Posters

P1. **Molly Kennedy**[1] and Kirsten Jensen[1]
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Uncovering a putative synapomorphy in a clade of species of *Caulobothrium* parasitizing whiprays
The genus *Caulobothrium* was erected by Baer in 1948 based on Linton's (1890) description of *Rhinebothrium longicolle* from the spiral intestine of the Bullnose eagle ray, *Myliobatis freminvillei*. Presently, there are 10 valid species of *Caulobothrium* recognized. Distinguishing features of this genus include the presence of stalked bothridia with multiple loculi and apical sucker, as well as the presence of post-vaginal testes. In addition to eagle rays (Myliobatidae), members of this genus are known to parasitize at least one species of stingray (Dasyatidae) globally. Preliminary molecular data suggest the presence of three new, closely related, species of *Caulobothrium* parasitizing whiprays in the genus *Maculabatis*. For this study we examined host specimens, representing two described and one potentially undescribed species of *Maculabatis* (*M. bineeshi*, *M. pastinacoides*, and *M*. cf. *gerrardi 6*) from three localities across the Indo-Pacific region. We used light and scanning electron microscopy to distinguish these new species from previously described species and each other. The three new species share the presence of gladiate spinitriches in a posterior unpaired loculus of each bothridium, a feature not found in any of the described species. Features of both the scolex and proglottids—such as loculi and testes number—distinguish these new species from one another. This work expands the host associations of *Caulobothrium* to include *Maculabatis.* Further investigation into the diversity of *Caulobothrium* is warranted, as molecular sequence data from a range of primarily stingray hosts indicate that additional descriptions will at least double the number of recognized species.

P2. **Katherine Hanselman[1]** and Kirsten Jensen[1]
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Taxonomic evaluation of the tapeworm genus *Polypocephalus* and the status of its type species in a phylogenetic context
The tapeworm genus *Polypocephalus*, with *Polypocephalus radiatus* Braun, 1878 as its type, was described from the sharpnose guitarfish, *Glaucostegus granulatus* (as *Rhinobatus granulatus*), from the "ostindischen Meeren" (east Indian Ocean) based on incomplete specimens. The species is characterized by the possession tentacles and craspedote proglottids with 6 testes. Since then, 41 nominal species of *Polypocephalus* have been described, of which only 15 are currently considered valid. *Polypocephalus* has been recognized as paraphyletic since 2014, and molecular data suggest the genus is comprised of as many as 10 distinct clades. While *P. radiatus* was redescribed based on type material in 2001, there have been no reports of newly collected specimens from the type host. To anchor one of the clades in our molecular framework as *Polypocephalus sensu stricto*, we examined whole mounts and molecular vouchers from 3 species of *Glaucostegus* from the Indo-Pacific region using light microscopy. Represented in this material is a molecular voucher morphologically consistent with *P. radiatus* from *G. thouin*, as well as specimens resembling *P. radiatus* from both *G. typus* and *G*. cf. *typus*. Based on these data we tentatively identified a clade likely to represent *Polypocephalus sensu stricto* comprised entirely of worms from the rhinopristiform families Glaucostegidae (giant guitarfishes) and Rhinidae (wedgefishes) with craspedote proglottids, some of which exhibit 6 testes. We also revisit the taxonomic status of the 26 nominal species. Future work will focus on the exploration patterns of character evolution and host associations in the group.

P3. **Mikuláš Oros[1]**, Roman Kuchta[2], Olena Kudlai[3] and Tomáš Scholz[2]
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Host specificity of monozoic tapeworms (Caryophyllidea) in North America

Adequate knowledge of parasite host range, i.e., host specificity, is crucial for understanding ecological, epidemiological, and evolutionary processes. Based on published data, particularly those compiled by Hoffman (1999), relatively broad host specificity has been assumed for many freshwater fish tapeworms in North America. However, most of the approximately 73 species of Caryophyllidea exhibit narrow host specificity: 29 species are strict specialists (e.g., *Biacetabulum, Isoglaridacris* and *Penarchigetes*), 18 congeneric specialists, 18 suprageneric specialists, seven low generalists, and one high generalist (*Archigetes sieboldi* in Cypriniformes and Atheriniformes). The two categories with the narrowest host specificity (species infecting a single host species or genus) account for nearly two-thirds (64%) of all caryophyllideans in North American freshwater fishes. In contrast, some species of *Promonobothrium* and *Pseudoglaridacris* infect a broader range of definitive hosts and occur in fishes of different genera or tribes, although rarely in different subfamilies (Catostominae vs. Ictiobinae). Recent molecular data from newly collected *Promonobothrium* specimens revealed contrasting host-range patterns among congeners, ranging from strict specialists (e.g., *P. minytremi*, *P. fossae*, *P. mackiewiczi*, *P. papiliovarium*, and *Promonobothrium* sp. from *Ictiobus niger*) to family-level generalists (*P. hunteri*, *P. ingens*, and *P. rogersi*). However, many catostomid hosts remain insufficiently examined, some species have only recently been described, and several have restricted or endemic distributions. Consequently, current knowledge of caryophyllidean host associations in Catostomidae is likely incomplete and biased towards a few well-studied hosts, such as *Catostomus commersonii* and *Ictiobus bubalus*.

