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NEW RECORDS OF *EPIOPHLEBIA LAIDLAWI* TILLYARD IN BHUTAN, WITH NOTES ON ITS BIOLOGY, ECOLOGY, DISTRIBUTION, ZOOGEOGRAPHY AND THREAT STATUS (ANISOZYGOPTERA: EPIOPHLEBIIDAE)*

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E. laidlawi larvae were found for the first time in Bhutan, collected in 5 streams in W and central parts of the country, at altitudes 2350-2885 m a.s.l. The habitats and larval development stages are described, and a brief overview is presented on the biology, ecology and known distribution in Bhutan, India and Nepal. The sp. inhabits fast running mountain streams in Himalayan broadleaf and subtropical pine forests at an altitude of 1300-2885 m a.s.l. The palaeobiogeographical history of the fossil Epiophlebiidae and Stenophlebiidae and of the 2 extant *Epiophlebia* spp. is discussed. *E. laidlawi* is a relict sp., living in headwaters of pristine mountain forests. It is endangered because of human influences, such as deforestation, provision of water power, erosion and other factors. The best protection would be ensured by the conservation of specific habitats in vast protected areas. This has at least partly been put into action in Nepal.

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SEXUAL DIMORPHISM IN IMMUNITY: A TEST USING INSECTS (COLEOPTERA, DIPTERA, LEPIDOPTERA, ODONATA)

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Evolutionary theory indicates that ♂♂ should allocate more resources to increase mating efficiency trading off longevity while ♀♀ would actually do the reverse to gain in egg production and laying. One recent hypothesis dictates that these differences would lead ♀♀ to invest more in immunity (to increase longevity) than ♂♂ (which will invest more in courtship traits). This difference should be more accentuated in spp. whose ♀♀ mate multiply, in which ♂♂ will invest less to immunity than in spp. where ♀♀ mate once. Here, this was tested by using 8 insect spp. with varying sexual selection pressure, that belong to 4 orders. For each order, one sp. was used in which ♀♀ accept one (or close to) mating during their life and another in which ♀♀ mate multiply. Encapsulation ability, phenoloxidase activity and hydrolytic enzymes were examined. Animals were virgin, sexually mature and well-fed. Comparative analyses provided restricted support as for ♀♀ having higher immune values and that this pattern should be more evident in relation to sexual selection intensity when both pairs of spp. per order and all spp. were analyzed. This study calls for a reformulation of current assumptions of immune costs in relation to gender life history differences.

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DESCRIPTION OF THE LARVA OF *PHYLLOPETALIA APOLLO* SELYS AND REDESCRIPTION OF THAT OF *HYPOPETALIA PESTILENS* McLACHLAN (ANISOPTERA: AUSTROPETALIIDAE)

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The *P. apollo* larva is described for the first time and the larva of *H. pestilens* is re-described. These are the first records of these spp. for Argentina and for the eastern slope of the Andes. In order to determine the larval instars, length of inner wing pads was plotted against head width and a linear regression was estimated for both spp. 6 instars were identified for *H. pestilens* and 8 for *P. apollo*.

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REPRODUCTIVE BEHAVIOR OF *HYPOLESTES TRINITATIS* (GUNDLACH) IN CUBA (ZYGOPTERA: MEGAPODAGRIONIDAE)

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The study was conducted at the Dos Bocas stream nr Santiago de Cuba, during Aug.-Sept. 2007 (30 d) and in May 2008 (5 d). ♂♂ are territorial, defending perching sites and returning to the same place for several days. Sperm translocation lasted about 9 s and copulation about 7.3 min. It consisted of 2 stages, recognized from the position and movements of ♂'s abdomen. Stage I took ca 6.6 min and is probably associated with sperm removal. Stage II lasted about 41.3 s, involving probably sperm transfer. Oviposition lasted for just over 1 h; the male guarding his mate during ca 30 min, whereafter he returned to his perch.

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SHORT COMMUNICATIONS

PALAEMNEMA BRASILIENSIS SPEC. NOV., FIRST PLATYSTICTIDAE RECORD FROM BRAZIL (ZYGOPTERA)

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The new sp. is described and illustrated based on ♂ specimens collected in the State of Amapá. Holotype ♂: Brazil: Amapá, Serra do Navio, I-1957. It is close to *P. edmondi* Calvert and *P. brevignoni* Machet.

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DIFFERENCES IN ODONATA ABUNDANCE AND DIVERSITY IN PESTICIDE-FISHED, TRADITIONALLY-FISHED AND PROTECTED AREAS IN LAKE VICTORIA, EASTERN AFRICA (ANISOPTERA)

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The growing use of pesticides for fishing is a current practice of concern for biodiversity in Eastern Africa. There is little information available, however, on the extent and effect of this practice on conspicuous indicator groups like dragonflies. Odon., especially during the larval stage, are particularly vulnerable to pesticides. This survey found significant differences in both dragonfly abundance and diversity in bays of Lake Victoria that had been fished using pesticides. Only 1-2 dragonfly spp. can be found in areas routinely pesticide-fished in contrast with > 20 spp. in protected areas. This survey highlights the detrimental effect of pesticide fishing on invertebrates.

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SENSILLA ON THE MALE PARAPROCTS OF *PROTONEURA ROMANAE* MEURGEY (ZYGOPTERA: PROTONEURIDAE)

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The paraprocts of *P. romanae* Meurgey bear 2 types of aporous mechanoreceptive sensilla: sensilla chaetica and sensilla filiformia. During tandem formation the tactile sensilla chaetica, inform the ♂ of the maintenance of the ♀. The sensilla filiformia are vibroreceptors sensitive to air movements caused by the female taking off.