between superoxide dismutase (SOD) activity in pooled tissues extracts and some chemical parameters suggest that oxidative stress enzymes may prove to be sensitive indicators of chemical pollution in hyporheic zones. KW: Interstitial fauna, Crustacea, Heavy metals, Oxidative stress enzymes, Arieş River.
- MOLDOVAN (Oana Teodora), MELEG (Ioana-Nicoleta) & PERȘOIU (Aurel), 2011.** Habitat fragmentation and its effects on groundwater populations. *Ecohydrology* ? DOI: <http://dx.doi.org/10.1002/eco.237>. ABS: The subterranean unsaturated zone of the karstic areas is highly fragmented. The maze of more or less connected voids harbors simple communities of mixed surface and subterranean species, especially crustaceans. Hypogean species are dominant in almost all communities of the seven stations sampled monthly in a cave of the north-western Romania. Water stable isotopes and drip rates were used to understand the morphological and spatial organization of the subterranean habitats in the unsaturated zone. The structure of the cave communities, the species synchrony and the spatial structure and variation of communities at different geographical levels are discussed in conservation terms. KW: Cave Crustacea, metacommunity, habitat fragmentation, drip water, stable isotopes.
- MOORE (Robin D.), 2011.** The Search for "Lost" Frogs. *Froglog* 95(March):13-16.
- MORI (Nataša), SIMČIČ (Tatjana), LUKANČIČ (Simon) & BRANCELJ (Anton), 2011.** The effect of in-stream gravel extraction in a pre-alpine gravel-bed river on hyporheic invertebrate community. *Hydrobiologia* 667(1, June):15-30. DOI: <http://dx.doi.org/10.1007/s10750-011-0648-x>. ABS: We investigated the effect of in-stream gravel extraction in a pre-alpine gravel-bed river on hyporheic invertebrate community, together with changes in the hyporheic geomorphology, physico-chemistry and biofilm activity. Hyporheic invertebrates were collected, together with environmental data, on seven sampling occasions from June 2004 to May 2005, at two river reaches-at the site of in-stream gravel extraction and at a site 2.5 km upstream. The hyporheic samples were taken from the river bed and from the gravel bars extending laterally from the stream channel. The invertebrate community was dominated by insect larvae (occasional hyporheos), followed by meiofauna (permanent hyporheos). Stygobionts were present at low species richness and in low densities. Gravel extraction from the stream channel led to changes in the patterns of water exchange between surface and subsurface and changes in the sediment composition at the site. Immediate reductions in density and taxonomic richness of invertebrates were observed, together with changes in their community composition. The hyporheic invertebrate community in the river recovered relatively fast (in 2.5 months) by means of density and taxonomic richness, while by means of community composition invertebrates needed 5-7 months to recover. The impact of fine sediments (<0.1 mm) on biofilm activity measured through ETS activity and hyporheic invertebrate density and taxonomic richness was strongly confirmed in this study. KW: Disturbance, In-stream gravel extraction, Pre-alpine river, Hyporheic zone, Invertebrates, Biofilm.
- MÜLLER (G. C.), KRAVCHENKO (V. D.), RYBALOV (L.) & SCHLEIN (Y.), 2011.** Characteristics of Resting and Breeding Habitats of Adult Sand Flies in the Judean Desert. *Journal of Vector Ecology* 36(s1, March):S195-S205. DOI: <http://dx.doi.org/10.1111/j.1948-7134.2011.00131.x>. ABS: Recently, in several areas of the Middle East, a sharp increase of cutaneous leishmaniasis was observed in suburbs of larger towns including Jerusalem. In some of these areas, poor housing conditions and unsuitable waste management was suspected to provide ideal conditions for sand fly breeding, but hard data on diurnal resting sites and breeding habitats of most sand fly species are scant. In this study, we chose 16 sites on both slopes and the bottom of a natural valley in the Judean Desert to conduct a survey of sand fly distribution with emergence traps. Altogether, 1261 sand flies, 52% *Phlebotomus syriacus*, 22% *P. sergenti*, 14% *P. papatasi* and 12% *P. tobbi* were caught. About two thirds of the flies caught were resting, while the other third emerged from breeding sites. All four species showed clear preferences for resting and breeding sites, but generally, most sand flies were breeding in the more humid habitats, namely the bottom of the valley, the adjacent north facing slope, terraces on the north facing slope, and caves. The vegetation cover also appeared to be important for resting habitats; on the bottom of the valley more than six times as many sand flies were collected in areas covered by dense vegetation than in areas with low vegetation cover. *P. sergenti* seemed also to better tolerate the drier habitats, which might explain the abundance of this species in the arid Judean Desert. KW: Sand fly breeding and resting sites, emergence traps, *Phlebotomus syriacus*, *P. sergenti*, *P. papatasi*, *P. tobbi*, Israel.
- Muséum d'Histoire naturelle de Bourges, 2011.** *Bibliographie française sur les Chauves-souris*. 10/2011, 101 p.
- NAVEL (Simon), SIMON (Laurent), LÉCUYER (Christophe), FOUREL (François) & MERMILLOD-BLONDIN (Florian), 2011.** The shredding activity of gammarids facilitates the processing of organic matter by the subterranean amphipod *Niphargus rhenorhodanensis*. *Freshwater Biology* 56(3, March):481-490. DOI: <http://dx.doi.org/10.1111/j.1365-2427.2010.02513.x>. SUM: 1. The functional feeding group approach has been widely used to describe the community structure of benthic invertebrates in relation to organic matter resources. Based on this functional framework, positive interactions between feeding groups (especially shredders and collector-gatherers) were postulated in the River Continuum Concept. However, relationships with organic matter have been poorly documented for invertebrates living in the hyporheic zone. 2. We hypothesised that the common subterranean amphipod *Niphargus rhenorhodanensis* would feed on fine particulate organic matter (FPOM), which is more abundant than coarse particulate organic matter (CPOM) in hyporheic habitats, and should be favoured by the occurrence of shredders that produce FPOM from CPOM. 3. We used laboratory experiments to quantify leaf litter processing by *N. rhenorhodanensis* and a common shredder, the surface amphipod *Gammarus roeselii*. We estimated rates of feeding and assimilation (using nitrogen stable isotopes) of the two species separately and together to reveal any potential shredder-collector facilitation between them. 4. Measured leaf litter mass loss showed that *N. rhenorhodanensis* did not act as a shredder, unlike *G. roeselii*. Organic matter dynamics and 15N/14N ratios in tissues of niphargids indicated that *N. rhenorhodanensis* was a collector-gatherer feeding preferentially on FPOM. We also found a positive influence of the gammarid shredders on the assimilation rate of *N. rhenorhodanensis*, which fed on FPOM produced by the shredders, supporting the hypothesis of a positive interaction between surface shredders and hyporheic collector-gatherers. KW: Coarse particulate organic matter, fine particulate organic matter, leaf litter breakdown, nitrogen isotopes, river continuum concept, subterranean amphipod.
- NEIBER (Marco T.), HARTKE (Tamara R.), STEMME (Torben), BERGMANN (Alexandra), RUST (Jes), ILIFFE (Thomas M.) & KOENEMANN (Stefan), 2011.** Global biodiversity and phylogenetic evaluation of Remipedia (Crustacea). *PLoS ONE* 6(5):e19627. DOI: <http://dx.doi.org/10.1371/journal.pone.0019627>.
- NELSON (Daniel), 2011.** *Gammarus*-Microbial Interactions: A Review. *International Journal of Zoology* Article ID 295026:6 p. DOI: <http://dx.doi.org/10.1155/2011/295026>. <http://www.hindawi.com/journals/ijz/2011/295026/>
- NELSON (Daniel) & WILHELM (Frank M.), 2011.** Survival and Growth of the Stygophilic Amphipod *Gammarus troglophilus* Under Laboratory Conditions. *Journal of Crustacean Biology* 31(3, July):424-433. DOI: <http://dx.doi.org/10.1651/10-3431.1>. ABS: Amphipods play important roles in the cycling of nutrients and energy in many aquatic systems where they display a wide range of feeding modes ranging from detritivore to predator. Although the biology of many amphipod species has been examined, little is known of hypogean amphipods inhabiting cave streams. *Gammarus troglophilus* is a stygophilic amphipod that co-occurs with the federally endangered stygobiont *G. acherondytes* in cave streams of the Salem Plateau Karst Region of southwestern Illinois. With the goal to establish a self-sustaining laboratory population of cave amphipods to obtain amphipods for lethality experiments, we tested hypotheses relating the survival and growth rates of *G. troglophilus* collected from cave streams to different laboratory conditions of food and water velocity. We used a series of microcosm experiments to test the hypotheses that survival and growth are not affected by type of water

- (cave water vs. amended water), water velocity (static vs. dynamic/recirculating), or the type of available food (sediment vs. sediment, leaf discs, and TetraMin®). We also tested if different food treatments affected the survival and/or growth of juvenile amphipods and newly released neonates in static chambers. Our results indicate that cave water was important for survival because no amphipods survived past 30 days in experiments with water amended to resemble cave water. The addition of food (leaf discs and TetraMin®) and water velocity affected survival but not growth rates in microcosm experiments. Food treatment (leaf discs vs. TetraMin®) did not significantly affect survival or growth rates of juvenile amphipods. However, leaf discs increased the survival and growth of neonate amphipods. Overall, survival was low in all experiments and further research is needed to examine the effects of handling stress on survival during experiments because amphipods left in stock tanks survived and grew well. KW: Cave ecosystems, *Gammarus troglophilus*, growth, stygobionts, survival.
- NG (Peter K. L.), 2011.** *Pele ramseyi*, a new genus and new species of anchialine swimming crab (Crustacea: Brachyura: Portunidae) from the Hawaiian Islands. *Zootaxa* 2737(January 12):34-48, 9 pl., 28 réf. ABS: A new genus and new species of anchialine portunid crab is described from lava pools in Maui, Hawaiian Islands. *Pele ramseyi* new genus, new species, resembles species of *Libystes* A. Milne-Edwards, 1867, but differs markedly in its reduced and almost immovable eyes, as well as the distinctive structures of the mouthparts, chelipeds, male abdomen and gonopods. KW: Decapoda, Crustacea, Brachyura, Portunidae, *Pele*, taxonomy, new genus, new species, Hawaiian Islands. <http://www.mapress.com/zootaxa/list/2011/2737.html>
- NGO (van Tri) & CHAN (Kin Onn), 2011.** A new karstic cave-dwelling *Cyrtodactylus* Gray (Squamata: Gekkonidae) from Northern Vietnam. *Zootaxa* 3125(December 9):51-63, 5 pl., 65 réf. ABS: A new species of bent-toed gecko, *Cyrtodactylus cucphuongensis* sp. nov. is described from the karst forest of Cuc Phuong National Park, Ninh Binh province, Northern Vietnam. It differs from all other species of Indo-Chinese *Cyrtodactylus* by the following combination of characters: SVL 96.0 mm; absence of preloacal and femoral pores; 19 subdigital lamellae on first toe, 24 on fourth toe; large, dark spots on top of head; wide, prominent nuchal band; and five or six dark, irregular, broad bands between limb insertions. KW: *Cyrtodactylus*, Gekkonidae, description, new species, Cuc Phuong National Park, Ninh Binh. <http://www.mapress.com/zootaxa/list/2011/3125.html>
- NIEMILLER (Matthew Lance), NEAR (Thomas J.) & FITZPATRICK (Benjamin M.), 2011.** Delimiting species using multilocus data: Diagnosing cryptic diversity in the Southern Cavefish, *Typhlichthys subterraneus* (Teleostei: Amblyopsidae). *Evolution*. DOI: <http://dx.doi.org/10.1111/j.1558-5646.2011.01480.x>. ABS: A major challenge facing biodiversity conservation and management is that a significant portion of species diversity remains undiscovered or undescribed. This is particularly evident in subterranean animals in which species delimitation based on morphology is difficult because differentiation is often obscured by phenotypic convergence. Multilocus genetic data constitute a valuable source of information for species delimitation in such organisms, but until recently, few methods were available to objectively test species delimitation hypotheses using genetic data. Here, we use recently developed methods for discovering and testing species boundaries and relationships using a multilocus dataset in a widely distributed subterranean teleost fish, *Typhlichthys subterraneus*, endemic to Eastern North America. We provide evidence that species diversity in *T. subterraneus* is currently underestimated and that the picture of a single, widely distributed species is not supported. Rather, several morphologically cryptic lineages comprise the diversity in this clade, including support for the recognition of *T. eigenmanni*. The high number of cryptic species in *Typhlichthys* highlights the utility of multilocus genetic data in delimiting species, particularly in lineages that exhibit slight morphological disparity, such as subterranean organisms. However, results depend on sampling of individuals and loci; this issue needs further study. KW: Bayesian, cave, conservation, phylogenetics, speciation, species tree, subterranean.
- NITZU (Eugen), POPA (Ionuț Sebastian) & GIURGINCA (Andrei), 2011.** Invertebrate fauna (Coleoptera, Collembola, Diplopoda, Isopoda) collected in the karst areas of the Aninei - Locvei Mountains. *Travaux de l'Institut de Spéologie "Émile Racovitza"* 50:15-35. ABS: The authors identified 132 species of invertebrates (14 Oniscidea, 25 Diplopoda, 31 Collembola and 62 Coleoptera) recently sampled (2001-2006) from the soil and subterranean (MSS and caves) environments from the Banat Mountains. Some new, rare and endemic species are discussed. The seasonal changes of the species diversity in the superficial subterranean environments at 0.5 to 1 m in depth are for the first time presented for the Reșița - Moldova Nouă synclinorium. The characteristic and preferential species for the mesovoid shallow substratum (MSS), belonging to the analyzed taxa, are identified. KW: Collembola, Diplopoda, Isopoda, Coleoptera, subterranean, soil environments, MSS, species diversity, seasonal variations. <http://www.speotravaux.iser.ro/11.html>
- NORTHCUTT (R. G.) & GONZÁLEZ (A.), 2011.** A reinterpretation of the cytoarchitectonics of the telencephalon of the Comoran coelacanth. *Frontiers in Neuroanatomy* 5(February 24):1-7. DOI: <http://dx.doi.org/10.3389/fnana.2011.00009>.
- NORTHUP (Diana E.) & JONES (Dan), 2011.** Microorganisms at Cueva de Las Sardinias. *Association for Mexican Cave Studies Activities Newsletter* 34(June):142-?
- Nuit de la Chauve-Souris.com, 2011.** Communiqué de presse. 15^e Nuit Européenne de la Chauve-souris 2011, les 27 et 28 août chez vous! 1 p. <http://www.nuitdelachauvesouris.com/>
- Nuit de la Chauve-Souris.com, 2011.** 15^e Nuit Européenne de la Chauve-souris 2011, les 27 et 28 août chez vous! Survol du dossier de presse. 8 p. <http://www.nuitdelachauvesouris.com/>
- Nuit de la Chauve-Souris.com, 2011.** Programme de la "Nuit Européenne de la Chauve-souris", samedi 27 et dimanche 28 août 2011, version au 23/06/2011, 115 animations au total. 51 p. <http://www.nuitdelachauvesouris.com/>
- Nuit de la Chauve-Souris.com, 2011.** Programme de la "Nuit Européenne de la Chauve-souris", samedi 27 et dimanche 28 août 2011, version au 19/07/2011, 155 animations au total. 64 p. <http://www.nuitdelachauvesouris.com/>
- NYSSSEN (P.), 2011.** Quelques impressions à chaud sur les données récoltées cet hiver. *L'Écho des Rhinos* 65(Février-Mars 2011):11-12.
- O'BRIEN (John), 2011.** Bats of the Western Indian Ocean Islands. *Animals* 1(3, August 16):259-290. DOI: <http://dx.doi.org/10.3390/ani1030259>.
- OLIVEIRA (Claudio), AVELINO (Gleisy S.), ABE (Kelly T.), MARIGUELA (Tatiane C.), BENINE (Ricardo C.), ORTÍ (Guillermo), VARI (Richard P.) & CASTRO (Ricardo M. Corrêa e), 2011.** Phylogenetic relationships within the speciose family Characidae (Teleostei: Ostariophysi: Characiformes) based on multilocus analysis and extensive ingroup sampling. *BMC Evolutionary Biology* 11(September 26):275. <http://www.biomedcentral.com/1471-2148/11/275>
- OLSON (Cory R.), HOBSON (David P.) & PYBUS (Margo J.), 2011.** Changes In Population Size of Bats At A Hibernaculum In Alberta, Canada, In Relation to Cave Disturbance And Access Restrictions. *Northwestern Naturalist* 92(3, December, Winter):224-230. DOI: <http://dx.doi.org/10.1898/1051-1733-92.3.224>. KW: Alberta, bats, Cadomin, cave, census, disturbance, hibernaculum, *Myotis*, population change, Rocky Mountains.
- ORTUÑO (Vicente M.), FRESNEDA (J.) & BAZ (A.), 2011.** New data on *Troglorites breuili* Jeannel, 1919 (Coleoptera: Carabidae: Pterostichini): a hypogean Iberian species with description of a new subspecies [Nouvelles