P4. Jan Brabec[1], Alain de Chambrier[2], Isabel Blasco-Costa[2], Olena Kudlai[3], Tomáš Scholz[1]

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From broad strokes to finer details: Understanding the systematics of the *Proteocephalus* species-aggregate

Tapeworms of the *Proteocephalus* species-aggregate (Cestoda: Proteocephalidae) are common intestinal parasites of freshwater fishes across the Palaearctic and Nearctic regions, yet their taxonomy has long been confounded by morphological uniformity and presumably broad host associations. Early morphology-based revisions drastically reduced species diversity, with *P. longicollis* (Zeder, 1800) treated as a single, highly polymorphic species infecting a wide spectrum of salmoniform hosts across the Holarctic. Molecular phylogenetic approaches have since fundamentally revised this picture, revealing that the *Proteocephalus* species-aggregate forms a monophyletic group of species with considerably narrower host specificities than previously assumed, and that evolutionary relationships among species are largely incongruent with those of their fish hosts. With a growing dataset of molecularly characterised representatives of the group, we underscore that integrative morphological and molecular approaches are essential for accurate species delimitation in this taxonomically challenging group, with substantial undescribed diversity likely remaining across the full Holarctic range of freshwater fish hosts.

P5. Jihene Jouini[1*], **Chiraz Ben Saad[1]**, Stefan Theisen[2], Harry W. Palm[2] and Lamia Gargouri[1]

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Adult Cestodes in Selected Tunisian Marine Teleosts: Taxonomy and Host Associations

Adult cestodes are integral components of marine biodiversity, providing crucial insights into definitive hosts associations and trophic transmission. Along the Tunisian coast, little is known about the

diversity and host specificity of adult cestodes in teleosts, limiting understanding of their systematics in Mediterranean ecosystems. A total of 759 fish, representing nine fish species from four families (Merlucciidae, Scorpaenidae, Trachinidae and Triglidae), were collected from the Gulf of Tunis (north-eastern Tunisia) between April 2019 and May 2020. Adult cestodes were recovered from the intestine, fixed and divided into two batches prepared for morphological examination: one stained with acetic carmine, and the other processed for scanning electron microscopy. Specimens were illustrated and examined to document diagnostic characters. Epidemiological indices (prevalence, mean intensity, and mean abundance), were calculated and compared with reports from other localities. Two adult cestode species were identified: *Bothriocephalus scorpii* (Müller, 1776) Cooper, 1917 and *Clestobothrium crassiceps* (Rudolphi, 1819) Lühe, 1899. Morphological observations, including scolex structure, bothrial configuration, proglottid morphology, and surface microtriches observed by SEM, confirmed species identification. While *B. scorpii* was the dominant species, infecting eight fish species, with the highest prevalence in Scorpaenidae (P = 70.8%), *C. crassiceps* occurred exclusively in *Merluccius merluccius*, indicating strict host specificity. Infection tended to increase with host size, suggesting trophic accumulation. This study provides detailed morphological documentation of adult cestodes from Tunisian marine teleosts. By combining light microscopy and SEM observations with host data, it improves regional taxonomic knowledge and contributes to understanding cestode transmission pathways in Mediterranean food-webs.

P6. Sydney E. Horan[1], Janine N. Caira[1]
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Expanded records of North American avian cyclophyllideans

Records of North American avian cyclophyllidean tapeworms are sparsely reported in the literature. A project aimed at stabilizing and digitizing the parasite specimens in 9 historical collections housed, but not yet accessioned in, the Biodiversity Research Collections at the University of Connecticut prompted investigation of the cestodes of North American birds collected by Larry Penner and his students and colleagues from 1939–1983. Beyond slides and vialed specimens, his collection includes individual cards providing data on each host specimen necropsied. Of the more than 10,000 necropsy cards, 2,481 were of birds. Examination of these cards and ~150 boxes of microscope slides indicates that the collection includes cestodes from a total of as many as 99 species of birds. Families reported on necropsy cards or found on slides include the Hymenolepididae, Dilepididae, Davaineidae, and Paruterinidae. These taxa were primarily collected from Connecticut and Florida and appear to provide new North American localities of a diversity of cyclophyllidean taxa. Likely because of connections with hunters, the American Black Duck, White-winged Scoter, and Red-breasted Merganser are among the most numerous hosts of cestodes from Connecticut. Less common, but perhaps more interesting are cestodes from the Glossy Ibis, White Ibis, Black-necked Stilt, and Wood Stork. This represents an expansion of new records in an understudied order from a wide-ranging North American historic parasite collection. The ultimate goal of the larger project is to digitize the collections and make their existence and associated data publicly available in the Lawrence R. Penner Parasitology Collection portal (lrpennerdb.uconn.edu).