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Program & Abstracts

65) Composition and diversity of polychaete assemblages in the continental shelf of the southern Mexican PacificPablo Hernández-Alcántara¹, Francisco F. Velasco-López¹, Vivianne Solís-Weiss², & León F. Álvarez-Sánchez³¹Unidad Académica de Ecología y Biodiversidad Acuática, Universidad Nacional Autónoma de México; ²Unidad Académica de Sistemas Arrecifales, Universidad Nacional Autónoma de México; ³Unidad de Informática Marina, Universidad Nacional Autónoma de México

For this study, 38 stations between 42 and 109 m depth were ordered along 14 transects perpendicular to the coastline of the continental shelf in the southern Mexican Pacific, with the aim to study the spatial variations of the composition and diversity of the local polychaete populations present. A total of 3741 specimens from 82 species and 27 families were identified. Density and species richness values showed ample variability (2–417 ind./0.1m²; 1–24 spp./sta.) and exponentially decreased with depth ($R^2 = 0.45$ and 0.54 , respectively). However, the average distinctness diversity increased with depth (Delta+: 70.3–100) due to the fact that most of the species belonged to different genera, which suggests greater morphological diversity of polychaetes. *Linopherus kristiani* (1359 ind. 0.1 m⁻²), mainly occurring at the middle and outer shelf, and *Paraprionospio pinnata* (1338 ind. 0.1 m⁻²), mostly located in shallow depths, were clearly the dominant species. Besides these polychaetes, the faunal assemblages were significantly structured ($p = 0.951$) by *Aglaophamus verrilli*, *Cossura brunnea*, *Hermundura riojai*, *Magelona marianae* and *M. pacifica*. The spatial changes in number of species and taxonomic distinctness were slightly correlated with depth ($\rho = 0.4$ and 0.2) and sand percentage ($\rho = 0.35$ and 0.2), and density values with depth ($\rho = 0.3$) and phosphate levels ($\rho = 0.26$).

66) Spatial and bathymetric trends in polychaete assemblages from deep-sea of the southern Gulf of California, eastern PacificAraceli Jaquelin Mercado-Santiago¹, Pablo Hernández-Alcántara², & Vivianne Solís-Weiss³¹Facultad de Ciencias, Universidad Nacional Autónoma de México; ²Unidad Académica de Ecología y Biodiversidad Acuática, Universidad Nacional Autónoma de México; ³Unidad Académica de Sistemas Arrecifales, Universidad Nacional Autónoma de México

The polychaete assemblages from the deep sea of the southern Gulf of California were characterized in terms of faunal composition, species richness and distributional patterns. During the spring season of 2012 and 2013, 15 stations located between 238 and 2900 m depth were sampled. A total of 85 species belonging to 59 genera and 26 families of polychaetes were identified. The families Onuphidae (11 spp.), Spionidae (10 spp.) and Cirratulidae (8 spp.) were the richest in species, while the families Paraonidae (119.04 ind./0.1 m²), Spionidae (95.23 ind./0.1 m²), Lumbrineridae (73.80 ind./0.1m²) and Pilargidae (69.04 ind./0.1 m²) were the most abundant, representing 51.9% of fauna. The number of individuals and species displayed an inverse parabolic distribution with depth, with the lowest values (4.76–42.86 ind./0.1m²; 2–6 spp.) at middle depths (651–915 m). Three faunal assemblages defined by the bathymetric levels were detected ($R_{ANOSIM} = 0.405$, $p = 0.04$): 1) *Prionospio ehlersi-Subadyte mexicana-Syllis alternata*, located at stations lower than 348 m; 2) *Aricidea* sp. A-*Ninoe jessicae* located between 651 and 915 m depth; and 3) *Aglaophamus paucilamellata-Aricidea (Acmira) simplex-Ancistrosyllis groenlandica* distributed at more than 1335 m depth.

67) Polychaetes from underwater marine caves near Marseille (France, Mediterranean)Alexander Tzetlin¹, Anna Zhadan¹, Elena Vortsepneva¹, Laurent Vanbostal², Thierry Perez², Alexander Ereskovsky², & Pierre Chevaldonné²¹M.V. Lomonosov Moscow State University; ²IMBE, Aix-Marseille Université

We investigated polychaetous annelids from soft sediment in three underwater marine caves located near Marseille and La Ciotat (Calanques National Park - NW Mediterranean): 3PP Cave, Jarre III Cave, Pérès Cave. To different degrees, these caves mimic deep-sea environmental conditions and they are famous by presence of carnivorous sponges of the family Cladorhizidae. We processed samples by using meiobenthic procedures (130- μ m sieve). The samples obtained in 2007 were compared with those collected in 2018–2019. We identified representatives of 29 families: 24 families in the 3PP Cave, 23 in Jarre III Cave, 9 in Pérès cave. Oweniidae and Fabriciidae are newly reported from marine caves. The specific composition of polychaete fauna of the caves is peculiar and differs from surrounding biotopes. The lists of families for 2007 and 2018–2019 years are similar; it means the cave polychaete fauna is stable over time. The further studies will include identifications of polychaetes to species level, molecular genetic analysis and comparisons of cave fauna with one from deep-water Mediterranean trenches.