- données sur *Trogloorites breuili* Jeannel, 1919 (Coleoptera: Carabidae: Pterostichini): a hypogean Iberian species with description of a new subspecies]. *Annales de la Société entomologique de France*, nouvelle série, 46(3/4, 15 Février(2010)):537-549. ABS: A new subspecies of *Trogloorites breuili* Jeannel, 1919 (*T. breuili salgadoi* ssp. n.) which was discovered at Cueva del Viento, Mendaro, Guipúzcoa (Spain), is described. It features a prominent macrocephaly, a strongly transverse pronotum and peculiar cephalic setation. A morphometric analysis is presented, along with a redescription of the nominotypical subspecies - female genitalia are described in detail - and characterization of *T. breuili mendizabali* Jeannel, 1921. The description also includes a chorological update of the three subspecies mentioned above, an inventory of the fauna that lives with each of them, and points are made about their biology and biogeography. RÉSUMÉ: Une nouvelle sous-espèce de *Trogloorites breuili* Jeannel, 1919 (*T. breuili salgadoi* ssp. n.) est décrite de la grotte Cueva del Viento, Mendaro, Guipúzcoa (Espagne). Elle se caractérise par une macrocéphalie proéminente, un pronotum fortement transverse et une cheitotaxie céphalique particulière. Une analyse morphométrique est présentée, ainsi qu'une redescription de la sous-espèce nominale, dont les genitalia sont décrits en détail, de même enfin que *T. breuili mendibazali* Jeannel, 1921. La description inclut aussi une mise à jour de la chorologie de ces trois sous-espèces, une présentation des espèces qui vivent avec chacune d'elles et quelques points sur leur biologie et de leur biogéographie. KW: Underground, taxonomy, biology, biogeography, cave.
- ORTUÑO (Vicente M.) & MARTÍNEZ-PÉREZ (Francisco David), 2011.** Diversidad de Artrópodos en España - Diversity of Arthropods in Spain. *Memorias de la Real Sociedad Española de Historia Natural*, segunda época, 9:235-284. <http://rshn.geo.ucm.es/index.php?d=publicaciones&num=21>
- ORTUÑO (Vicente M.) & SENDRA (A.), 2011.** A new hypogean species of Iberian *Microtyphlus* and review of the taxonomic position of *Speleotyphlus* and *Aphaenotyphlus* (Carabidae: Trechinae: Anillini). *Zootaxa* 2862(May 2):56-68, 9 pl., 32 réf. ABS: A new species of cave-dwelling Anillini (Coleoptera: Carabidae) *Microtyphlus charon* n. sp. is described from the "Surgencia de l'Orao" Cave (Valencia, East Spain). *M. charon* n. sp. is close to two troglomorphic species, *M. infernalis* and *M. alegrei* (new comb.), sharing the same aedeagus morphology. These three species constitute a monophyletic group that is hypothesized as originating in the endogean environment of the southern end of the Iberian Mountain Range, around the Valencia trough. These three species live in caves that were possibly isolated by the Miocene basins. The analysis of key morphological characters in the *Microtyphlus* phyletic series showed that the slenderness of appendages, that defines taxa as *Speleotyphlus* and *Aphaenotyphlus*, are of little phylogenetic value, as this also happens with other troglomorphic features (e. g., depigmentation). However, other morphological characteristics (male aedeagus, chaetotaxy, labial tooth) suggest a close relationship between *Microtyphlus*, *Speleotyphlus* and *Aphaenotyphlus*, which leads us to propose the last two taxa as synonyms of *Microtyphlus*. KW: Arthropoda, Hexapoda, Coleoptera, Carabidae, Anillini, *Microtyphlus*, Taxonomy, Systematic, cave fauna, troglomorphy.
- <http://www.mapress.com/zootaxa/list/2011/2862.html>
- PAKSUZ (Serbüent) & ÖZKAN (Beytullah), 2011.** New Distributional Records and Some Notes for Greater Noctule, *Nyctalus lasiopterus* (Mammalia: Chiroptera) from Turkey. *Acta zoologica bulgarica* 63(2):217-220. [http://www.acta-zoologica-bulgarica.eu/azb_en.php?q=63%20\(2\)](http://www.acta-zoologica-bulgarica.eu/azb_en.php?q=63%20(2))
- PALACIOS VARGAS (José G.) & MEJÍA RECAMIER (B. E.), 2011.** The Mexican cavernicolous *Pseudosinella* (Collembola: Entomobryidae) with description of a new species. *Subterranean Biology* 8(2010, Published:11.III.2011):49-55. [DOI: http://dx.doi.org/10.3897/subtbiol.8.1231](http://dx.doi.org/10.3897/subtbiol.8.1231). ABS: A compilation of the information on the genus *Pseudosinella* from Mexican caves was undertaken and one new species from Puebla State is described and illustrated: *P. rochezi*, sp. nov. It is similar to *P. bonita* Christiansen, 1973 and displays typical troglomorphic characters. An identification key for all Mexican cave species of the genus is presented. KW: Cave fauna, *Pseudosinella*, identification key, México, new taxa.
- PAOLETTI (Maurizio G.), BEGGIO (Mattia), DREON (Angelo Leandro), PAMIO (Alberto), GOMIERO (Tiziano), BRILLI (Mauro), DORIGO (Luca), CONCHERI (Giuseppe), SQUARTINI (Andrea) & ENGEL (Annette Summers), 2011.** A New foodweb based on microbes in calcitic caves: The *Cansiliella* (Beetles) case in Northern Italy. *International Journal of Speleology* 40(1, January):45-52. <http://dx.doi.org/10.5038/1827-806X.40.1.6>. ABS: The troglitic beetle, *Cansiliella servadeii* percolating water on moonmilk, a speleothem formation in Grotta della Foos, Italy. Results from analyses of stable isotopes of carbon and nitrogen suggest that acquires and assimilates dissolved allochthonous organic carbon, inorganic nitrogen, and possibly phosphorus and other nutrients from the microbial fauna associated with moonmilk. KW: *Cansiliella servadeii*, cave, moonmilk, stable isotopes, food web, bacteria, microorganisms.
- PARK (Kyung-Hwa), BERNARD (Ernest C.) & MOULTON (John K.), 2011.** Three new species of *Pogonognathellus* (Collembola: Tomoceridae) from North America. *Zootaxa* 3070(October 27):1-14, 7 pl., 13 réf. BL: Cf p. 13, "Prior to the current paper, there appears to have been little study of tomocerid antennae as has occurred with other families. LUKIĆ & al., 2010 published SEM images and a photomicrograph of the antennae of *Tritomurus veles* Lukić, Houssin & Deharveng, 2010, a Croatian cave species, that provide important information on the antennal setae and shape of the antennal apex". <http://www.mapress.com/zootaxa/list/2011/3070.html>
- PASSEGGI (Julieta M.), 2011.** First Description of the Breeding Chronology of the White-collared Swift (*Streptoprocne zonaris*) in Argentina. *The Wilson Journal of Ornithology* 123(3):613-618. ABS: Nesting activity of the White-collared Swift (*Streptoprocne zonaris*) was monitored from October 2001 to March 2002 to describe the breeding chronology of this species. Data were obtained from the colony "La Cueva de los Pajaritos", near Mallín, Córdoba, Argentina. These are the first descriptions of the nesting chronology of this species in Argentina. The breeding season lasted 81 days from egg laying in early November to fledging in middle to late January. Clutch size ranged from one to two eggs which were incubated for an average of 22 days. Nestlings remained in nests for an average of 44 days and fledglings remained at the site for 5 additional days. These observations provide new information on nesting sites used by *S. zonaris* in Argentina, and provide the first documentation of the length of the breeding phases for the species in South America. The "apparently shortened" length of incubation and nestling periods may be a geographical effect, due to this being the most southeastern known breeding colony for *S. zonaris*. DOI: <http://dx.doi.org/10.1676/10-108.1>
- PASTOR (T.), CAPPOZZO (H. L.), GRAU (E.), AMOS (W.) & AGUILAR (A.), 2011.** The mating system of the Mediterranean monk seal in the Western Sahara. *Marine Mammal Science* 27(4, October 1): E302-E320. DOI: <http://dx.doi.org/10.1111/j.1748-7692.2011.00472.x>. ABS: The mating system of the Mediterranean monk seal was studied combining the use of diverse technologies. Sexual dimorphism in size was limited. Sexual activity was only observed to occur in the water. The different segments of the population segregated spatially: females, pups, and juveniles aggregated inside two main caves, whose entrances were controlled by a small number (2-3) of territorial males that defended aquatic territories situated at the very mouth of the caves. Other territorial males defended aquatic territories located further away (5-30 km). The tenure of aquatic territories was nonseasonal and spanned several years. Relatedness among pups belonging to the same cohort was low or null, indicating a low level of polygyny, which is not surprising for an aquatically mating phocid with a protracted reproductive season. However, in addition, genetic relatedness showed a remarkable temporal periodicity. These results in combination point to the existence of a complex social structure in this species.
- PECK (Stewart B.) & COOK (Joyce), 2011.** Systematics, distributions and bionomics of the Catopocerini (eyeless soil fungivore beetles) of North America (Coleoptera:

- Leiodidae: Catopocerinae). *Zootaxa* 3077(October 28):1-118, 57 pl., 75 r  f.
<http://www.mapress.com/zootaxa/list/2011/3077.html>
- PELLEGRINI (Thais Giovannini) & FERREIRA (Rodrigo Lopes), 2011.** *Coarazuphium tapiaguassu* (Coleoptera: Carabidae: Zuphiini), a new Brazilian troglobitic beetle, with ultrastructural analysis and ecological considerations. *Zootaxa* 3116(December 2):47-58, 10 pl., 17 r  f. ABS: *Coarazuphium tapiaguassu* sp. n. was collected in caves SL 30, SL 31 and SL 35 located in Curion  polis (Par  , Brazil). *C. tapiaguassu* is readily differentiated by the absence of setae on the dorsal surface of the head close to the posterior margin, as the other species of the gens show one, two or tree pairs of setae. Taxa of *Coarazuphium* exhibit advanced troglobiomorphic characters in comparison to other Brazilian cave beetles. Increased extra-optic sensory structures, presence of particular sensilla, and sensory and gustatory receptors are characters not detected under routine microscopy and thus require ultrastructural methods for their study. Similar analyses are needed in other epigeal Zuphiini species for a better interpretation of their functional meaning. KW: *Coarazuphium*, ground beetle, cave dwelling, sensilla, antenna, mouthparts, legs.
<http://www.mapress.com/zootaxa/list/2011/3116.html>
- P  LOZUELO (L.), 2011.** Quand la "terrible mouche velue" r  appar  it... *Inf'OPIE-MP* 23(Janvier/F  vrier):4.
- PENTECOST (A.), 2011.** Some "lamp floras" from tourist caves in northern England. *Cave and Karst Science* 37(3, this issue has a cover date of December 2010 and was published in February 2011):93-98. ABS: Eighteen species of cyanobacteria, 6 species of diatoms, 4 bryophytes, one coccooid green alga and one fern were recorded from the lamp floras of three tourist caves in northern England. Cyanobacteria predominated and were observed growing at photosynthetic photon flux densities ranging from 0.06 - 2.08 $\mu\text{mol m}^{-2} \text{s}^{-1}$. *Eucladium verticillatum* was the most commonly recorded moss and grew at irradiances of 0.55 - 2.08 $\mu\text{mol m}^{-2} \text{s}^{-1}$. Several cyanobacteria possessed phycoerythrin-rich cells and in the case of *Phormidium valderianum* was dependent upon light quality. Direct illumination with fluorescent lamps resulted in phycoerythrin-enriched cells, but phycoerythrin synthesis appeared to be suppressed where radiation was reflected from the walls of the cave. KW: Cyanobacteria, diatoms, irradiance, phycoerythrin, *Eucladium*, aerophytic, subaerial.
<http://bcra.org.uk/pub/candks/index.html?j=111>
- P  REZ FERN  NDEZ (Toni) & CASTRO (A.), 2011.** Nota breve: Primera cita de *Geoselaphus franzi* Besuchet, 1961 en cuevas de la Pen  nsula Ib  rica (Coleoptera, Staphilinidae). *Monograf  as Bioespeleol  gicas* 6:14-15. ABS: *Geoselaphus franzi* Besuchet, 1961 is recorded for the first time from caves of Iberian Peninsula, specifically in the Cueva Secreta del Sagreo (La Iruela, Ja  n).
- P  REZ FERN  NDEZ (Toni) & GARCIA (Lluc), 2011.** Nueva localidad para *Trichoniscus perezii* Garcia, 2008 (Oniscidea: Trichoniscidae) en la provincia de Ja  n (Andaluc  a, Espa  a). *Bolet  n de la Sociedad Entomol  gica Aragonesa* 17:69-70. RES: Se cita una nueva localidad para el is  podo terrestre troglobio *Trichoniscus perezii* Garcia, 2008.
- P  REZ FERN  NDEZ (Toni), MORALES (Mar  a Jos  ) & L  PEZ-COL  N (Jos   Ignacio), 2011.** *Trox (Trox) scaber* (Linnaeus, 1767) (Coleoptera, Trogidae) capturado en una cavidad de Granada. ??? ABS: *Trox (Trox) scaber* (Linnaeus, 1767) is recorded for the first time in a cave from Spanish province of Granada. We report three pictures of one of them.
- P  RY (  .), 2011.** La grotte aux Mille diaclasses. Bazoilles-sur-Meuse (Vosges). *Spelunca* 121(1^{er} trimestre, Mars):23-28. BL: Cf p. 28, *Cacospheroma burgundum* Dollfus.
- PIKSA (Krzysztof), BOGDANOWICZ (Wieslaw) & TEREBA (Anna), 2011.** Swarming of bats at different elevations in the Carpathian Mountains. *Acta Chiropterologica* 13(1, June):113-122. DOI: <http://dx.doi.org/10.3161/150811011X578660>. ABS: Swarming bat activity was monitored at three caves at elevations ranging from 880 m to 1907 m above sea level in the Carpathian Mountains, using an infrared light barrier with data-logger, a video camera with a night-scope system, and subsequently by mist netting. A total of 6175 bats of 19 species was captured, and over 70000 passes through cave openings were registered. Caves differed in bat species richness, sex ratio, abundance of particular species and species composition. Peak species richness was observed in the mid-elevation cave. Bat activity was high in all caves, but declined with increasing altitude. Swarming activity occurred earlier at high elevation than at lower elevations. Activity of boreal-alpine species, such as *Eptesicus nilssonii*, peaked at the start of the swarming period, that of species typical of lower elevations, such as *Myotis emarginatus*, peaked in the middle of the swarming season. In a few species, males showed a significant preference for higher altitude caves, in contrast to females. A similar pattern was observed in the proportion of adults to juveniles, which increased with increasing elevation. Our results also suggest that *M. brandtii* and *M. alcaethoe* were more often encountered at lower elevations, *M. mystacinus* (sensu stricto) at higher ones. KW: *Myotis mystacinus* group, Age structure, Elevational distribution, Night activity, Seasonal activity, Sex ratio, Swarming, Poland.
- PIPAN (Tanja), L  PEZ (Heriberto D.), OROM   (Pedro), POLAK (Slavko) & CULVER (David C.), 2011.** Temperature variation and the presence of troglobionts in terrestrial shallow subterranean habitats. *Journal of Natural History* 45(3/4, January):253-273. DOI: <http://dx.doi.org/10.1080/00222933.2010.523797>. ABS: Within the soil matrix and underlying rock, cracks and fissures and other air-filled spaces between rocks, sometimes called the milieu souterrain superficiel (MSS), are present in a variety of geological contexts. We examined year-long hourly temperature profiles at sites in lava in the Canary Islands and limestone in Slovenia. All sites had species that show morphological adaptations usually associated with cave-dwelling organisms, including elongated appendages and reduced eyes and pigment. MSS sites were studied at depths between 10 and 70 cm and showed strong seasonality, and most had a discernible diurnal cycle as well. The most striking difference from surface habitats was that the temperature extremes were much less pronounced in MSS sites. Temperature variability was not correlated with troglobiotic species richness. The presence of species with similar morphologies to those found in caves indicates that selective pressures are similar in cave and shallow subterranean habitats. KW: Hypogean habitats, milieu souterrain superficiel, shallow subterranean habitats, temperature profiles, troglobionts.
- PISERA (A.) & VACELET (J.), 2011.** Lithistid sponges from submarine caves in the Mediterranean: taxonomy and affinities [Esponjas lithistidas de cuevas submarinas en el Mediterr  neo: su taxonom  a y relaciones]. *Scientia Marina* 75(1, March):17-40. DOI: <http://dx.doi.org/10.3989/scsimar.2011.75n1017>. ABS: Several lithistid sponges are described from Mediterranean caves occurring in the northwestern and Adriatic basins. In the Corallistidae, *Neoschrammeniella bowerbanki* and *Neophrissospongia nolitangere* are recorded for the first time from the Mediterranean, whereas *Neophrissospongia radjae* n. sp. and *Neophrissospongia endoumensis* n. sp. are described as new. In the Theonellidae, the common sponge previously identified as *Discodermia polydiscus* is described as *Discodermia polymorpha* n. sp. Fossil specimens from the 3PP cave are tentatively attributed to *Neoschrammeniella bowerbanki*. The distribution and affinities of this lithistid fauna are discussed. KW: Porifera, lithistids, new species, Mediterranean Sea, submarine caves, biogeographic affinities, fossilized sponges. RES: Se describen varias esponjas lithistidas procedentes de cuevas del noroeste del mar Mediterr  neo y de las cuencas del mar Adri  tico. Dentro de las esponjas incluidas en la familia Corallistidae, *Neoschrammeniella bowerbanki* y *Neophrissospongia nolitangere*, se registran por primera vez en el Mediterr  neo y *Neophrissospongia radjae* n. sp. y *Neophrissospongia endoumensis* n. sp. se describen como nuevas especies. Dentro de la Familia Theonellidae, la esponja com  n, que hasta la fecha se hab  a identificado como *Discodermia polydiscus* se describe como *Discodermia polymorpha* n. sp. Ejemplares f  siles de la cueva de los 3PP se asignan provisionalmente a *Neoschrammeniella bowerbanki*. Se discute la distribuci  n y afinidades de la fauna de las lithistidas. PC: Porifera, lithistidas, nuevas especies, Mediterr  neo, cuevas submarinas, afinidades biogeogr  ficas, esponjas f  siles.

