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Natural stable isotope ratios and fatty acid profiles of estuarine tidal flat nematodes reveal very limited niche overlap among co-occurring species and a high prominence of omnivory

Tom Moens[1,*] and Xiuqin Wu[1]

[1] Ghent University, Department of Biology, Marine Biology Research Unit, Krijgslaan 281/S8, 9000 Ghent, Belgium
[*]tom.moens@ugent.be

The high local-scale species diversity of marine meiofauna, and of nematodes in particular, has puzzled ecologists for decades. Both pronounced niche differentiation and neutral dynamics have been suggested as mechanisms underlying that high diversity. Differential resource use is thé most plausible basis for niche differentiation, yet the vast majority of studies demonstrating that this is prominent in marine nematodes are based on laboratory experiments on single species or highly simplified assemblages. Only a small number of studies have investigated resource differentiation under natural conditions. Here we use natural stable-isotope ratios of carbon and nitrogen, as well as fatty-acid profiles, to assess differential resource use and trophic structure in nine abundant estuarine tidal flat nematode species, comprising different presumed feeding modes (deposit feeders, epistratum feeders, predators, unknown) and resource guilds (herbivores, carnivores, unknown). We demonstrate that resource differentiation is pronounced among as well as within feeding modes and resource guilds. Nematodes comprise up to three different trophic levels (from primary to tertiary consumers), yet with the exception of some herbivores, omnivory is prominent. Bivariate isotopic niche spaces were of similar size among most species, irrespective of their trophic level. Herbivory importantly contributes to the nutrition of herbivores as well as carnivores; it mainly targets diatoms in some species, yet prominently includes dinoflagellates in others. Bacteria, in contrast, appear to be of limited nutritional importance. *Odontophora setosus* is identified as a predator/omnivore with a trophic level in between that of secondary and tertiary consumers.

Keywords: Stable isotopes, fatty acids, marine nematodes, resource partitioning, trophic level, omnivory

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Seasonality in nematodes life cycles and community's structure in mangroves (Red River, North Vietnam)

Alexei Tchesunov[1,*], Vadim Mokievsky[2], Nguyen Dinh Tu[3] and Nguyen Vu Thanh[3]

[1] M.V. Lomonosov's Moscow State University, Faculty of Biology, Department of Invertebrate Zoology, Vorobievy Gory, Moscow, Russia
[2] P.P. Shirshov Institute of Oceanology RAS, Nakhimovsky pr., 36, Moscow, Russia
[3] Department of Nematology, Institute of Ecology and Biological Resources, Vietnamese Academy of Science and Technology, 18 Hoang Quoc Viet, Cau Giay, Hanoi, Vietnam
[*]avtchesunov@yandex.ru

Prominent seasonality were found both in community's structure and in life cycles of nematodes on mangrove

intertidal flat. Seasonal changes in nematodes community were studied on the station situated in the mangrove forest of *Kandelia candel* in the Red River delta, North Vietnam. Quantitative samples were collected seasonally in muddy sediments between mangrove trees (in October, January, April and August). Totally 69 species from 44 genera and 21 family were identified in samples. Total nematodes abundance was rather stable with no prominent pikes, the mean values fluctuate around 600 ind./10 cm^2, seasonal differences were not significant. Species composition is stable during the year and changes appear in relative proportion within the group of dominated species. Two seasonal aspects in community structure described: in autumn and winter *Sabatieria* + *Terschellingia* are most common, while *Ptycholaimellus* + *Metachromadoroides* predominate in spring and in summer. Seasonality in community composition reflects mainly combination of different life cycles of most abundant species. Age structure was described for 11 most common species by seasons. Seasonal changes in abundance found for all the species in different extent, five species reveal strong seasonal changes with maximum in different seasons. Life cycles varied from rather smooth with continuous reproduction along the year to prominent seasonality in reproduction.

Keywords: Nematoda, Vietnam, mangroves, seasonal changes, communities' dynamics

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Is distribution of microcrustaceans (Harpacticoida, Ostracoda) in spring habitats temperature dependent? A comparison from regional and local scale

Marie Zhai[1,*], Dana Klímová Hřívová[1] and David Výravský[1]

[1] Department of Botany and Zoology, Masaryk University, Kotlářská 2, 611 37, Brno, Czech Republic
*marie.zhai@yahoo.com

Spring habitats are relatively environmentally stable due to the buffering role of groundwater. Nevertheless, there are some temporal fluctuations in water temperature and level in springs, especially at helocrenes even if they are perennial. According to an analysis of the temperature regime at spring fens in the Western Carpathians, the sites largely differ in their temperature stability. However, little is known about how the water temperature affects spring fen microcrustacean assemblages, which include all crenophilic, oligostenothermic, and ubiquist species, and what is the role of small scale heterogeneity and seasonal variation in water temperature at the spring fens.In this study, we documented the response of the whole microcrustacean assemblages and individual species to water temperature in the spring fens on two contrasting spatial scales. 1) On regional scale, we carried out one-shot sampling at 34 spring fen sites and analysed water temperature regime of the individual sites based on two-year continuous measurements of water temperature. 2) On local scale, we sampled four different mesohabitats (pool, mud, tufa, and moss) at three occasions (spring, summer and autumn) to cover the main within-site variation in a heterogeneous but very stable spring fen, and measured water temperature for each sample.We found that water temperature was important for the microcrustaceans at both scales. At regional scale, the effect of high summer temperatures was the most significant for the species composition. At local scale, species distributions were highly patchy, water temperature being the most significant variable; however, seasonal differences in species distributions seemed relatively small, which corresponded with the relative environmental stability of the site. Our study suggests that microcrustacean distribution in spring fens reflects