68) Comprehensive study of the head region and tentacle apparatus in *Owenia borealis* (Annelida: Oweniidae)Elena Temereva¹, Alexander Tzetlin¹, & Vyacheslav Dyachuk²¹M.V. Lomonosov Moscow State University; ²National Scientific Center of Marine Biology, Vladivostok

The organization of tentacle apparatus in bilaterians may help to understand the morphology of the last common bilaterian ancestor (LCBA). The main question is if LCBA possessed tentacle apparatus or not. Oweniidae is clade of annelids with “basal

radiation”, which might retain some ancestral features of the LCBA. The organization of tentacles of *Owenia borealis* is studied by CLSM, SEM, TEM, and 3D reconstructions. The tentacle apparatus consists of 4 pairs of arms, which are located laterally and divided into left and right groups by indistinct dorsal ridge and ventral pharyngeal organ. The latter consists of two parts: the dorsal lip and the ventral pouch, which contains the inner cavity and has a different organization of the ventral and the dorsal epithelium. The pharyngeal organ is surrounded by ventro-lateral lips. Oral side of tentacles and ventro-lateral lips are covered by numerous cilia, whereas the pharyngeal organ lacks cilia. There are two nerve rings: inner and outer. Each arm is innervated by six thick nerves and many thin neurites, which start from the outer nerve ring. The coelomic lining of tentacle is formed by specialized coelothelium and myoepithelial monociliated cells. The specificity of tentacles organization i.e. the absence of specialized zones along tentacle, independent innervation of tentacles, the histological simplicity of coelomic lining and nerve rings in *O. borealis* may be evidence of the ancestral state or unspecialized tentacle apparatus, which was used for food particles collection, how the LCBA probably did. The Russian Science Foundation supports this study (#18-14-00082).

69) Revision of three nereidid species complexes (Nereididae): reinstatement of two genera, and description of one new genus and six new species

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Nereidids are among the polychaetes with the highest number of genera and species; nevertheless, the taxonomy of several heterogeneous taxa remain poorly understood because a robust morphological framework is not still established. The species complexes within the family are common examples of related species groupings with unclear morphological boundaries. Among them, the complexes ‘*Neanthes acuminata*’, ‘*Alitta succinea*’ and ‘*Alitta virens*’ require consideration as for being the nominal species regarded as widely distributed, invasive, or appreciated by the maritime industries, respectively. In order to assess their convoluted taxonomy and to clarify the status of other 30 closely related species, a comprehensive morphological study of those three complexes are performed based upon the examination of type and non-type materials. This revision unveils the state of taxonomy not only at the species level, but also to genus. *Alitta* is redefined to include exclusively 7 species related to *A. virens* (type species). *Stratonice* is reinstated to transfer 13 species similar to *A. succinea*, including the type species of *Nectoneanthes*, and to allocate 3 new species. *Neanthioides*, whose type species was a former junior synonym of *N. acuminata*, is reinstated and distinguished from *Neanthes* to include 6 species (2 new ones). Finally, a new deep-sea genus similar to *Neanthioides* is established for one nominal and a new species. Hence, 27 redescriptions are provided, 11 species are reinstated, and 25 new combinations, 3 synonymies, and 6 new species are proposed. A more comprehensive taxonomic panorama of *Alitta* is presented, and the status of the species complexes are also elucidated.

70) A remarkable new deep-sea nereidid with branchiae

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A new genus and species of nereidid from off the Pacific coast of Costa Rica are described. Male epitokes swimming near the sea floor (1000 m depth) were collected and videorecorded using the HOV *Alvin* (operated from R/V *Atlantis*) in October 2018. Epitokes were also observed some months later. Three epitoke males and one infaunal female have been examined. The males interestingly exhibits branchial filaments in the cirrostyle of both dorsal and ventral cirri, a unique feature among nereidids. The males also have a complete prostomium, elongate dorsal ligules, very long neuropodial homogomph falcigers, enlarged cirrophore of dorsal cirri, neuropodia with only postchaetal lobe, conical paragnaths on both pharyngeal rings, marked epitokal modifications, and lacks eyes. The presence of branchiae is exceptional within Nereididae, only *Dendronereis* and *Dendronereides* share this feature. However, in contrast to the new taxon, these emerge from the cirrophore of dorsal cirri. Likewise, pharyngeal papillae are only present in those two genera, the prostomium is indented, the falcigers (if present) are much shorter, and at least three lobes are developed in some neuropodia. Preliminary mitochondrial DNA analysis relates the new taxa with *Tambalagama*, *Laeonereis*, *Hediste* and *Alitta*, but further data is needed. In addition to the branchiae, the new taxon is different from these genera in the shape of prostomium and cirrophore of dorsal ligule, number of ventral cirri, and presence/type of falcigers and pharyngeal projections. Further molecular analysis, including nuclear genes and more genera, will be performed in order to assess the placement of this extraordinary nereidid.

71) Developmental stages of notochaetae and anterior segments in nectochaete larvae during metamorphosis in *Chrysopetalum* species (Chrysopetalidae: Annelida)

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Chrysopetalum species display an adult morphology of notochaetal paleae and two pairs of tentacular cirri on segments 1 and 11. Nectochaete larvae exhibit a primary spinose notochaetal morphology after settlement from the plankton which is