PLATNICK (Norman I.), 2011. The World Spider Catalog, Version 12.0. American Museum of Natural History. New York.

<http://research.amnh.org/iz/spiders/catalog/index.html>.

POHLMAN (J. W.), 2011. The biogeochemistry of anchialine caves: progress and possibilities. *Hydrobiologia*. DOI: <http://dx.doi.org/10.1007/s10750-011-0624-5>.

ABS: Recent investigations of anchialine caves and sinkholes have identified complex food webs dependent on detrital and, in some cases, chemosynthetically produced organic matter. Chemosynthetic microbes in anchialine systems obtain energy from reduced compounds produced during organic matter degradation (e. g., sulfide, ammonium, and methane), similar to what occurs in deep ocean cold seeps and mud volcanoes, but distinct from dominant processes operating at hydrothermal vents and sulfurous mineral caves where the primary energy source is mantle derived. This review includes case studies from both anchialine and non-anchialine habitats, where evidence for in situ chemosynthetic production of organic matter and its subsequent transfer to higher trophic level metazoans is documented. The energy sources and pathways identified are synthesized to develop conceptual models for elemental cycles and energy cascades that occur within oligotrophic and eutrophic anchialine caves. Strategies and techniques for testing the hypothesis of chemosynthesis as an active process in anchialine caves are also suggested. KW: Anchialine cave, Biogeochemistry, Stable carbon isotopes, Chemosynthesis.

POMORY (Christopher M.), CARPENTER (Jerry H.) & WINTER (John H.), 2011. *Amphicutis stygobita*, a new genus and new species of brittle star (Echinodermata: Ophiuroidea: Ophiurida: Amphilepididae) found in Bernier Cave, an anchialine cave on San Salvador Island, Bahamas. *Zootaxa* 3133(December 16):50-68, 11 pl., 78 réf.

ABS: *Amphicutis stygobita* is a new genus and new species of ophiuroid found in Bernier Cave, an anchialine cave on San Salvador Island, Bahamas. The species is small (disk diameter 3-4 mm) with short arms (2-2.5X disk diameter). Dorsal disk features include imbricated scales, and oval radial shields separated by a column of scales. Ventral disk features include imbricated scales, genital scales flat and thin, no bursal sacs, second tentacle pore of oral frame outside mouth slit, oral shields small ovals similar in appearance to disk scales, two to three oral papillae per jaw side with the proximal papillae usually in the infradental position, and ventral tooth at the apex of each jaw broadly rounded. The arms are the most distinctive feature. Dorsal arm plates are small diamond-oval shaped and separated from one another by a gap equal to the arm plate length. Ventral arm plates are small figure-8 shaped and separated from one another by a gap equal to the arm plate length. Lateral arm plates meet medially on dorsal and ventral sides and make up most of an arm segment. Each lateral arm plate bears two arm spines. Disk and arms are often formed by soft tissue outlining plates and scales, but lacking significant calcification. A raised skin persists after calcification, from which the genus name derives. The species is named for its aquatic cave-dwelling habit, apparently endemic to a single cave, and may be unique among ophiuroids in being restricted to a cave environment. KW: Ophiuroid, endemism, troglobite, stygobite, Caribbean. <http://www.mapress.com/zootaxa/list/2011/3133.html>

POR (Francis Dov), 2011. Groundwater life: some new biospeological views resulting from the Ophel paradigm. *Travaux de l'Institut de Spéologie "Émile Racovitza"* 50:61-76. ABS: The functioning of the new chemoautotrophic biome Ophel (POR, 2007) is discussed based on its type locality, the Ayyalon groundwater pool, which is compared to the Movile cave and the Frasassi caves. The specific role of the thermosbaenaceans as first consumers in chemoautotrophic systems is emphasized. New views are presented concerning the zoogeography of the ophelic biome and a new theory is advanced about the origin of the ophelic fauna, which differs from the Tethyan stranding theory. KW: Ophel, groundwaters, Ayyalon, Thermosbaenacea, Chemolithotrophy. <http://www.speotravaux.iser.ro/11.html>

PORCA (E.), JURADO (V.), MARTIN-SANCHEZ (P. M.), HERMOSIN (B.), BASTIAN (F.), ALABOUVETTE (C.) & SAIZ-JIMENEZ (C.), 2011. Aerobiology: An ecological indicator for early detection

and control of fungal outbreaks in caves. *Ecological Indicators* 11(6, November):1594-1598. DOI: <http://dx.doi.org/10.1016/j.ecolind.2011.04.003>.

ABS: Aerobiology of caves is still in its infancy. At present, no clear information has been generated on the limits of acceptance of fungal spores in air which permit classification of the atmosphere of a cave as not dangerous for the conservation of rock-art paintings. We had the unique opportunity to visit and sample different caves in Spain and France, under different managements. We obtained a collection of data related with contamination episodes that permitted the formulation of a tentative index of fungal hazard in show caves. This is supported by the concentration of fungal spores in the cave air, the knowledge of the cave history and management, and a detailed survey of the different halls of the caves. The index classifies the risks into five categories: category 1 identifies a cave without fungal problems, category 2 is an alarm signal for caves, category 3 is a cave threatened by fungi, category 4 is assigned to a cave already affected by fungi, and category 5 is a cave with an irreversible ecological disturbance. This index, a working hypothesis, is launched to promote interest and forum discussion and should be validated by the scientific community after being updated with more surveys and cave analyses carried out under different managements and with different contamination episodes. Highlights: We studied the aerobiology of five caves with different contamination and management regimes. Data permitted to propose an index of fungal hazard. Caves are classified into five categories from no problem to irreversible ecological disturbance. KW: Aerobiology, Show caves, Fungi, Fungal outbreaks.

PORTILLO (M. C.) & GONZALEZ (J. M.), 2011. Moonmilk Deposits Originate from Specific Bacterial Communities in Altamira Cave (Spain). *Microbial Ecology* 61(1, January):182-189. DOI: <http://dx.doi.org/10.1007/s00248-010-9731-5>.

ABS: The influence of bacterial communities on the formation of carbonate deposits such as moonmilk was investigated in Altamira Cave (Spain). The study focuses on the relationship between the bacterial communities at moonmilk deposits and those forming white colonizations, which develop sporadically throughout the cave. Using molecular fingerprinting of the metabolically active bacterial communities detected through RNA analyses, the development of white colonizations and moonmilk deposits showed similar bacterial profiles. White colonizations were able to raise the pH as a result of their metabolism (reaching in situ pH values above 8.5), which was proportional to the nutrient supply. Bacterial activity was analyzed by nanorespirometry showing higher metabolic activity from bacterial colonizations than uncolonized areas. Once carbonate deposits were formed, bacterial activity decreased drastically (down to 5.7% of the white colonization activity). This study reports on a specific type of bacterial community leading to moonmilk deposit formation in a cave environment as a result of bacterial metabolism. The consequence of this process is a macroscopic phenomenon of visible carbonate depositions and accumulation in cave environments.

POULSON (Thomas L.), 2011. Two Very Different Books on Cave Biology. *BioScience* 61(4):321-323. DOI: <http://dx.doi.org/10.1525/bio.2011.61.4.13>.

PUECHMAILLE (Sébastien J.), FRICK (Winifred F.), KUNZ (Thomas H.), RACEY (Paul A.), VOIGT (Christian C.), WIBBELT (Gudrun) & TEELING (Emma C.), 2011. White nose syndrome: is this emerging disease a threat to European bats? *Trends in Ecology & Evolution* 26(11, November):570-576. DOI: <http://dx.doi.org/10.1016/j.tree.2011.06.013>.

ABS: White-nose syndrome (WNS) is a newly emergent disease that potentially threatens all temperate bat species. A recently identified fungus, *Geomyces destructans*, is the most likely causative agent of this disease. Until 2009, WNS and *G. destructans* were exclusively known from North America, but recent studies have confirmed this fungus is also present in Europe. We assembled an international WNS consortium of 67 scientists from 29 countries and identified the most important research and conservation priorities to assess the risk of WNS to European bats. Here, we review what is known about WNS and *G. destructans* and detail the conservation and research recommendations aimed at understanding and containing this emerging infectious disease.

RACOVITĂ (Gheorghe), 2011. Révision systématique des Leptodirinae souterrains des Monts Apuseni. 8. Aperçu

- synth  tique sur le genre *Pholeuon* [Systematic revision of subterranean Leptodirinae from the Apuseni Mountains. 8. Synthetic view upon the genus *Pholeuon*]. *Travaux de l'Institut de Sp  ologie "  mile Racovitza"* 50:37-59. R  S: Pr  c  d   par six   tudes entreprises sur les populations de *Pholeuon* propres aux principales zones g  ographiques des Monts Apuseni, le pr  sent travail a pour objet une analyse globale de tous les taxons attribu  s actuellement    ce genre. Les donn  es biom  triques relatives    9745 individus sont trait  es successivement par analyse num  rique, analyse des groupements par classification hi  rarchique et analyse en composantes principales, en consid  rant d'abord la r  gion des Monts P  durea Craiului, ensuite celle des Monts du Bihor et finalement celle des Monts Apuseni. Les r  sultats concordants ainsi obtenus attestent que la m  thodologie employ  e assure une s  paration correcte de taxons. Par ailleurs, ils montrent que les esp  ces et sous-esp  ces appartenant au sous-genre *Parapholeuon* peuvent   tre facilement identifi  es, tandis que la diff  renciation de celles incluses dans le sous-genre *Pholeuon* (s. str.) pose des probl  mes parfois assez complexes. ABS: The present paper aims to achieve a global study of all taxa of the genus *Pholeuon*. The work was preceded by six extensive investigations on the *Pholeuon* populations from the main geographic areas of the Apuseni Mountains. Biometric data obtained from 9745 specimens are successively analyzed by numerical analysis, hierarchical cluster analysis (HCA) and principal component analysis (PCA) considering the P  durea Craiului Mountains regions first, seconded by the Bihor Mountains and finally the Apuseni Mountains. The results validate the effectiveness of the methodology approached that assures a clear separation of the taxa. On the other side, it is confirmed that the species and subspecies that belong to *Parapholeuon* might be easily identified, while the discrimination of those included in the subgenus *Pholeuon* (s. str.) rise sometimes complex difficulties. KW: Quantitative taxonomy, subterranean Coleoptera, *Pholeuon*. <http://www.speotravaux.iser.ro/11.html>
- RANGA REDDY (Yenumula), 2011.** Gondwanan heritage in groundwater crustaceans of peninsular India. *Current Science* 101(2, July 25):156-158. <http://www.ias.ac.in/currsci/25jul2011/contents.htm>
- RANGA REDDY (Yenumula), BANDARI (Elia) & TOTAKURA (Venkateswara Rao), 2011.** First Asian Record of the Genus *Parvulobathynella* (Malacostraca: Bathynellacea) with Description of Two New Species from Southeastern India and Amendment of the Generic Diagnosis. *Journal of Crustacean Biology* 31(3, July):485-508. DOI: <http://dx.doi.org/10.1651/10-3435.1>. ABS: The genus *Parvulobathynella* Schminke, 1973a, presently contains six species: three each from South America and Africa. Two new species of this genus, viz. *Parvulobathynella distincta* n. sp. and *Parvulobathynella projectura* n. sp., collected in the interstitial banks of the Rivers Krishna and Godavari in the southeastern India, are described and illustrated and their taxonomic position in the genus *Parvulobathynella* is discussed. To accommodate the Indian species, the generic diagnosis of *Parvulobathynella* is amended based, among other things, on the mandibular features such as the size and arrangement of molar teeth. The salient morphologic characters and their various states in the species of *Parvulobathynella* are reviewed. A note on the ecology and biogeography of the species is added. The monophyletic status of the family Leptobathynellidae is also briefly discussed. KW: Bathynellacea, Leptobathynellidae, *Parvulobathynella*, stygofauna.
- REBOLEIRA (A. S. P. S.), BORGES (P. A. V.), GON  ALVES (F.), SERRANO (A. R. M.) & OROM   (P.), 2011.** The subterranean fauna of a biodiversity hotspot region - Portugal: an overview and its conservation. *International Journal of Speleology* 40(1, January):23-37. DOI: [10.5038/1827-806X.40.1.4](https://doi.org/10.5038/1827-806X.40.1.4). ABS: An overview of the obligate hypogean fauna in Portugal (including Azores and Madeira archipelagos) is provided, with a list of obligated cave-dwelling species and subspecies, and a general perspective about its conservation. All the available literature on subterranean Biology of Portugal since the first written record in 1870 until today has been revised. A total of 43 troglobiont and 67 stygobiont species and subspecies from 12 orders have been described so far in these areas, included in the so-called Mediterranean hotspot of biodiversity. The subterranean fauna in Portugal has been considered moderately poor with some endemic relicts and it remains to be demonstrated if this fact is still true after investing in standard surveys in cave environments. The major problems related to the conservation of cave fauna are discussed, but it is clear that the protection of this specialized fauna implies an adequate management of surface habitats. KW: Biospeleology, hypogean fauna, patterns of diversity, conservation, caves, karst, lava tubes, Portugal, Azores, Madeira.
- REBOLEIRA (A. S. P. S.), GON  ALVES (F.) & OROM   (P.), 2011.** On the Iberian endemic subgenus *Lathromene* Koch (Coleoptera: Staphylinidae: Paederinae): description of the first hypogean *Domene* Fauvel, 1872 from Portugal. *Zootaxa* 2780(March 1st):48-56, 7 pl., 25 r  f. ABS: *Domene* (*Lathromene*) *lusitanica* n. sp. from Sic   karstic massif in Portugal is described and compared with other species of the subgenus, representing the first hypogean rove beetle from mainland Portugal. A comparison between *Domene lusitanica* n. sp. and the other species of the Iberian endemic subgenus *Lathromene* is made using diagnostic characters. An identification key for the males of *Lathromene* species is presented, and biogeographical and ecological comments are also included. The species of *Domene* known from the Iberian Peninsula are listed and their distributions are mapped. KW: Rove-beetle, new species, troglobiont, subterranean, cave, karst, Iberian Peninsula. <http://www.mapress.com/zootaxa/list/2011/2780.html>
- RIESCH (R. W.), PLATH (M.) & SCHLUPP (I.), 2011.** Toxic hydrogen sulphide and dark caves: pronounced male life-history divergence among locally adapted *Poecilia mexicana* (Poeciliidae). *Journal of Evolutionary Biology* 24(3, March):596-606. DOI: <http://dx.doi.org/10.1111/j.1420-9101.2010.02194.x>. ABS: Chronic environmental stress is known to induce evolutionary change. Here, we assessed male life-history trait divergence in the neotropical fish *Poecilia mexicana* from a system that has been described to undergo incipient ecological speciation in adjacent, but reproductively isolated toxic/nontoxic and surface/cave habitats. Examining both field-caught and common garden-reared specimens, we investigated the extent of differentiation and plasticity of lifehistory strategies employed by male *P. mexicana*. We found strong site-specific life-history divergence in traits such as fat content, standard length and gonadosomatic index. The majority of site-specific life-history differences were also expressed under common garden-rearing conditions. We propose that apparent conservatism of male life histories is the result of other (genetically based) changes in physiology and behaviour between populations. Together with the results from previous studies, this is strong evidence for local adaptation as a result of ecologically based divergent selection. KW: Cave fish, divergent natural selection, ecological speciation, extremophile teleosts, life-history evolution, livebearing.
- RIESCH (R. W.), PLATH (M.) & SCHLUPP (I.), 2011.** Speciation in caves: experimental evidence that permanent darkness promotes reproductive isolation. *Biology Letters* 2011(May 11). DOI: <http://dx.doi.org/10.1098/rsbl.2011.0237>. ABS: Divergent selection through biotic factors like predation or parasitism can promote reproductive isolation even in the absence of geographical barriers. On the other hand, evidence for a role of adaptation to abiotic factors during ecological speciation in animals is scant. In particular, the role played by perpetual darkness in establishing reproductive isolation in cave animals (troglobites) remains elusive. We focused on two reproductively isolated ecotypes (surface- and cave-dwelling) of the widespread livebearer *Poecilia mexicana*, and raised offspring of wild-caught females to sexual maturity in a 12-month common-garden experiment. Fish were reared in light or darkness combined with high- or low-food conditions. Females, but not males, of the surface ecotype suffered from almost complete reproductive failure in darkness, especially in the low-food treatment. Furthermore, surface fish suffered from a significantly higher rate of spontaneous, stress-related infection with bacterial columnaris disease. This experimental evidence for strong selection by permanent darkness on non-adapted surface-dwelling animals adds depth to our understanding of the selective forces establishing and maintaining reproductive isolation in cave faunas. ABS: Cave fauna, ecological speciation, life-history evolution, local adaptation, *Poecilia mexicana*.
- R  OS (F.) & P  REZ FERN  NDEZ (Toni), 2011.** Sobre la presencia de moluscos y conchas en las cavidades subterr  neas de la provincia de Ja  n. *Monograf  as*

