

## Monogenean Parasites of some Elasmobranchs (Chondrichthyes) from the Yucatán Peninsula, Mexico

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**ABSTRACT:** Forty-two individuals representing 8 species of stingray were collected from 14 localities along the coast of the Yucatán Peninsula in Mexico. Monogeneans from 2 families (Monocotyliidae Lebedev, 1988 and Capsalidae Baird, 1853) were found on the gills and body surfaces. *Dendromonocotyle octodiscus* Hargis, 1955 was collected from *Dasyatis americana* Hildebrand and Schroeder, 1928 from Blanquizal, Quintana Roo, Mexico, and *Urobatis jamaicensis* (Cuvier 1816) McEachran and Fechhelm 1998 from Xcalak, Isla Contoy, Mexico, Cozumel, Quintana Roo, Mexico, and Ría Lagartos, Yucatán, Mexico. *Decacotyle floridana* (Pratt, 1910) Chisholm and Whittington, 1998 was collected from *Aetobatus narinari* (Euphrasen 1790) from Holbox, Quintana Roo, Mexico, and Ciudad del Carmen and Champotón, Campeche, Mexico. *Benedeniella posterocolpa* (Hargis, 1955) Yamaguti, 1963 was collected from *Rhinoptera bonasus* (Mitchell, 1815) from Champotón, Campeche, Mexico. Quintana Roo and Yucatán, Mexico, are new distribution records for *D. octodiscus*, and *U. jamaicensis* is a new host record for this species from a host collected from nature. Quintana Roo is a new locality record for *D. floridana*, and Campeche, Mexico, is a new locality record for *B. posterocolpa*. Hypotheses of biogeographical and coevolutionary patterns concerning monogeneans of elasmobranchs are premature, but *B. posterocolpa* seems to be strictly host specific, whereas *D. floridana* and *D. octodiscus* display a much lower level of host fidelity at lower host taxonomic levels.

**KEY WORDS:** Monogenea, Monocotyliidae, Decacotyliinae, *Decacotyle floridana*, *Dendromonocotyle octodiscus*, *Benedeniella posterocolpa*, Yucatán Peninsula, Mexico.

Despite ongoing research concerning the internal parasites of elasmobranchs (Brooks, Mayes, et al., 1981; Brooks, Thorson, et al., 1981; Marques et al., 1995, 1997, 2001; Monks et al., 1996; Brooks, Marques, et al., 1999; Caira and Jensen, 2001, and works cited therein), the only recent long-term study of their ectoparasites is that of Chisholm et al. (1995) on the monogeneans of elasmobranchs. Focusing primarily on stingrays from the Australian reef system, the project has provided new insights into the host–parasite relationships of elasmobranchs and their monogeneans (Chisholm, Morgan, et al., 2001; Chisholm, Whittington, et al., 2001; Whittington and Chisholm, 2004; Whittington et al., 2004). No previous study has addressed the biodiversity of monogeneans of elasmobranchs of Mexico. We have initiated a comprehensive survey of the biodiversity of parasites of elasmobranchs from Mexican waters, initially focusing on the parasites of elasmobranchs from Bahía de Chetumal, an important fisheries resource for the state of Quintana Roo, Mexico, and then expanding along the remaining coast of the Yucatán Peninsula, and herein we report on the biodiversity of selected monogenean parasites of elasmobranchs from the Yucatán Peninsula, Mexico.

### MATERIALS AND METHODS

Forty-five specimens representing 11 elasmobranch species were purchased from local fisherman or collected using a harpoon from 14 localities (Fig. 1) in Mexico—Campeche: Ciudad del Carmen (18°37'58"N; 91°49'57"W), Champotón (19°21'N; 90°54'W), Yucatán: Celestún (20°52'N; 90°24'W), Ría Lagartos (21°36'N; 88°14'W), Quintana Roo: Holbox, northwest of the island (21°34'N; 86°14'W), Isla Contoy (20°48'N; 86°47'W), Cozumel, El Paso de los Cedros (20°31'N; 86°57'W), Blanquizal (18°16'N; 87°54'W), Xcalak (18°16'16"N; 87°50'07"W), Bacalar Chico, ocean side of channel (18°11'21"N; 87°50'27.6"W), Río Cacayuc (18°44'26"N; 88°09'28"W), Bahía de Chetumal, Punta Calenturas (18°27'36"N; 88°01'25"W), Bahía de Chetumal 4 km off CET-Mar (18°30'00"N; 88°14'24"W), and Bahía de Chetumal, La Aguada (18°17'10"N; 87°53'22"W). Animals were examined for parasites immediately or were maintained individually in plastic bags containing a small amount of water from the collection locality and cooled on ice until examination. The gill arches were removed to saline and held on ice until examined using a stereomicroscope. Monogeneans were removed from the body surface and gill lamellae and transferred to saline solution. Individual worms were flattened under the weight of coverslip pressure, fixed in AFA (alcohol-formalin-acetic acid), and transferred to 70% ethyl alcohol. Specimens were stained using Gomori's trichrome, Mayer's carmalum, or Ehrlich's hematoxylin and mounted in Canada balsam for examination as whole mounts.

Identifications of survey material were made with the aid of published descriptions and comparison with type and voucher material. The following type and voucher material

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