- Bioespeleológicas* 6:7-13. RES: Primer catálogo de moluscos encontrado en cavidades de la provincia de Jaén (Andalucía, España), todos ellos capturados por el G. E. V.
- ROACH (Katherine A.), TOBLER (Michael) & WINEMILLER (Kirk O.), 2011.** Hydrogen sulfide, bacteria, and fish: a unique, subterranean food chain. *Ecology* 92:2056-2062. DOI: <http://dx.doi.org/10.1890/11-0276.1>. ABS: Photoautotrophs are generally considered to be the base of food webs, and habitats that lack light, such as caves, frequently rely on surface-derived carbon. Here we show, based on analysis of gut contents and stable isotope ratios of tissues (^{13}C : ^{12}C and ^{15}N : ^{14}N), that sulfur-oxidizing bacteria are directly consumed and assimilated by the fish *Poecilia mexicana* in a sulfide-rich cave stream in Tabasco state, Mexico. Our results provide evidence of a vertebrate deriving most of its organic carbon and nitrogen from in situ chemoautotrophic production, and reveals the importance of alternative energy production sources supporting animals in extreme environments. KW: Cave fish, chemoautotroph, food web, hydrogen sulfide, *Poecilia mexicana*, production source.
- ROMERO (Aldemaro), 2011.** The Evolution of Cave Life. New concepts are challenging conventional ideas about life underground. *American Scientist* 99(2, March/April):144-151. <http://www.americanscientist.org/issues/id.89/past.aspx>
- RUIZ-RAMONI (D.), MUÑOZ-ROMO (M.), RAMONI-PERAZZI (P.), ARANGUREN (Y.) & FERMIN (G.), 2011.** Folivory in the Giant Fruit-Eating Bat *Artibeus amplus* (Phyllostomidae): A Non-Seasonal Phenomenon. *Acta Chiropterologica* 13(1, June):195-199. DOI: <http://dx.doi.org/10.3161/150811011X578741>. ABS: Folivory has been reported in only five species of microbats, and described as a seasonal phenomenon. Bats feed on leaves by chewing a portion of leaf, extracting the liquid, and discarding the fibrous material. In the course of a study on the reproductive pattern of *Artibeus amplus* in the Venezuelan Andes, leaves were frequently observed in a cave used by this species as a roost. We took this opportunity to (1) identify the leaves consumed by this poorly known Neotropical bat species, and (2) test whether folivory is a temporal phenomenon, such as in other leaf-eating bat species. *Artibeus amplus* consumes the leaves of seven species of plants, and four of these were found in every month of the year during the study. We report for the first time: (1) folivory in *A. amplus*, (2) five plant species never reported before in the diet of a bat, and (3) folivory as a non-seasonal phenomenon. KW: Chiroptera, behavior, feeding habits, forest, leaves, Phyllostomidae, Stenodermatinae, Venezuela.
- RUSSELL (R. A.), 2011.** Air vortex ring communication between mobile robots. *Robotics and Autonomous Systems* 59(2, February):65-73. DOI: <http://dx.doi.org/10.1016/j.robot.2010.11.002>. ABS: This project investigates the biomimetic implementation of a form of communication observed in cave dwelling crickets. The cricket *Phaeophilacris spectrum* uses air vortices as a form of short-range communication. This project aims to mimic this communication technique for use in robotic systems and to assess its capabilities in terms of technical requirements, range and the data it can provide. The design of an air vortex generator and receiver are described. Results of practical experiments to code information into sequences of vortices as well as to determine range of the source and direction of arrival are also presented. Research highlights: Cave dwelling cricket *Phaeophilacris spectrum* uses air vortices for communication. Aspects of air vortex communication may have advantages for robotic systems. A vortex generator and air disturbance sensors were mounted on mobile robots. Experiments demonstrated measurement of transmitter range and bearing. ASCII characters were also coded into sequences of vortices. KW: Air vortices, Robot communication, Biomimetics, *Phaeophilacris spectrum*.
- RŮŽIČKA (Vlastimil), 2011.** Central European habitats inhabited by spiders with disjunctive distributions. *Polish Journal of Ecology* 59(2):367-380. [http://www.pol.j.ecol.cbe-pan.pl/](http://www.pol.j.ecol.cbe.pan.pl/)
- RŮŽIČKA (Vlastimil), LAŠKA (Vratislav), MIKULA (Jan) & TUF (Ivan H.), 2011.** Morphological adaptations of *Porrhomma* spiders (Araneae: Linyphiidae) inhabiting soil. *Journal of Arachnology* 39(2, August):355-357. DOI: <http://dx.doi.org/10.1636/JOACP10-66.1>. ABS: We studied occurrence and morphological adaptations of two species of *Porrhomma* down to 135 cm soil depth. *Porrhomma microps* Simon, 1884 inhabited soil layers at depths between 5 and 135 cm. *Porrhomma* aff. *myops* was found at depths of 35-95 cm. Specimens of both species were depigmented and had highly reduced eyes. Compared with the epigean *P. pygmaeum* (Blackwall, 1834), *P. myops*, which inhabits scree and caves, exhibits significantly longer legs. We interpret it as an example of troglomorphism. Compared with the epigean *P. pygmaeum*, *P. aff. myops* is found deep in the soil and exhibits a significantly smaller cephalothorax. We interpret this as edaphomorphism. We assume the edaphomorphic population of *P. aff. myops* to be permanent soil dwellers. KW: Araneae, soil profile, troglomorphisms, edaphomorphisms.
- SAHL (Jason W.), GARY (Marcus O.), HARRIS (J. Kirk) & SPEAR (John R.), 2011.** A comparative molecular analysis of water-filled limestone sinkholes in north-eastern Mexico. *Environmental Microbiology* 13(1, January):226-240. DOI: <http://dx.doi.org/10.1111/j.1462-2920.2010.02324.x>.
- SAHU (Khushi Ram), BISWAS (Jayant), ACHARI (K. Venu) & SINHA (Krishna Mohan), 2011.** Ecological Approval for Cave Habitat: The Occurrence of Regressed Stridulatory System in Cavernicolous *Homoeogryllus* sp. *International Journal of Zoological Research* 7(5):369-375. DOI: <http://dx.doi.org/10.3923/ijzr.2011.369.375>. ABS: Subterranean caves are always characterized by several uncommon ecological factors due to which a high degree of biological adaptation is always required to establish any population in it. In the present work, the morphology of the sound producing organ of a cave cricket *Homoeogryllus indicus* has been studied and the ecological importance of the same has been tried to correlate with its habitat. Fifty adult male individuals of *H. indicus* were collected from Kachhuwa-Pahar cave and preserved separately in plastic veil containing 4% formalin. Complete stridulatory apparatus was studied under a binocular microscope and the sketches of the tegmina and teeth were drawn by using camera lucida mounted on the microscope. The total number of teeth present in both the files were found to be comparatively less in number than the other members of the same genus which represents an example of regressed evolution. However, a comparatively regressed stridulatory system observed in this species along with other reported morphologically regressive characteristics has been discussed from the perspective of ecological fitness for cave life. KW: Troglomorphism, pre-adaptation, Cavernicoles, syllable, stridulation.
- SAIKIA (Uttam), THAKUR (M. L.), BAWRI (Mayur) & BHATTACHERJEE (P. C.), 2011.** An inventory of the chiropteran fauna of Himachal Pradesh, northwestern India with some ecological observations. *Journal of Threatened Taxa* 3(4, April 26):1637-1655. <http://threatenedtaxa.org/index.asp?jid=62>
- SALAVERT (Virginia), ZAMORA MUÑOZ (Carmen), RUIZ-RODRÍGUEZ (Magdalena) & SOLER (Juan J.), 2011.** Female-biased size dimorphism in a diapausing caddisfly, *Mesophylax aspersus*: effect of fecundity and natural and sexual selection. *Ecological Entomology* 36(3, June):389-395. DOI: <http://dx.doi.org/10.1111/j.1365-2311.2011.01279.x>. ABS: 1. The effect of mating success, female fecundity and survival probability associated with intra-sex variation in body size was studied in *Mesophylax aspersus*, a caddisfly species with female-biased sexual size dimorphism, which inhabits temporary streams and aestivates in caves. Adults of this species do not feed and females have to mature eggs during aestivation. 2. Thus, females of larger size should have a fitness advantage because they can harbour more energy reserves that could influence fecundity and probability of survival until reproduction. In contrast, males of smaller size might have competitive advantages over others in mating success. 3. These hypotheses were tested by comparing the sex ratio and body size of individuals captured before and after the aestivation period. The associations between body size and female fecundity, and between mating success and body size of males, were explored under laboratory conditions. 4. During the aestivation period, the sex ratio changed from 1:1 to male biased (4:1),

and a directional selection on body size was detected for females but not for males. Moreover, larger clutches were laid by females of larger size. Finally, differences in mating success between small and large males were not detected. These results suggest that natural selection (i. e. the differential mortality of females associated with body size) together with possible fecundity advantages, are important factors responsible of the sexual size dimorphism of *M. aspersus*. 5. These results highlight the importance of taking into account mechanisms other than those traditionally used to explain sexual dimorphism. Natural selection acting on sources of variation, such as survival, may be as important as fecundity and sexual selection in driving the evolution of sexual size dimorphism. KW: Body size, caves, mating behaviour, sex ratio, sexual size dimorphism, temporary streams, Trichoptera.

SALGADO COSTAS (José María), LABRADA MOREDA (L.) & LUQUE (Carlos G.), 2011. Un nuevo género y nueva especie de Leptodirini troglobio de la Cordillera Cantábrica (Cantabria, España): *Fresnedaella lucius* n. gen., n. sp. (Coleoptera: Leiodidae: Cholevinae). *Heteropterus Revista de Entomología* 11(1):1-12. http://www.heteropterus.org/i_heteventomol.html

SÁNCHEZ HERNÁNDEZ (Cornelio) & ROMERO ALMARAZ (María de Lourdes), 2011. Cave Bats of Tabasco. *Association for Mexican Cave Studies Activities Newsletter* 34(June):136-?

SCHELLER (Ulf), 2011. Pauropoda (Myriapoda) from Great Smoky Mountains National Park, U. S. A., with descriptions of four new species. *Zootaxa* 2962(July 11):36-48, 4 pl., 4 réf. <http://www.mapress.com/zootaxa/list/2011/2962.html>

SCHNEIDER (Katie), CHRISTMAN (Mary C.) & FAGAN (William F.), 2011. The influence of resource subsidies on cave invertebrates: results from an ecosystem-level manipulation experiment. *Ecology* 92(3, March):765-776. DOI: <http://dx.doi.org/10.1890/10-0157.1>. ABS: Spatial resource subsidies can greatly affect the composition and dynamics of recipient communities. Caves are especially tractable for studying spatial subsidies because primary productivity is absent. Here, we performed an ecosystem-level manipulation experiment to test the direct influence of detrital subsidies on community structure in terrestrial cave ecosystems. After performing baseline censuses of invertebrates, we removed all organic material from 12 caves and constructed exclusion boxes to prevent natural resource inputs. Next, we stocked each cave with standardized quantities of two major natural subsidies to caves: leaves (leaf packs) and carcasses (commercially supplied rodents), and measured the invertebrate colonization and utilization of these resources for 23 months. Over the course of the experiment, 102 morphospecies were observed. Diplopods and collembolans were most abundant on leaf packs, and dipteran larvae and collembolans were most abundant on the rats. On average, caves receiving either treatment did not differ in species richness, but abundance was significantly higher in rat caves over both the duration of the experiment and the temporal "life" of the individual resources, which were restocked upon exhaustion. Post-manipulation invertebrate communities differed predictably depending on the type of subsidy introduced. Over the course of the experiment, caves that received the same subsidy clustered together based on community composition. In addition, the invertebrate community utilizing the resource changed over the duration of the two-year experiment, and evidence of succession (i. e., directional change) was observed. Results from this study demonstrate how allochthonous resources can drive the community dynamics of terrestrial invertebrates in cave ecosystems and highlight the need for consideration of the surface environment when managing and protecting these unique habitats. KW: Allochthonous input, carrion, cave invertebrates, caves, detritus, Greenbrier County, West Virginia, USA, resource-subsidy experiment, spatial subsidies.

SCHOVILLE (Sean D.) & KIM (Byung-Woo), 2011. Phylogenetic Relationships and Relictualism of Rock-Crawlers (Grylloblattodea: Grylloblattidae) in Cave and Mountain Habitats of Korea. *Annals of the Entomological Society of America* 104(2, March):337-347. DOI: <http://dx.doi.org/10.1603/AN10125>. ABS: Rock-crawlers (Grylloblattodea: Grylloblattidae) in northeastern Asia are low-vagility

insects that are restricted to cool temperate forests and mountainous regions. Morphologically distinguishable species are similar ecologically and show narrow endemism and a patchy distribution. As a result, grylloblattids are hypothesized to be relict species that have persisted in situ over long periods of climatic and geological change (Storozhenko & Oligier, 1984). We investigate whether the diversification pattern of Asian grylloblattids reflects long-term persistence and divergence due to geological events, or more recent diversification in response to climatic change. Using multilocus genetic data, we examine the phylogenetic relationship to other Asian Grylloblattidae and the geographic pattern of diversification of Korean rock-crawlers, *Galloisiana* Caudell & King (1924) and *Namkungia* Storozhenko & Park (2002). Our analysis reveals a monophyletic grouping of Korean species, with multiple cryptic lineages and restricted geographical distributions. Based on genetic data, Korean species are closely related to Japanese *Galloisiana*. Using a Bayesian relaxed clock model calibrated with a mitochondrial substitution rate, the age of the most recent common ancestor of the Korean-Japanese lineage is estimated within the Miocene epoch. This provides evidence for a diversification event closely tied to the geological events separating the Japanese archipelago from the Korean peninsula. KW: Rock-crawlers, biogeography, species tree, diversification, vicariance.

SCHWARTZ (M. D.), 2011. Revision and Phylogenetic Analysis of the North American Genus *Slaterocoris* Wagner with New Synonymy, the Description of Five New Species and a New Genus from Mexico, and a Review of the Genus *Scalponotatus* Kelton (Heteroptera: Miridae: Orthotylinae). *Bulletin of the American Museum of Natural History* 354(June):1-290. DOI: <http://dx.doi.org/10.1206/354.1>. BL: Fig. 17: 94. *Slaterocoris apache*. H. USA: Nevada: Lehman Caves, 00119430; I. USA: Nevada: Lehman Caves, 00119431.

SGUAZZIN (Francesco) & POLLI (Elio), 2011. Briofite nell'antro di Casali Neri (Grotta sul Monte San Michele, 326/450 VG). Contributo alla conoscenza della speleoflora del Carso isontino [Bryophytes in the Casali Neri Cavern (Cave on the Mount Saint Michael, 326/450 Vg). Contribution to the knowledge of the Isonzo Karst Spelaeoflora]. *Atti e Memorie della Commissione Grotte "Eugenio Boegan"* 43:103-115. RIAS: Dopo una premessa sui vari aspetti (geomorfologici, climatici, vegetazionali e storici) dell'Antro di Casali Neri (Grotta sul Monte San Michele, 326/450 VG, Comune di Savogna, Carso isontino), vengono prese in considerazione le Briofite presenti all'ingresso della cavità e nella dolina al fondo della quale si apre l'ipogeo. Per ciascuna delle 32 specie (7 epatiche e 25 muschi), rinvenute nel singolare ambiente cavernicolo, sono indicati il substrato, l'elemento corologico, la strategia di vita e le esigenze di luce, concordemente con precedenti osservazioni e ricerche effettuate in varie cavità del Carso triestino. Nel corso dell'indagine è apparso interessante il rinvenimento di *Bryum moravicum* (= *B. laevipilum*), muschio per il quale esisteva soltanto una segnalazione risalente peraltro all'inizio del secolo scorso. Continua con il presente contributo l'indagine sulla brioflora delle cavità carsiche, sia di quelle presenti sull'altipiano triestino che di quelle che si aprono nel territorio isontino. Scopo essenziale di questa, e di future ricerche, è quello di fornire un quadro il più significativo possibile sulla presenza e sull'identità, nella regione Friuli Venezia Giulia, delle Briofite, gruppo di vegetali ancor poco osservato e studiato. SUM: After a preliminary statement about the different aspects (geomorphological, climatic, vegetational and historical) of the Casali Neri Cavern (Cave on the Mount Saint Michael, 326/450 VG, Savogna, Isonzo Karst), the Bryophytes, present at the cavity entrance and at the end of the dolina where the hypogaeum opens, are considered. The substratum, chorological element, life strategy and light exigency - according to former observations and researches in some cavities of the Trieste Karst - are pointed out for each of the 32 species (7 liverworts and 25 mosses) found in the singulare cave milieu. During the research it seemed interesting the finding of *Bryum moravicum* (= *B. laevipilum*), a moss with only one recording in Friuli Venezia Giulia region, dated back at the beginning of the last century. The investigation on the Karst cavities Bryoflora (both on Trieste plateau and on Isonzo territory) goes on with the present notes. The aim of this researches (and future ones) is to supply an as much as possible significant outline of the presence and the identity,

- in Friuli Venezia Giulia region, of the Bryophytes, a plants group too sparsely observed and studied. <http://www.boegan.it/index.php?id=550>
- SHARMA (Prashant P.), KURY (Adriano B.) & GIRIBET (Gonzalo), 2011.** Zalmoxidae (Arachnida: Opiliones: Laniatores) of the Paleotropics: a catalogue of Southeast Asian and Indo-Pacific species. *Zootaxa* 2972(July 21):37-58, 4 pl., 60 réf. <http://www.mapress.com/zootaxa/list/2011/2972.html>
- SHEA (Glenn M.), COUPER (Patrick J.), WORTHINGTON WILMER (Jessica) & AMEY (Andrew P.), 2011.** Revision of the genus *Cyrtodactylus* Gray, 1827 (Squamata: Gekkonidae) in Australia. *Zootaxa* 3146(December 23):1-63, 28 pl., 168 réf. <http://www.mapress.com/zootaxa/list/2011/3146.html>
- SHEAR (William A.), 2011.** Cave millipeds of the United States. 10. New species and records of the genus *Pseudotremia* Cope. 2. Species from Virginia, USA (Diplopoda, Chordeumatida, Cleidogonidae). *Zootaxa* 3109(November 24):1-38, 19 pl., 19 réf. ABS: The milliped genus *Pseudotremia* Cope, 1869 as it occurs in Virginia, USA, is reviewed, with new records and species, mostly from caves. Seventeen new species, *Pseudotremia loomisi*, *P. contorta*, *P. cerberus*, *P. pomarium*, *P. orndorffi*, *P. peponocranium*, *P. glaber*, *P. fergusonii*, *P. jaculohamatum*, *P. fremens*, *P. hubbardi*, *P. ryensis*, *P. piscator*, *P. culveri*, *P. salfordina*, *P. johnholsingeri* and *P. inexpectata* are described, for a total Virginia fauna of 25 species. Additional species are predicted to occur. New locality records are given for seven previously described species, *Pseudotremia alecto* Shear, 1972, *P. hobbsi* Hoffman, 1950, *P. sublevis* Loomis, 1944, *P. tuberculata* Loomis, 1939, *P. momus* Shear, 1972, *P. nodosa* Loomis, 1939, and *P. valga* Loomis, 1943. Taxonomic characters useful in delimiting species of *Pseudotremia* are discussed. KW: Troglonites, speleobiology, caves, Virginia, *Pseudotremia*, Cleidogonidae. <http://www.mapress.com/zootaxa/list/2011/3109.html>
- SHEAR (William A.), 2011.** Cave millipeds of the United States. 11. *Opiona graeningi*, n. sp., a troglomorphic caseyid millipede from Siskiyou County, California, with comments on the genus *Opiona* Chamberlin 1951 (Diplopoda, Chordeumatida, Caseyidae). *Zootaxa* 3114(November 30):50-56, 3 pl., 12 réf. ABS: The new species *Opiona graeningi* is described from caves in the Marble Mountain Wilderness Area, Klamath National Forest, Siskiyou Co., California, as the first troglomorphic species of *Opiona*, the first troglonite from the globally important Klamath Siskiyou ecoregion, and possibly the first troglonite caseyid. Notes are provided on the composition of the genus *Opiona* and on the interpretation of the gonopods. *Opiona*, with 13 described species, may not be monophyletic. KW: Troglonite, Marble Mountain, Caseyidae, *Speoseya*, gonopods. <http://www.mapress.com/zootaxa/list/2011/3114.html>
- SHIMADA (T.), MATSUI (M.), YAMBUN (P.) & SUDIN (A.), 2011.** A survey of morphological variation in adult *Meristogenys amoropalamus* (Amphibia, Anura, Ranidae), with a description of a new cryptic species. *Zootaxa* 2905(June 3):33-56, 11 pl., 41 réf. <http://www.mapress.com/zootaxa/list/2011/2905.html>
- SILVA (M. S.), MARTINS (R. P.) & FERREIRA (R. L.), 2011.** Cave lithology determining the structure of the invertebrate communities in the Brazilian Atlantic Rain Forest. *Biodiversity and Conservation*. DOI: <http://dx.doi.org/10.1007/s10531-011-0057-5>. ABS: In Brazil, only limestone caves and a few caves in sandstone, iron ore and granite rocks had their invertebrate communities evaluated. Being such, the present study aimed to promote a comparative analysis of the structure of the invertebrate communities in caves associated to carbonatic, magmatic, siliciclastic and ferruginous rocks of the Brazilian Atlantic forest. Significant differences in the relative richness, abundance and diversity were observed between lithologies. The average relative richness was higher in the ferruginous caves (0.53 spp). The total number of troglomorphic species was significantly different among caves and the highest average richness occurred at ferruginous caves (5.79 spp/cave). Siliciclastic, carbonatic and magmatic caves presented a higher quantitative similarity of the fauna. Ferruginous caves revealed communities with a fauna composition different from the other lithologies. The total richness of invertebrates correlated significantly and positively with the linear development in the siliciclastic caves ($R_s = 0.67$, $P < 0.05$), carbonatic ($R_s = 0.71$, $P < 0.05$) and ferruginous ($R_s = 0.74$, $P < 0.05$). The rock type in which the cave is inserted can determine differences in the richness of invertebrate troglonites and troglonites. Therefore, on creating value attributes, the size of the caves should always come related to their lithology by the fact that same sized caves associated to different lithologies, possess communities with quite diverse structures. KW: Caves, Invertebrates, Diversity, Lithology, Atlantic Forest.
- ŠIMONOVIČOVÁ (A.), PANGALLO (D.), CHOVANOVÁ (K.) & LEHOTSKÁ (B.), 2011.** *Geomyces destructans* associated with bat disease WNS detected in Slovakia. *Biologia* 66(3, June):562-564. DOI: <http://dx.doi.org/10.2478/s11756-011-0041-2>. ABS: The paper describes macro- and micromorphological features of *Geomyces destructans*, the fungus which is associated with the white-nose syndrome (WNS) bat disease in North America. This species was isolated from hibernating *Myotis myotis* at two sites in Malé Karpaty Mts (the old mine Pod medvedou skalou and the Zbojnická Cave) in Western Slovakia. Besides *Geomyces destructans*, the species *Isaria farinosa*, *Cladosporium macrocarpum* and *Alternaria tenuissima* were isolated, too. All strains are deposited at the Department of Soil Science, Comenius University in Bratislava (Slovakia) and in CMF at Institute of Soil Biology in Českějovice (Czech Republic). KW: Bat, WNS (white-nose syndrome), *Geomyces destructans*, microscopic fungi, Slovakia.
- SMIRNOV (D. G.) & VEKHNİK (V. P.), 2011.** Abundance and community structure of bats (Chiroptera: Vespertilionidae) hibernating in artificial caves of Samarskaya Luka. *Ekologiya* 2011(1):64-72.
- SMIRNOV (D. G.) & VEKHNİK (V. P.), 2011.** Abundance and community structure of bats (Chiroptera: Vespertilionidae) hibernating in artificial caves of Samarskaya Luka. *Russian Journal of Ecology* 42(1, January):71-79, original Russian Text © SMIRNOV (D. G.) & VEKHNİK (V. P.), 2011, published in *Ekologiya* 2011(1):64-72. DOI: <http://dx.doi.org/10.1134/S1067413611010103>. ABS: The structure of hibernating bat communities has been studied in eight artificial caves of Samarskaya Luka differing in size and layout. Three types of the relative abundance distribution (RAD) of species in these communities have been revealed. Conditions for hibernation are most favorable in large caves with a stable microclimate, where the abundance of bats is high, the Shannon index has the peak values, and variation in the index of species evenness is the lowest. In such caves, RAD fits the broken-stick and log-series models. Variation in diversity indices reaches the highest level in shallow adits with a changeable microclimate, where RAD fits the geometric series model. The abundance, diversity, and structure of communities depend mainly on cave size and the presence of absence of drafts and, to a lesser extent, on ambient temperature, availability of microshelters, and the type of landscape surrounding the cave. Anthropogenic factors have a weak effect only on the abundance of individual species (*M. nattereri*, *M. daubentonii*, *M. dasycneme*, and *E. nilssonii*) but not on the overall diversity of bat communities. KW: Bats, hibernation sites, community structure, diversity, dominance, rank distribution, hibernation conditions.
- SMITH (Robin J.), 2011.** Groundwater, spring and interstitial Ostracoda (Crustacea) from Shiga Prefecture, Japan, including descriptions of three new species and one new genus. *Zootaxa* 3140(December 22):15-37, 12 pl., 49 réf. ABS: During surveys of a variety of groundwater, spring and interstitial habitats (e. g. in river bars, domestic wells, springs, and seeps) in Shiga Prefecture, Japan, a total of 15 ostracod species were recovered and identified. Three species and one genus are described for the first time herein, *Undulacandona spinula* n. gen & n. sp., *Cryptocandona tsukagoshii* n. sp. and *Cavernocypris cavernosa* n. sp. *Microdarwinula zimmeri* (Menzel, 1916) is reported for the first time from Japan. *Dolerocypris ikeyai* Smith & Kamiya, 2006, *Eucypris pigra* (Fischer, 1851) and *Cryptocandona brehmi* (Klie, 1934) are new records for Shiga Prefecture. KW: Taxonomy, spring, seep, well, interstitial, Cypridoidea, Darwinuloidea. <http://www.mapress.com/zootaxa/list/2011/3140.html>

SOUZA (Maysa Fernanda V. R.) & FERREIRA (Rodrigo Lopes), 2011. A new species of *Eukoenenia* (Palpigradi: Eukoeniidae) from Brazilian iron caves. *Zootaxa* 2886(May 23):31-38, 3 pl., 21 r  f. ABS: *Eukoenenia ferratilis* sp. n. is described from 7 adults (6 females and 1 male) and 1 immature (stage A) collected in iron caves in the municipalities of Moeda and Brumadinho, Minas Gerais, Brazil. The new species shares characteristics with several species of the genus *Eukoenenia* B  rner, 1901 being related to the species *Eukoenenia mirabilis* (Grassi & Calandruccio, 1885) and *Eukoenenia berleseii* (Silvestri, 1903), but the shape and chaetotaxy of the male and female genitalia are distinctive. KW: Neotropics, taxonomy, Arachnida. <http://www.mapress.com/zootaxa/list/2011/2886.html>

SOUZA (Maysa Fernanda V. R.) & FERREIRA (Rodrigo Lopes), 2011. A new troglobitic *Eukoenenia* (Palpigradi: Eukoeniidae) from Brazil. *Journal of Arachnology* 39(1, April):185-188. DOI: <http://dx.doi.org/10.1636/Ha10-43.1>. ABS: A new Brazilian species of the genus *Eukoenenia* is described from a single male specimen collected within the Archimedes Passini cave, a marble cave located in the municipal district of Vargem Alta, Esp  rito Santo. *Eukoenenia spelunca*, sp. nov., has six blades on the prosomal lateral organs and a unique shape of the genital lobes. Some morphometric parameters demonstrate the specialization of this new species to the cave environment. KW: Neotropics, taxonomy, caves, troglomorphic.

SPATE (Andy) & CIGNA (A.), 2011. Lampenflora. *ACKMA Journal* 82(March):?

STOCH (Fabio), 2011. Linnaean and Wallacean shortfalls in assessing amphipod diversity. *New frontiers in Monitoring European Biodiversity: the role and importance of amphipod crustaceans, Abstract Volume:9-10*.

STOCH (Fabio) & BRANCELJ (A.), 2011. Distributional patterns of groundwater copepods in the unsaturated karst of Slovenia and northeastern Italy. *11th International Conference on Copepoda, M  rida, Mexico:135*.

STOCH (Fabio), GERECKE (Reinhard), PIERI (Valentina), ROSSETTI (Giampaolo) & SAMBUGAR (Beatrice), 2011. Exploring species distribution of spring meiofauna (Annelida, Acari, Crustacea) in the southeastern Alps:65-76. In: CANTONATI (M.), GERECKE (R.), J  TTNER (I.) & COX (E. J.), *Springs: neglected key habitats for biodiversity conservation*, CANTONATI (M.), GERECKE (R.), J  TTNER (I.) & COX (E. J.), guest editors. *Journal of Limnology* 70, supplement 1:?. DOI: <http://dx.doi.org/10.3274/JL11-70-S1-05>.

ABS: The distribution patterns of Alpine crenic meiofauna were studied using a standardised sampling procedure at 110 springs, evenly distributed across both carbonate and siliceous rocks in Trentino (northern Italy). Spring altitude ranges between 170 and 2800 m a. s. l. One hundred and thirty-eight taxa (mainly identified at species level), belonging to the Annelida (39), freshwater Acari (57), Copepoda (24), and Ostracoda (18) were found in springs of the investigated area. Using Canonical Correspondence Analysis, spatial patterns of meiofaunal assemblages at the regional scale were best explained by altitude, water chemistry (mainly related to geology) and water-flow regime; the role of microhabitat structure and anthropogenic disturbance as environmental descriptors was of minor importance. KW: Springs, meiofauna, Alps. <http://www.jlimnol.it/> - http://www.jlimnol.it/JL_70_sup/JL_70_sup.htm

STOEV (Pavel) & ENGHOFF (Henrik), 2011. A review of the millipede genus *Sinocallipus* Zhang, 1993 (Diplopoda: Callipodida: Sinocallipodidae), with notes on gonopods monotony vs. peripheral diversity in millipedes. *ZooKeys* 90:13-34. DOI: <http://dx.doi.org/10.3897/zookeys.90.1291>.

ABS: The millipede genus *Sinocallipus* is reviewed, with four new cave-dwelling species, *Sinocallipus catba*, *Sinocallipus deharvengi*, *Sinocallipus jaegeri* and *Sinocallipus steineri*, being described from caves in Laos and Vietnam. With the new records the number of species in the genus reaches six and the genus range is extended to Central Vietnam and North and Central Laos. Both, *Sinocallipus jaegeri* from Khammouan Province

in Laos and *Sinocallipus simplipodicus* Zhang, 1993 from Yunnan, China, show high level of reduction of eyes, which has not been recorded in other Callipodida. Peripheral characters such as the relative lengths of antennomeres, the number of ocelli, the number of pleurotergites or even the shape of paraprocts and the coloration seem to provide more information for the distinction of the species than do the relatively uniform gonopods. The differences in gonopods mainly concern the shape and length of cannula, the length and shape of coxal processes g and k, and the number of the acicular projections of the femoroid. An explanation is offered for the function of the trochanteral lobe of 9th leg-pair. It provides mechanical support for the cannula and seems to assist sperm charge and insemination during copulation. An identification key to the species in the genus is produced to accommodate the new species. The new species descriptions were automatically exported at the time of publication to a wiki (www.species-id.net) through a specially designed software tool, the Pensoft Wiki Convertor (PWC), implemented here for the first time together with a newly proposed citation mechanism for simultaneous journal/wiki publications. KW: *Sinocallipus*, functional anatomy, gonopod monotony, troglomorphism, caves, southeast Asia, identification key, Pensoft Wiki Convertor.

STORM (Jonathan J.) & BOYLES (Justin G.), 2011. Body temperature and body mass of hibernating little brown bats *Myotis lucifugus* in hibernacula affected by white-nose syndrome. *Acta Theriologica* 56(2, April):123-127. DOI: <http://dx.doi.org/10.1007/s13364-010-0018-5>.

STRICKLER (A. G.) & SOARES (D.), 2011. Comparative genetics of the central nervous system in epigeal and hypogean *Astyanax mexicanus*. *Genetica* 139(3, March):383-391. DOI: <http://dx.doi.org/10.1007/s10709-011-9557-1>. ABS: The extreme environment of subterranean caves presents an adaptive challenge to troglomorphic organisms. The mechanisms by which natural selection modify an ancestral surface neural circuit to produce a novel subterranean behavior remain a mystery. To address this question, we performed cross species microarray experiments to compare differences in gene expression levels in the adult brain of the teleost *Astyanax mexicanus*. This species provides a unique opportunity for comparative genetic studies as it consists of extant epigeal (surface) and hypogean (cave) conspecifics. Microarray experiments herein revealed significant changes in transcription levels of seventeen genes, several of which are important for behaviors involved in metabolic management. We focused on genes central to three neurotransmission and neuromodulation networks: the endocannabinoid system (Cannabinoid receptor CB1), the dopaminergic system (Tyrosine 3-monooxygenase/tryptophan 5-monooxygenase activation protein) and the glutamatergic system (glutamate receptor AMPA 2a). All three genes were upregulated in the hypogean form of *A. mexicanus* compared to the epigeal form, indicating that behavioral differences in the hypogean form of the species could be due to alterations in expression levels of several key genes. This information provides insights into the complex relationships among environmental factors, genetics, nervous systems and adaptive behavior, and can subsequently help us understand how these interactions affect behavior in other biological systems. KW: Brain, Microarray, Evolution, *Astyanax mexicanus*, CB1, AMPA 2a, Tyrosine 3-monooxygenase.

STUBBINGTON (R.), WOOD (P. J.) & REID (I.), 2011. Spatial variability in the hyporheic zone refugium of temporary streams. *Aquatic Sciences - Research Across Boundaries*, Online FirstTM, 29 April 2011. This article belongs to the Special Issue "Recent Perspectives on Temporary River Ecology". DOI: <http://dx.doi.org/10.1007/s00027-011-0203-x>.

ABS: A key ecological role hypothesized for the hyporheic zone is as a refugium that promotes survival of benthic invertebrates during adverse conditions in the surface stream. Many studies have investigated use of the hyporheic refugium during hydrological extremes (spates and streambed drying), and recent research has linked an increase in the abundance of benthic invertebrates within hyporheic sediments to increasing biotic interactions during flow recession in a temporary stream. This study examined spatial variability in the refugial capacity of the hyporheic zone in two groundwater-dominated streams in which flow permanence varied over small areas. Two non-insect taxa, *Gammarus pulex* and *Polycelis* spp. were common to both streams and were investigated in detail. Hydrological conditions in both streams comprised a four-month period

of flow recession and low flows, accompanied by reductions in water depth and wetted width. Consequent declines in submerged benthic habitat availability were associated with increases in population densities of mobile benthic taxa, in particular *G. pulex*. The reduction in the spatial extent of the hyporheic zone was minimal, and this habitat was therefore a potential refugium from increasing biotic interactions in the benthic sediments. Concurrent increases in the hyporheic abundance and hyporheic proportion of a taxon's total (benthic + hyporheic) population were considered as evidence of active refugium use. Such evidence was species-specific and site-specific, with refugium use being observed only for *G. pulex* and at sites dominated by downwelling water. A conceptual model of spatial variability in the refugial capacity of the hyporheic zone during habitat contraction is presented, which highlights the potential importance of the direction of hydrologic exchange. KW: Hyporheic refuge hypothesis, Low flows, Habitat contraction, Hyporheos, Benthos, *Gammarus*.

Subterranean Biology editors, 2011. New taxa described in this volume. *Subterranean Biology* 8(2010, Published:11.III.2011):71. DOI: <http://dx.doi.org/10.3897/subtbiol.8.1238>.

Subterranean Biology editors, 2011. World karst science reviews. *Subterranean Biology* 8(2010, Published:11.III.2011):73-75. DOI: <http://dx.doi.org/10.3897/subtbiol.8.1239>.

ŠUNDIĆ (D.), RADUJKOVIĆ (B. M.) & KRPO-ĆETKOVIĆ (J.), 2011. Catalogue of Naidinae and Pristininae (Annelida: Oligochaeta: Naididae) with twenty species new for Montenegro. *Zootaxa* 2737(January 12):1-18, 2 pl., 79 réf. BL: Oligochaetes from rivers, lakes, reservoirs, creeks, and springs. <http://www.mapress.com/zootaxa/list/2011/2737.html>

TABACARU (Ionel) & DANIELOPOL (Dan Luca), 2011. Essai d'analyse critique des principales hypothèses concernant la phylogénie des Malacostracés (Crustacea, Malacostraca). *Travaux de l'Institut de Spéologie "Émile Racovița"* 50:87-119. ABS: Malacostraca, as a Class, represents the largest taxonomic group within the Subphylum Crustacea. This essay is a contribution to the perennial debate of the way to classify the more than 40000 malacostracan species. The various opinions on the way generations of carcinologists systematised Malacostraca in Orders and Superorders is synthetically reviewed. Because of the variety and contrasting opinions a reanalysis of the large carcinological data using a strict phylogenetic framework is presented. It is assumed that Malacostraca is a monophyletic group and within its system one deals, a priori, with monophyletic orders. With this assumption at hand a cladistic analysis of 17 orders and 68 morphological traits is presented. The analysis was done using the Wagner parsimony algorithm implemented in the computer programme PAUP 4.10. Based on 37 informative characters, an unrooted tree with a length of 101 steps was obtained. The results are discussed at long comparing the present data with diverse opinions on the phylogenetic affinities of the Malacostraca main groups. It is especially emphasised the significance of the present results for a new framework of the Malacostraca phylogeny and systematics. The following major conclusions emerge: (1) Phyllocarida (Order Leptostraca) represents a basal group of Malacostraca separated early from its sister-group Eumalacostraca; (2) this latter group constitutes the major stock of Malacostraca; (3) the Syncarida does not represent a monophylum because Bathynellacea is a well individuated basal group of Eumalacostraca. Hence, it is proposed to accept the taxonomic solution of SERBAN (1970) who defined this group as the Superorder Podophalocarida; (4) the Hoplocarida is a collateral stem detached very early from the Eumalacostraca; it presents a mosaic of primitive and advanced (original) morphological traits; (5) the sister-group of Hoplocarida is formed by the bundle of lineages Anaspidacea + Neocarida + Eucarida, representing a major component of Eumalacostraca and which could be assimilated to the taxon Caridoida (however, without including the Bathynellacea); (6) Anaspidacea is the only group of the Superorder Syncarida, the most primitive branch of the Caridoida s. str.; (7) Thermosbaenacea is a well individuated lineage, taxonomically ranked as Superorder Pancarida, the sister-group of the Peracarida; (8) the Neocarida (Pancarida + Peracarida) represents, most probably, the sister-group of Syncarida (Anaspidacea) and the bundle Syncarida + Neocarida forms the sister-group of Eucarida; (9)

Amphipoda and Isopoda do not represent sister-groups; Amphipoda is a more primitive group having affinities to the bundle of lineages united in the taxon Mancoida; both taxa are sister-groups. KW: Crustacea, Malacostraca, Cladistics, Phylogeny. <http://www.speotravaux.iser.ro/11.html>

TARBURTON (Michael K.), 2011. White-rumped Swiftlet Breeding Colony Size and Colony Locations in Samoa. *Helictite* 40(2):35-49, 3 tab. (38 cave descriptions, maps), 1 colour photo, 2 maps, 35 réf. ABS: This paper describes the breeding and roosting caves used by the White-rumped Swiftlet (*Aerodramus spodiopygius*) on Upolu and Savai'i, Samoa. Because these sites tend to be permanent and often difficult to locate, their locations and other information to help find them are provided as a guide for future workers. This study lasted four years and followed close after two devastating cyclones (Val & Ofa) so the data can form the basis for further study once the populations have fully recovered and equilibria for the populations is reached. KW: *Aerodramus spodiopygius*, Swiftlet colony, Lava caves, Samoa. <http://helictite.caves.org.au/abstracts.html>

TAYLAN (M. S.), DI RUSSO (C.), RAMPINI (M.) & COBOLLI (M.), 2011. The Dolichopodainae and Troglophilinae cave crickets of Turkey: an update of taxonomy and geographic distribution (Orthoptera, Rhaphidophoridae). *Zootaxa* 2829(April, 22):59-68, 5 pl., 14 réf. ABS: In this note we report a new series of data on Dolichopodainae and Troglophilinae cave crickets of Turkey, after an extensive survey conducted between the years 2006 and 2010 in the main Anatolian cave systems. These new data, including the identifications of some undescribed taxa, are discussed in the framework of climate regions, vegetation and karst distribution of Turkey, contributing to the study of diversity and geographical distribution of Rhaphidophoridae cave crickets from Turkey. KW: Dolichopodainae, Troglophilinae, cave crickets, Turkey. <http://www.mapress.com/zootaxa/list/2011/2829.html>

TAYLOR (S. J.) & HOLSINGER (J. R.), 2011. A new species of the subterranean amphipod crustacean genus *Stygobromus* (Crangonyctidae) from a cave in Nevada, USA. *Subterranean Biology* 8(2010, Published:11.III.2011):39-47. DOI: <http://dx.doi.org/10.3897/subtbiol.8.1230>.

ABS: *Stygobromus albapinus*, a new stygobiotic amphipod crustacean species in the family Crangonyctidae, is described from two pools in Model Cave in Great Basin National Park, White Pine County, Nevada, USA. The type specimens were collected on two different visits to the cave. The new species is assigned to the hubbsi group, bringing the number of described species in this group to 45, but many other provisionally recognized species assigned to this group remain undescribed. With exception of a single species from deep wells in southeastern Wisconsin, all other members of the *hubbsi* group are recorded from a wide variety of subterranean groundwater habitats (e. g., caves, springs, wells, etc.) in western North America, west of the Great Plains. Although the taxonomic affinities of *Stygobromus albapinus*, n. sp. need further study, the species does appear to share several important morphological characters with a species from a cave in western Utah located approximately 300 km east-northeast of Model Cave. KW: Amphipod, *Stygobromus*, subterranean groundwater, stygomorphic, *hubbsi* group.

TEJEDOR (Adrian), 2011. Systematics of Funnel-Eared Bats (Chiroptera: Natalidae). *Bulletin of the American Museum of Natural History* 353(June):1-140. DOI: <http://dx.doi.org/10.1206/636.1>.

TIAN (M. Y.), 2011. A new subgenus and two new species of the troglobitic genus *Dongodytes* Deuve from Guangxi, China (Coleoptera, Carabidae). *Subterranean Biology* 8(2010, Published:11.III.2011):57-64. DOI: <http://dx.doi.org/10.3897/subtbiol.8.1232>.

ABS: In the present paper, a new subgenus and two new species of the cave-dwelling genus *Dongodytes* Deuve, 1993 are described and illustrated: *Dongodytes (Dongodytodes) deharvengi*, subgen. and sp. nov. and *Dongodytes baxian*, sp. nov. from Du'an Xian, North Guangxi, China. KW: Cave beetles, Trechinae, new subgenus, new species, Guangxi, China.

TINAUT (Alberto) & PÉREZ FERNÁNDEZ (Toni), 2011. *Aphaenogaster cardenai* Espalader, 1981, una hormiga

- ligada con las cavidades. Actualización de su distribución (Hymenoptera, Formicidae). *Monografías Biospeológicas* 6:4-6. RES: Nuevas citas del formicido *Aphaenogaster cardenai* Espalader, 1981, en cuevas de la provincia de Jaén (Andalucía, España).
- TOBLER (Michael) & HASTINGS (Logan), 2011.** Convergent Patterns of Body Shape Differentiation in Four Different Clades of Poeciliid Fishes Inhabiting Sulfide Springs. *Evolutionary Biology* 38(4, December):412-421. DOI: <http://dx.doi.org/10.1007/s11692-011-9129-4>. ABS: We investigated replicated differentiation in four lineages of livebearing fishes (two with the genus *Poecilia* and two within *Gambusia*), which inhabit freshwater habitats and have also colonized sulfide springs in Oklahoma, Mexico, and Venezuela. Sulfide springs are characterized by extreme hypoxia and high concentrations of toxic hydrogen sulfide, which provide a strong source of divergent selection compared to adjacent non-sulfidic habitats. Using geometric morphometric analysis of body shape, we found that sulfide spring populations significantly differ from relatives from regular freshwater habitats in all four lineages investigated. Differentiation is characterized by strong patterns of convergent evolution, with sulfide spring populations consistently exhibiting an increase in head size, even though the magnitude and nature differences varied across lineages. Head size is strongly correlated with an increase in gill size in sulfide spring populations of the genus *Poecilia*, which facilitates efficient oxygen acquisition in the hypoxic H₂S-environment and directly affects survival. The convergent patterns of differentiation support previous findings about the effects of sulfide on trait evolution. KW: Adaptation, Convergent evolution, Divergent selection, *Gambusia*, Hydrogen sulfide, *Poecilia*.
- TOEV (P.) & ENGHOFF (H.), 2011.** A review of the millipede genus *Sinocallipus* Zhang, 1993 (Diplopoda: Callipodida: Sinocallipodidae), with notes on gonopods monotony vs. peripheral diversity in millipedes. *ZooKeys* 90(14.IV):13-34. DOI: <http://dx.doi.org/10.3897/zookeys.90.1291>. ABS: The millipede genus *Sinocallipus* is reviewed, with four new cave-dwelling species, *Sinocallipus catba*, *Sinocallipus deharvengi*, *Sinocallipus jaegeri* and *Sinocallipus steineri*, being described from caves in Laos and Vietnam. With the new records the number of species in the genus reaches six and the genus range is extended to Central Vietnam and North and Central Laos. Both, *Sinocallipus jaegeri* from Khammouan Province in Laos and *Sinocallipus simplipodius* Zhang, 1993 from Yunnan, China, show high level of reduction of eyes, which has not been recorded in other Callipodida. Peripheral characters such as the relative lengths of antennomeres, the number of ocelli, the number of pleurotergites or even the shape of paraprocts and the coloration seem to provide more information for the distinction of the species than do the relatively uniform gonopods. The differences in gonopods mainly concern the shape and length of cannula, the length and shape of coxal processes g and k, and the number of the acicular projections of the femoroid. An explanation is offered for the function of the trochanteral lobe of 9th leg-pair. It provides mechanical support for the cannula and seems to assist sperm charge and insemination during copulation. An identification key to the species in the genus is produced to accommodate the new species. The new species descriptions were automatically exported at the time of publication to a wiki (www.species-id.net) through a specially designed software tool, the Pensoft Wiki Converter (PWC), implemented here for the first time together with a newly proposed citation mechanism for simultaneous journal/wiki publications.
- TORRENTS (O.) & GARRABOU (J.), 2011.** Fecundity of red coral *Corallium rubrum* (L.) populations inhabiting in contrasting environmental conditions in the NW Mediterranean. *Marine Biology* 158(5, May):1019-1028. DOI: <http://dx.doi.org/10.1007/s00227-011-1627-5>. ABS: In this study, we examined the variability and potential patterns of fecundity in the precious Mediterranean red coral *Corallium rubrum* (L. 1758). A total of 12 populations were selected from the NW Mediterranean Sea. We used a hierarchical sampling design to explore fecundity patterns associated with different environmental conditions found in different cave zones (entrance vs. interior), depths (15-22 vs. 39-42 m), and geographic locations (Côte Bleue vs. Calanques). Overall, 240 apical tips from colonies (10 male + 10 female colonies per population) were analyzed. Fecundity ranged between 1.0 ± 0.7 and 3.2 ± 2.3 mature gonads per polyp in female colonies and between 2.5 ± 1.6 and 6.9 ± 2.5 mature gonads per polyp in male colonies. The fecundity of red coral varied significantly for populations dwelling in different cave zones and geographic areas but not for the examined depths. Our results contribute to the knowledge of red coral fecundity in populations not yet studied in the NW Mediterranean and elucidate significant variability in fecundity within different environmental conditions. The information on coral fecundity can contribute to the development of management and conservation plans for red coral populations.
- TRAN (Duc Luong) & CHANG (Cheon Young), 2011.** Two new species of harpacticoid copepods from anchialine caves in karst area of North Vietnam. *Animal Cells and Systems* ?-?-? DOI: <http://dx.doi.org/10.1080/19768354.2011.621979>. ABS: Two new harpacticoid species belonging to the genera *Microarthridion* Lang, 1944 (Tachidiidae) and *Nitocra* Boeck, 1864 (Ameiridae) are recorded from underground caves in the karst area of Ninh Binh Province, North Vietnam. *Microarthridion thanhi* n. sp. is distinguished from congeneric species by the number of setae on the antennary exopod, the structure of leg 5 in both sexes, and the finger-like process modified from an outer distal pinnate seta of the third endopodal segment of leg 2 in the male. *Nitocra vietnamensis* n. sp. has the character combination of six setae on the ellipsoidal exopod of leg 5 in both sexes, the first endopodal segment of leg 1 shorter than the whole exopod, the seta/spine armature of an inner seta of P2-P4 enp-1 and four elements on P2 enp-3, and the reduction of the proximal endite to a seta on the maxillary syncoxa. KW: Anchialine, Harpacticoida, *Microarthridion*, new species, *Nitocra*, Vietnam.
- TRIMBOLI (Shannon R.) & PHILIPS (T. Keith), 2011.** Description of a New Species of *Meziomorphum* Pic (Coleoptera: Ptinidae) from the Western Cape Region of South Africa. *The Coleopterists Bulletin* 65(2, June):109-114. DOI: <http://dx.doi.org/10.1649/072.065.0201>. ABS: *Meziomorphum montagu* Trimboli & Philips, new species, from Montagu Cave near the town of the same name in South Africa is described. This species, like all others within the genus, is characterized by an unusual pronotal setal structure composed of a thin inflated shell covering the surface to various degrees, as well as stout, erect leg and elytral spines. It is suspected to be a cave endemic, the only species in this genus with this characteristic currently known. KW: Gibbiinae, spider beetle, cave, endemic, taxonomy.
- TURBILL (Christopher), BIEBER (Claudia) & RUF (Thomas), 2011.** Hibernation is associated with increased survival and the evolution of slow life histories among mammals. *Proceedings of the Royal Society of London, Series B, Biological Sciences*, March 30:1-9. DOI: <http://dx.doi.org/10.1098/rspb.2011.0190>.
- United States Department of the Interior, National Park Service, New River Gorge, National Park, 2011.** White-Nose Syndrome Confirmed in Park Bats. Release date: April 18, 2011. 3 p.
- University of Alberta Microfungus Collection & Herbarium (UAMH), 2011.** *Fungi*.
- US Forest Service Northern Research Station, 2011.** National Interagency Team Mobilizing To Tackle White-Nose Syndrome of Bats. *Northern Research Station Research Review* 12(Winter):6 p.
- VADER (Wim), 2011.** Bibliography. *Amphipod Newsletter* 35:3-43.
- VAN DAMME (K.) & SINEV (A. I.), 2011.** A new genus of cave-dwelling microcrustaceans from the Dinaric Region (south-east Europe): adaptations of true stygobitic Cladocera (Crustacea: Branchiopoda). *Zoological Journal of the Linnean Society* 161(1, January):31-52. DOI: <http://dx.doi.org/10.1111/j.1096-3642.2010.00639.x>. ABS: We revise "true" stygobitic cladocerans and lift three species from *Alona* Baird, 1843 (Cladocera: Chydoridae). Species of *Brancelia* gen. nov. are inhabitants of saturated karst, collected in pools of residual water in the amphibious zones of a few caves in the Dinaric Region, Europe. All

- species are blind (regression of eye and ocellus), have elongated sensorial equipment (aesthetascs) and a short rostrum, reduced antennal spines, and a globular body. In contrast to earlier hypotheses, there is no epigeal chydorid taxon from the Palaearctic that can be linked to *Brancelia* gen. nov. The new genus may be an offshoot of six-limbed Aloninae, but a littoral-benthic ancestor is not apparent and most likely extinct. Evolution of *Brancelia* gen. nov. parallels that of other subterranean Cladocera like *Phreatalona* Van Damme, Brancelj & Dumont, 2009. We discuss the functional morphology of *Brancelia* gen. nov. and compare its adaptations to a subterranean life mode with those of *Phreatalona*. KW: Adaptation, *Brancelia* gen. nov., caves, stygobiont, taxonomy.
- VASILIU (Niculai Alexandru) & IVAN (Otilia), 2011.** New Oppiid species (Acari, Oribatida, Oppiidae) from romanian caves. *Travaux de l'Institut de Spéologie "Émile Racovitza"* 50:3-14. ABS: Three new species of the family Oppiidae Grandjean, 1951 are described in this paper, as result of study of the faunistic material collected from some Romanian caves: *Lasiobelba (Lasiobelba) pontica* n. sp., *Lauroppia incognita* n. sp. and *Moritzoppia guanicola* n. sp. The genus *Lasiobelba* is recorded for the first time in Romanian fauna, as well as *Ramusella (Rectoppia) fasciata sahariensis* (Hammer, 1975), for which some complementary characters are given. KW: Oribatid mites, Oppiidae, new species, caves, Romania. <http://www.speotravaux.iser.ro/11.html>
- VAUGHAN (Michael J.), MAIER (Raina M.) & PRYOR (Barry M.), 2011.** Fungal communities on speleothem surfaces in Kartchner Caverns, Arizona, USA. *International Journal of Speleology* 40(1, January):65-77. DOI: <http://dx.doi.org/10.5038/1827-806X.40.1.8>. ABS: Kartchner Caverns, located near Benson, Arizona, USA, is an active carbonate cave that serves as the major attraction for Kartchner Caverns State Park. Low-impact development and maintenance have preserved pre-discovery macroscopic cavern features and minimized disturbances to biological communities within the cave. The goal of this study was to examine fungal diversity in Kartchner Caverns on actively-forming speleothem surfaces. Fifteen formations were sampled from five sites across the cave. Richness was assessed using standard culture-based fungal isolation techniques. A culture-independent analysis using denaturing gradient gel electrophoresis (DGGE) was used to assay evidence of community homogeneity across the cave through the separation of 18S rDNA amplicons from speleothem community DNA. The culturing effort recovered 53 distinct morphological taxonomic units (MTUs), corresponding to 43 genetic taxonomic units (GTUs) that represented 21 genera. From the observed MTU accumulation curve and the projected total MTU richness curve, it is estimated that 51 percent of the actual MTU richness was recovered. The most commonly isolated fungi belonged to the genera *Penicillium*, *Paecilomyces*, *Phialophora*, and *Aspergillus*. This culture-based analysis did not reveal significant differences in fungal richness or number of fungi recovered across sites. Cluster analysis using DGGE band profiles did not reveal distinctive groupings of speleothems by sample site. However, canonical correspondence analysis (CCA) analysis of culture-independent DGGE profiles showed a significant effect of sampling site and formation type on fungal community structure. Taken together, these results reveal that diverse fungal communities exist on speleothem surfaces in Kartchner Caverns, and that these communities are not uniformly distributed spatially. Analysis of sample saturation indicated that more sampling depth is required to uncover the full scale of mycological richness across speleothem surfaces.
- VENKATESHWARLU (P.), SRINIVASULU (C.), SRINIVASULU (B.) & KAUR (H.), 2011.** First report of *Taphozous nudiventris* (Chiroptera: Emballonuridae) from Hyderabad, Andhra Pradesh, India. *Small Mammal Mail* 2(2, July/December 2010, January 2011):4-5. <http://www.zoosprint.org/shownewslettersBackIssue.asp?hidNewsLetter=11>
- VENTON (D.), 2011.** The Worst Diseases You Can Catch Underground. *Wired Science* (July 20, 2:25 pm). [www.Wired.com](http://www.wired.com/wiredscience/tag/disease/). <http://www.wired.com/wiredscience/tag/disease/>
- VILA-FARRÉ (M.), SLUYS (R.), ALMAGRO (Í.), HANDBERG-THORSAGER (M.) & ROMERO (R.), 2011.** Freshwater planarians (Platyhelminthes, Tricladida) from the Iberian Peninsula and Greece: diversity and notes on ecology. *Zootaxa* 2779(February 28):1-38, 18 pl., 10 réf. <http://www.mapress.com/zootaxa/list/2011/2779.html>
- VINK (Cor J.) & DUPÉRRÉ (Nadine), 2011.** *Nesticus eremita* (Araneae: Nesticidae): redescription of a potentially invasive European spider found in New Zealand. *Journal of Arachnology* 39(3, December):511-514. DOI: <http://dx.doi.org/10.1636/A11-57.1>. ABS: *Nesticus eremita* Simon, 1879 is naturally found in caves in southern Europe. It has also invaded and established itself in Germany and has now been found in an abandoned air-raid tunnel in Auckland, New Zealand. A diagnosis, redescription, full synonymy and illustrations are presented to aid in the identification of this potentially invasive spider. KW: Cave spider, invasive species, taxonomy, troglophile.
- VOIGT (Christian C.) & LEWANZIK (Daniel), 2011.** Trapped in the darkness of the night: thermal and energetic constraints of daylight flight in bats. *Proceedings of the Royal Society of London, Series B, Biological Sciences* 278(August 7):2311-2317. DOI: <http://dx.doi.org/10.1098/rspb.2010.2290>.
- WADA (S.) & CHIBA (S.), 2011.** Seashore in the mountain: limestone-associated land snail fauna on the oceanic Hahajima Island (Ogasawara Islands, Western Pacific). *Biological Journal of the Linnean Society* 102:686-693. DOI: <http://dx.doi.org/10.1111/j.1095-8312.2010.01604.x>. ABS: Because land snails inhabiting the seashore are most likely to be carried by ocean currents or by attaching to seabirds, land snail fauna on oceanic islands include species derived from the mainland ancestors inhabiting the seashore. If habitat use of the island descendants is constrained by the ecology of the mainland ancestor, the island species that moved from the coastal habitat to the inland habitat may still be restricted to relatively exposed microhabitats with high pH, calcium carbonate-rich substrates, and poor litter cover. We tested this hypothesis by investigating the association between environmental conditions and species diversity of seashore-derived species of the endemic land snails on the oceanic Hahajima Island (Ogasawara Islands). Seashore-derived species showed higher species richness on limestone outcrops than non-limestone areas, whereas the other species showed no significant increase in species richness in limestone outcrops. There was a higher proportion of seashore-derived species on the limestone ridges than on the soil of dolines, even in the limestone area. Accordingly, the species derived from the seashore of the mainland are restricted to microhabitats with poor vegetation cover, poor litter cover, high pH, and calcium carbonate-rich substrates, which supports the hypothesis that the inland species on an island derived from the mainland seashore still prefer environments similar to the seashore. In addition, the seashore-derived species on the limestone outcrop include cave-dwellers lacking functional eyes. This suggests that the probability of colonizing a cave environment is restricted to seashore-derived species. The findings obtained in the present study suggest that habitat use of the ancestral lineages can constrain habitat use of the descendants, even in the oceanic islands with depauperate fauna. This bias in the species composition on the limestone outcrop constrains lineages that can colonize and adapt to the inside of caves, and therefore, habitat use of the ancestral lineages affects the ability of descendant lineages to colonize novel habitats. KW: Colonization, Gastropoda, island biology, phylogenetic constraint, species diversity.
- WANG (C.) & LI (S. Q.), 2011.** A further study on the species of the spider genus *Leptonetela* (Araneae: Leptonetidae). *Zootaxa* 2841(April 29):1-90, 72 pl., 19 réf. ABS: The present paper gives a further study of the spider genus *Leptonetela* Kratochvíl, 1978. A total of twenty-seven species are reported, including seven known species, thirteen new species, seven new combinations and four new synonyms. *Leptonetela kanellisi* (Deeleman-Reinhold, 1971), type species for genus, is redescribed based on the specimens from Greece. The new species are: *Leptonetela chiosensis* sp. nov., *L. gittenbergeri* sp. nov. from Greece; *L. flabellaris* sp. nov., *L. lineata* sp. nov., *L. mengzongensis* sp. nov., *L. mita* sp. nov., *L. parlonga* sp. nov., *L. rudicola* sp. nov., *L. sexdentata* sp. nov., *L. tianxingensis* sp. nov., *L. yaoui* sp. nov. and *L. zhai* sp. nov. from China; *L. pungitia* sp. nov. from Vietnam. The new combinations are: *Leptonetela hangzhouensis* (Chen & al., 1984) comb. nov. and *Leptonetela microdonta* (Xu & Song, 1983) comb. nov. transferred from *Leptoneta*; *Leptonetela identica* (Chen

- & al., 2010) comb. nov., *Leptonetela lophacantha* (Chen & al., 2010) comb. nov., *Leptonetela megaloda* (Chen & al., 2010) comb. nov., *Leptonetela nuda* (Chen & al., 2010) comb. nov. and *Leptonetela robustispina* (Chen & al., 2010) comb. nov. transferred from *Qianleptoneta*. The new synonyms are: *Qianleptoneta lycotropa* Chen & al., 2010 is a junior synonym of *Leptonetela danxia* Lin & Li, 2010; *Qianleptoneta triangula* Chen & al., 2010 is a junior synonym of *Leptonetela digitata* Lin & Li, 2010; *Qianleptoneta sublanata* Chen & al., 2010 is a junior synonym of *Leptonetela reticulopecta* Lin & Li, 2010 and *Qianleptoneta multisetata* Chen & al., 2010 is a junior synonym of *Leptonetela tetracantha* Lin & Li, 2010. In addition, *Qianleptoneta palmata* Chen & al., 2010 is transferred to the genus *Sinoneta*, i. e. *Sinoneta palmata* (Chen & al., 2010) comb. nov. KW: Taxonomy, diagnosis, haplogynae, caves.
<http://www.mapress.com/zootaxa/list/2011/2841.html>
- WANG (C.) & LI (S. Q.), 2011.** Three new species of Telemidae (Araneae) from Western Africa. *Zootaxa* 2902(June 1st):44-58, 12 pl., 8 réf.
<http://www.mapress.com/zootaxa/list/2011/2902.html>
- WANG (S.), MICHAUD (J. P.), TAN (X. L.), ZHANG (F.) & GUO (X. J.), 2011.** The aggregation behavior of *Harmonia axyridis* in its native range in Northeast China. *BioControl* 56(2, April):193-206. DOI: <http://dx.doi.org/10.1007/s10526-010-9325-7>. ABS: *Harmonia axyridis* has become notorious as an urban pest in many of the regions where it has been introduced, despite its numerous contributions to the biological control of insects injurious to agriculture and horticulture. Aggregative behavior prior to overwintering leads to invasions of human habitations as beetles seek refuge from freezing temperatures. Here we describe the aggregation behavior of native *H. axyridis* populations of northeast China that breed in agricultural fields (mostly corn and rice) and shrub/forest habitats and then migrate through rural villages in autumn. More than 140000 beetles were collected during direct observations in 16 villages in five townships in Jilin Province. Beetles aggregated on dwellings shortly after agricultural harvests, favoring white walls with southern exposures, the largest aggregations occurring in villages in mountainous townships at higher elevations. The sex ratio was consistently female-biased and succinic phenotypes were more than twice as abundant as melanic phenotypes in all locations. A special trap compared the relative attractiveness of different surface colors (white>yellow = black>green>red = natural wood) and potential baits (corn pollen = honey>caramel = cocoa>milk = blank control). All aggregations disappeared abruptly just prior to the first frost, whereupon beetles were discovered sheltering in montane caves with southern aspects at higher elevations. Villagers reported substantial expenditures on pesticides in efforts to eliminate beetles from their homes every autumn. Invasion of human habitations appears to be an intrinsic tendency of native *H. axyridis* populations in China, which is the result of behavioral adaptations for cold-avoidance. KW: Aggregation, Attraction, Bait, Coleoptera, Coccinellidae, Overwintering.
- WANG (W.), MA (Xu), MA (Y.), MAO (L.), WU (F.), MA (Xiaojun), AN (L.) & FENG (H.), 2011.** Molecular characterization of airborne fungi in caves of the Mogao Grottoes, Dunhuang, China. *International Biodeterioration & Biodegradation* 65(5, August):726-731. DOI: <http://dx.doi.org/10.1016/j.ibiod.2011.04.006>. ABS: In this study, we analyzed air samples collected from several sites within the Mogao Grottoes, Dunhuang, China. The samples were collected each month from September 2008 to August 2009 from an open cave (OC), a semi-open cave (SC), a closed cave (CC), and the entrance (EN) of the Mogao Grottoes. Sampling was carried out using a six-stage Andersen FA-I sampler; then samples were cultured and fungal isolates were identified by partial sequencing of their internal transcribed spacer (ITS) region. Eleven different fungal genera were found, and the most prevalent was *Cladosporium*, followed by *Fusarium*, *Penicillium*, *Alternaria*, and *Aspergillus*. The fungal community composition varied among the four sites. Fungal community structure was significantly related to site ($r = -0.293$, $p = 0.039$) and to time of year ($r = -0.523$, $p = 0.000$). The concentrations and abundance of airborne fungi varied greatly throughout the year at the four sampling sites. Meteorological parameters (e. g., temperature, relative humidity) and the number of visitors also influenced both abundance and community structure of airborne fungi in the Mogao Grottoes. KW: Aerobiology, Molecular biology, Biodeterioration, Culturable fungi, Mogao Grottoes.
- WAUTHY (Georges) & DUCARME (Xavier), 2011.** Description of a new species of cave mite, *Miracarus grootaerti*, and comparison with *M. abeloosi*, Lions, 1978 (Acari, Oribatida). *Zootaxa* 3111(November 28):1-36, 4 pl., 65 réf. ABS: *Miracarus grootaerti*, new species, is described from a cave in South Belgium. It is compared with another species, *M. abeloosi*. *Miracarus grootaerti* shows the following unique or very uncommon apomorphic traits: (1) postero-lateral carinae *kx* on the prodorsum in contact with the pteromorphs; (2) an anterior shift of the sejugal stigmata; and (3) a rutellar microtube. KW: Oribatid mites, Microzetidae, Brachypylna, taxonomy, description, cave, Belgium.
<http://www.mapress.com/zootaxa/list/2011/3111.html>
- WEI (Yi-Gang) & WANG (Wen-Tsai), 2011.** *Elatostema recurviramum* (Urticaceae), a New Cave-dwelling Species from Guangxi, China. *Novon: A Journal for Botanical Nomenclature* 21(2, June):281-284. DOI: <http://dx.doi.org/10.3417/2009068>. ABS: A new species, *Elatostema recurviramum* W. T. Wang & Y. G. Wei (Urticaceae), from Guangxi, China, is described and illustrated, and its affinities are discussed. It most closely resembles *E. cyrtandrifolium* (Zoll. & Moritzi) Miq., from which it differs in the recurved stems and branches, the denticulate margin of the leaf apex, the larger, ovate stipules, the presence of densely distributed cystoliths on the blade midrib, and the glabrous, lineolate achenes. The new taxon was collected from a limestone cave and is considered to be Critically Endangered (CR) according to IUCN Red List criteria. KW: China, *Elatostema*, Guangxi, IUCN Red List, Urticaceae.
- WEIGAND (A. M.), JOCHUM (A.), PFENNINGER (M.), STEINKE (D.) & KLUSSMANN-KOLB (A.), 2011.** A new approach to an old conundrum-DNA barcoding sheds new light on phenotypic plasticity and morphological stasis in microsnails (Gastropoda, Pulmonata, Carychiidae). *Molecular Ecology Resources* 11(2, March):255-265. DOI: <http://dx.doi.org/10.1111/j.1755-0998.2010.02937.x>. ABS: The identification of microsnailed taxa based on morphological characters is often a time-consuming and inconclusive process. Aspects such as morphological stasis and phenotypic plasticity further complicate their taxonomic designation. In this study, we demonstrate that the application of DNA barcoding can alleviate these problems within the Carychiidae (Gastropoda, Pulmonata). These microsnailed taxa are a taxon of the pulmonate lineage and most likely migrated onto land independently of the Stylommatophora clade. Their taxonomical classification is currently based on conchological and anatomical characters only. Despite much confusion about historic species assignments, the Carychiidae can be unambiguously subdivided into two taxa: (i) *Zospeum* species, which are restricted to karst caves, and (ii) *Carychium* species, which occur in a broad range of environmental conditions. The implementation of discrete molecular data (COI marker) enabled us to correctly designate 90% of the carychiid microsnailed taxa. The remaining cases were probably cryptic *Zospeum* and *Carychium* taxa and incipient species, which require further investigation into their species status. Because conventional reliance upon mostly continuous (i. e. nondiscrete) conchological characters is subject to fallibility for many gastropod species assignments, we highly recommend the use of DNA barcoding as a taxonomic, cutting-edge method for delimiting microsnailed taxa. KW: Carychiidae, DNA barcoding, Gastropoda, microsnailed taxa, morphological stasis, phenotypic plasticity.
- WERNER (Jean), 2011.** *Les bryophytes du Luxembourg - Liste annotée et atlas [The bryophytes of Luxembourg - Annotated list and atlas]*. *Ferrantia* 65:144 p. BL: Cf p. 51 (PDF p. 53), *Schistostega pennata*, surplombs, grottes.
<http://ps.mnhn.lu/ferrantia/liste.asp>
- WEYENETH (Nicole), GOODMAN (Steven M.) & RUEDI (Manuel), 2011.** Do diversification models of Madagascar's biota explain the population structure of the endemic bat *Myotis goudoti* (Chiroptera: Vespertilionidae)? *Journal of Biogeography* 38(1, January):44-54. DOI: <http://dx.doi.org/10.1111/j.1365-2699.2010.02393.x>.

WILLEMART (R. H.) & HEBETS (E. A.), 2011. Sexual Differences in the Behavior of the Harvestman *Leiobunum vittatum* (Opiliones, Sclerosomatidae) Towards Conspecific Cues. *Journal of Insect Behavior*, Online First™, 14 June 2011. DOI:

<http://dx.doi.org/10.1007/s10905-011-9268-6>. ABS:

Preliminary observations of the harvestman *Leiobunum vittatum* found that individuals rub their bodies against the substrate, presenting the possibility of chemical marking. To determine whether or not *L. vittatum* individuals can detect substrate-borne chemical cues, we compared responses of *L. vittatum* males and females to substrate-borne male and female cues. We found that individuals of *L. vittatum* do respond to conspecific cues and that their responses are sex-specific. In response to substrate-borne conspecific cues, male *L. vittatum* spent more time, engaged in more scraping with their sensory legs I, and engaged in pedipalpal tapping more often in the presence versus absence of conspecific cues (male and female equally). Furthermore, in the presence of conspecific cues, males engaged in two behaviors never observed in females-(a) "fast approach" and (b) "jerking", the latter of which was never observed in the presence of cricket cues. In contrast to males, females did not spend more time on conspecific cues, but did spend more time tapping their pedipalps in the presence of male vs female cues, suggesting an ability to distinguish between them. A final experiment explored the possibility that females could discriminate among males of varying histories of agonistic interactions based upon their chemical cues. We found no support for this hypothesis. Our results demonstrate that *L. vittatum* do respond to conspecific cues, and introduce the possibility that intraspecific communication may be mediated in part by chemical cues. KW: Pheromones, chemical communication, Arachnida, leiobuninae, kairomones.

WILSON (G. D. F.) & RANGA REDDY (Y.), 2011.

Andhracoides shabuddin gen. nov., sp. nov., a new phreatoicoidan isopod (Crustacea, Hysimtopidae) from hypogean aquatic habitats in Andhra Pradesh, India. *Zootaxa* 2869(May 6):37-53, 9 pl., 32 r f. ABS: A decade-long survey of ground waters in the state of Andhra Pradesh, India, has so far yielded over sixty new crustacean taxa, belonging to Copepoda, Bathynellacea, Amphipoda, Isopoda, and Ostracoda. This paper describes a new genus and species attributable to the phreatoicoidan isopod family Hysimtopidae Nicholls, and provides ecological and behavioural observations. The new taxon was found in Guthikonda Cave, which is about 8 km from Piduguralla town in the Palnadu area of Andhra Pradesh State. The species belonging to this clade are unusual in that their dorsoventrally flattened pleotelson gives them a non-phreatoicoidan appearance. Because the postanal margin is missing, as in other members of the Hysimtopidae, this is a superficial similarity rather than homology with other isopods. Other unusual features include robust blunt denticles on opposing margins of the pleotelson and protopod of the uropods. The species in this clade, of which *Andhracoides shabuddin* gen. nov., sp. nov. is only the first to be described, are related to *Nichollsia* Chopra & Tiwari, found in northeastern India, and to *Pilbaraphreatoicus* Knott & Halse from the Pilbara region of Western Australia. The new species differs from its undescribed congeners in being nearly devoid of dorsal setae; other species of *Andhracoides* gen. nov. are much more hirsute. KW: Phreatoicidea, cavernicolous, groundwater, systematics, ecology. <http://www.mapress.com/zootaxa/list/2011/2869.html>

WINDSOR (S. P.), PARIS (J.) & BURT DE PERERA (T.),

2011. No role for direct touch using the pectoral fins, as an information gathering strategy in a blind fish. *Journal of Comparative Physiology A: Neuroethology, Sensory, Neural, and Behavioral Physiology* 197(4, April):321-327. DOI:

<http://dx.doi.org/10.1007/s00359-010-0615-4>. ABS:

Blind Mexican cave fish (*Astyanax fasciatus*) lack a functional visual system and have been shown to sense their environment using a technique called hydrodynamic imaging, whereby nearby objects are detected by sensing distortions in the flow field of water around the body using the mechanosensory lateral line. This species has also been noted to touch obstacles, mainly with the pectoral fins, apparently using this tactile information alongside hydrodynamic imaging to sense their surroundings. This study aimed to determine the relative contributions of hydrodynamic and tactile information during wall following behaviour in blind Mexican cave fish. A wall was custom built with a "netted" region in its centre,

which provided very similar tactile information to a solid tank wall, but was undetectable using hydrodynamic imaging. The fish swam significantly closer to and collided more frequently with the netted region of this wall than the solid regions, indicating that the fish did not perceive the netted region as a solid obstacle despite being able to feel it as such with their pectoral fins. We conclude that the touching of objects with the pectoral fins may be an artefact of the intrinsic link between pectoral fin extensions and tail beating whilst swimming, and does not function to gather information. During wall following, hydrodynamic information appears to be used strongly in preference to tactile information in this non-visual system. KW: Cave fish, Navigation, Lateral line, Sensory system, Active touch.

YAMAGUTI (Humberto Yoji), 2011.

An lise filogen tica e biogeogr fica do g nero *Rhopalurus* Thorell, 1876 (Arachnida: Scorpiones: Buthidae). Tese (Doutorado) - Instituto de Bioci ncias da Universidade de S o Paulo. Departamento de Zoologia, vii + 195 p. <http://www.teses.usp.br/teses/disponiveis/41/41133/tde-10062011-144613/fr.php>

YAP (Laura-Marie Y. L.), NORMA-RASHID (Y.), LIU

(Fengxiang), LIU (Jie) & LI (Daiqin), 2011.

Comparative biology of cave-dwelling spitting spiders (Araneae: Scytodidae): Parental care, cooperative prey-capture, cannibalism, natal dispersal and reproductive behaviour. *Raffles Bulletin of Zoology* 59(2, August 31):269-284. ABS: Caves are among the most fascinating environments on Earth. Specialised cave biota provides evidence of evolutionary adaptations for living under severe conditions. However, little attention has been paid to the behaviour of cave spiders. In this study, we compared life history, including maternal care, cooperative prey-capture, tolerance among siblings, and reproductive behaviour, of five cave spitting spiders (Scytodidae). *Scytodes magna* and Guangxi *Scyloxes* sp. 1 occur exclusively in the aphotic zone, whereas *Scytodes fusca*, *S. cavernarum* and the Philippines *Scytodes* sp. 2 are usually found relatively close to cave entrances, known as the light zone. Like in other typical spitting spiders, females of *S. fusca*, *S. cavernarum* and the Philippines *Scytodes* sp. 2 carry their egg-sacs with their chelicerae. However, here we document for the first time that *S. magna* and Guangxi *Scyloxes* sp. 1 females do not carry their egg-sacs in their chelicerae. We found that, instead, they hang their egg-sacs on their webs, which is for the first time documented in scytodids. Although *S. fusca* is a widespread species that inhabits a wide range of habitats, we document for the first time that this species also lives in caves. The five species we studied can each be characterised as being non-social, but we found a few traits that deviate from the typical solitary characteristics. These include late natal dispersal in Guangxi *Scyloxes* sp. 1 spiderlings and low fecundity in *S. cavernarum*. We discuss possible explanations for the solitary habits adopted by the species we studied. KW: Spitting spiders, solitary, maternal care, cave. <http://rmbz.nus.edu.sg/rbz/journal592.html>

YEE (Donald A.) & JULIANO (Steven A.), 2011.

Concurrent effects of resource pulse amount, type, and frequency on community and population properties of consumers in detritus-based systems. *Oecologia* ? DOI: <http://dx.doi.org/10.1007/s00442-011-2209-4>.

YODER (J. A.), BENOIT (J. B.), LaCAGNIN (M. J.) &

HOBBS III (H. H.), 2011. Increased cave dwelling

reduces the ability of cave crickets to resist dehydration. *Journal of Comparative Physiology B: Biochemical, Systemic, and Environmental Physiology*. DOI:

<http://dx.doi.org/10.1007/s00360-011-0555-5>. ABS:

Differential strategies for maintaining water balance are reported for female adults of three cave crickets *Hadenoeus cumberlandicus*, *H. opilionoides* and *H. jonesi*, a species replacement series along the Cumberland Plateau in the southeastern United States. The distribution of *H. cumberlandicus* is much broader than the range of *H. opilionoides*, which is much smaller in body size, and that of *H. jonesi*, which possesses enhanced troglomorphic (cave dwelling) characteristics. Due to high net transpiration (water loss) rates and increased activation energies, *H. jonesi* and *H. opilionoides* are more susceptible to dehydration than *H. cumberlandicus*. To avoid dehydration, *H. opilionoides* and *H. jonesi* require more moisture than *H. cumberlandicus* to counter their higher rates of water loss. The heightened reliance on moisture likely indicates

- that the more troglomorphic *H. jonesi* and smaller *H. opilionoides* are required to spend more time in the moist cave region. Reliance on the cave for *H. cumberlandicus* is presumably less, allowing them to function in epigeal habitats for longer periods and disperse to nearby caves, likely accounting for the more expansive distribution of this cricket. While in the cave habitat, cave crickets are exposed to water-saturated conditions, reducing the pressure of dehydration stress the longer a species remains in this wet environment. This reduced pressure leads to higher water loss rates as cave confinement increases. We conclude that increasing water loss rates associated with increasing troglomorphic adaptation in cave crickets is a side effect of extended residence in stable moist cave environments. KW: Water balance, Cricket, *Hadenocetus*, Cave, Troglomorphic.
- YOUNGBAER (Peter), 2011.** White-Nose Syndrome: Year Six, and Counting. *NSS News* 2011(April):10-14.
- YOUNGBAER (Peter), 2011.** Hellhole Cave, West Virginia: WNS Photo-documentation Trip and Bat Survey, February 20, 2010. A joint project of the National Speleological Society, West Virginia Division of Natural Resources, and the U. S. Fish and Wildlife Service. *NSS News* 2011(April):14-16.
- YOUNGBAER (Peter), 2011.** 2011 White Nose Syndrome Symposium Observations. *NSS News* 2011(July):20.
- ZACHARDA (M.), GRAFITTI (G.) & PIVA (E.), 2011.** New taxa of *Rhagidia* and *Foveacheles* (Acari: Prostigmata: Rhagidiidae) from Italian and French caves, with keys to adults of subgenera *Deharvengiella* and *Mediostella*. *Journal of Natural History* 45(11/12, March):667-683. DOI: <http://dx.doi.org/10.1080/00222933.2010.535915>. ABS: Three new species of rhagidiid mites from France and Italy, *Rhagidia (Deharvengiella) parallelosea* sp. nov., *R. (D.) serpentiforma* sp. nov. and *Foveacheles (Mediostella) carnichensis* sp. nov., are described. Keys to adults of the known species of *Rhagidia (Deharvengiella)* and *Foveacheles (Mediostella)* are presented. KW: Rhagidiidae, Italy, France, key.
- ZACHARDA (M.), ISAIA (M.) & PIVA (E.), 2011.** New troglobitic species of the genus *Troglocheles* (Acari: Prostigmata: Rhagidiidae) from caves in northern Italy and Austria, with a key to adult species of the genus. *Journal of Natural History* 45(11/12, March):641-666. DOI: <http://dx.doi.org/10.1080/00222933.2010.535914>. ABS: Three new troglobitic species of rhagidiid mites of the genus *Troglocheles* - two from northern Italy, *Troglocheles quinquosolenidiata* sp. nov. and *T. lanai* sp. nov., and *T. christiani* sp. nov. from Austria - are described. A key to adults of the known species of the genus *Troglocheles* Zacharda of the world is given. In these vicariant species the different apomorphic morphological traits, troglomorphisms, are discussed in aspects of allopatric speciation, climatic relict hypothesis and evolutionary processes of adaptation to specific niches and time of occupation of the subterranean habitat. All new taxa are authored by M. ZACHARDA only. KW: Acari, Prostigmata, Rhagidiidae, Italy, Austria.
- ZAGMAJSTER (Maja), PORTER (Megan L.) & FONG (Daniel W.), 2011.** Hydrozoans in subterranean freshwaters, with new findings from US and Mexico. *Speleobiology Notes* 3:4-10. KW: Cnidaria, Hydrozoa, *Hydra* sp.; Smoke Hole Cave, Blowhole Cave, West Virginia, USA; Cueva de la Curva, Mexico; Pajsarjeva jama, Kompoljska jama, Slovenia; Engelbrecht Cave, South Australia; new records. http://www.nsm.buffalo.edu/Research/SPELEOBIOLOGY_NOTES/index.php/Speleo/article/view/27
- ZHANG (Feng) & DEHARVENG (L.), 2011.** Cave *Sinella* (Collembola: Entomobryidae) from China. *Journal of Natural History* 45(19/20, May):1213-1231. DOI: <http://dx.doi.org/10.1080/00222933.2011.552805>. ABS: All nine Chinese cave *Sinella* species are reviewed; four of them from South China are new to science: *Sinella lipsae* sp. nov., *Sinella longiantenna* sp. nov., *Sinella yunnanica* sp. nov. and *Sinella longiungula* sp. nov. Some important characters, such as length of antennae, mucro, claw structure, chaetae on ventral side of the head and body chaetotaxy are discussed. KW: Taxonomy, new species, troglobites, chaetotaxy.
- ZHANG (Li-Bing) & HE (Hai), 2011.** *Polystichum fengshanense*, sp. nov. (sect. *Haplopolystichum*, Dryopteridaceae) from Karst Caves in Guangxi, China based on Morphological, Palynological, and Molecular Evidence. *Systematic Botany* 36(4, November 14):854-861. DOI: <http://dx.doi.org/10.1600/036364411X604877>. ABS: A new fern species, *Polystichum fengshanense*, is described and illustrated from nine karst caves in northern Guangxi, China. It is a member of *Polystichum* sect. *Haplopolystichum* (Dryopteridaceae). A phylogenetic analysis based on chloroplast trnL-F sequences suggests that the new species is most closely related to *P. cavernicola*, *P. minutissimum*, and *P. speluncicola*, species described from karst caves in adjacent southern Guizhou. Morphologically, *P. fengshanense* can be easily distinguished from these three species by having narrow-type microscales on the abaxial laminar surface, sessile pinnae, and sori closer to the midrib. Palynologically, *P. fengshanense* has granulate perispore sculpturing, whereas *P. cavernicola* has verrucate perispore sculpturing and *P. speluncicola* has cristate perispore sculpturing with numerous spinules. *Polystichum fengshanense* is considered to be critically endangered (CR) based on IUCN red list criteria because of its restricted distribution. KW: Cave flora, Dryopteridaceae, Guangxi, phylogeny, *Polystichum fengshanense*, sect. *Haplopolystichum*, spore morphology, trnL-F sequence.
- ZHAO (Y.-H.), GOZLAN (R. E.) & ZHANG (C.-G.), 2011.** Out of sight out of mind: current knowledge of Chinese cave fishes. *Journal of Fish Biology* 79(6, December 1):1545-1562. DOI: <http://dx.doi.org/10.1111/j.1095-8649.2011.03066.x>. ABS: Caves and karsts are among the most threatened ecosystems in the world. They are very fragile, balanced habitats with high levels of endemic species that are extremely sensitive to environmental changes. In recent decades, however, threats from rapid economic growth have increased the need for conservation efforts for cave-dwelling communities. In addition, difficulties in accessing and sampling these habitats mean that they remain as one of the least known ecosystems in the world with modern studies of cave fishes only starting in China during the 1980s. Here, the current status of cave fishes in China is reviewed. China is host to the highest number of cave fish species in the world, with 48 troglobite species out of a total of 101 cave fish species. All of these cave fish species (one order and three families) and half of the genera are endemic to China with *Sinocyclocheilus* being the most speciose cave fish genus. Species from this genus possess horns and humpbacks resulting from processes of parallel evolution, but the function of these features remains unknown. With the exception of *Onychostoma macrolepis* distributed in north China, all other species are found in the karst environment of the Yunnan-Guizhou Plateau. Sympatric distribution is common, and sometimes several different cave fish species can be found in the same cave or subterranean river. For this reason, Chinese cave fishes represent an important evolutionary framework.
- ŽIC (Vesna), TRUESDALE (Victor W.), CUCULIĆ (Vlado) & CUKROV (Neven), 2011.** Nutrient speciation and hydrography in two anchialine caves in Croatia: tools to understand iodine speciation. *Hydrobiologia* DOI: <http://dx.doi.org/10.1007/s10750-011-0686-4>. ABS: Despite iodine being one of the most abundant of the minor elements in oxic seawater, the principal processes controlling its interconversion from iodate to iodide and vice versa, are still either elusive or largely unknown. The two major hypotheses for iodate reduction involve either phytoplankton growth in primary production, or bacteria during regeneration. An earlier study intended to exploit the unusual nature of anchialine environments revealed that iodide is oxidised to iodate in the bottom of such caves, whereas reduction of iodate occurs in the shallower parts of the water column. This investigation was made on the hypothesis that study of the nitrogen and phosphorus nutrient systems within the caves might offer a bridge between the iodine chemistry and the marine bacteria which are assumed to be the agent of change of the iodine in the caves. Accordingly, the hydrography, the nutrient chemistry, and some further iodine studies were made of two anchialine caves on the east coast of the Adriatic Sea in Croatia. Iodate and iodide were determined by differential pulse voltammetry and cathodic stripping square-wave voltammetry, respectively. Total iodine was determined indirectly, as

iodate, after oxidation of reduced iodine species with UV irradiation and strong chemical oxidants. Nutrient concentrations were measured by spectrophotometry. Nutrient profiles within the well stratified water columns indicate a relatively short-lived surface source of nitrate and phosphate to the caves, with a more conventional, mid-water, nutrient regeneration system. The latter involves nitrite and ammonium at the bottom of the halocline, suggestive of both autotrophic and heterotrophic microbial activity. High iodate/low iodide deep water, and conservative behaviour of total inorganic iodine were confirmed in both systems. Iodate is reduced to iodide in the hypoxic region where nutrient regeneration occurs. The concentrations of organic iodine were surprisingly high in both systems, generally increasing toward the surface, where it comprised almost 80% of total iodine. As with alkalinity and silica, the results suggest that this refractive iodine component is liberated during dissolution of the surrounding karst rock. A major, natural flushing of one of the caves with fresh water was confirmed, showing that the cave systems offer the opportunity to re-start investigations periodically. KW: Anchialine systems, Redox speciation, Inorganic iodine, Organic iodine, Nutrients.

ZIGLER (Kirk S.) & COOPER (Grant M.), 2011. Brood size of the stygobiotic asellid isopod *Caecidotea bicrenata bicrenata* from Franklin County, Tennessee, USA. *Speleobiology Notes* 3:1-3. KW: Isopoda, Asellidae, *Caecidotea bicrenata bicrenata*, Buckets of Blood Cave, Franklin County, Tennessee, reproduction.
http://www.nsm.buffalo.edu/Research/SPELEOBIOLOGY_NOTES/index.php/Speleo/article/view/26
