



Research note

Helminths of *Ocyurus chrysurus* from coastal reefs in Veracruz, Mexico

Helminths of *Ocyurus chrysurus* de los arrecifes de Veracruz, México

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Abstract. This study is a survey of helminths of the yellowtail snapper, *Ocyurus chrysurus*, collected in the islands de Enmedio and Anegada de Afuera reefs, Veracruz, Mexico. Nineteen species were found in fish collected in Anegada de Afuera reef: 9 digeneans (7 adults, and 2 metacercariae); 5 nematodes (2 adults and 3 larvae); 3 monogeneans; 1 acanthocephalan (adult) and 1 cestode (larva); while in the Isla de Enmedio reef 15 of these species were recorded. 7 species are new records for this host, increasing from 17 to 24 species known in the Gulf of Mexico and the Caribbean.

Key words: marine fish, parasites.

Resumen. En este estudio se presentan los resultados del análisis helmintológico de la rubia, *Ocyurus chrysurus*, capturados en los arrecifes de las islas de Enmedio y Anegada de Afuera, Veracruz, México. En el arrecife Anegada de Afuera se registraron 19 especies de helmintos: 9 digéneos (7 adultos y 2 metacercarias), 5 nematodos (2 adultos y 3 larvas), 3 monogéneos, un acantocéfalo (adulto) y un céstodo (larva), en tanto, en el arrecife de la Isla de Enmedio se registraron 15 de estas especies. 7 especies son nuevos registros para este hospedero, aumentando de 17 a 24 especies conocidas para la región del golfo de México y el Caribe.

Palabras clave: peces marinos, parásitos.

The biological richness in coastal reefs around the world is remarkable. In a recent series of papers Justine (2010) outlines the richness of helminth parasites found in fish from the Great Australian Barrier Reef, and the continuity of the system enables an homogeneous distribution of hosts and parasites. In America, coral reefs in the Gulf of Mexico also form a barrier running from the Southern Caribbean Sea in Quintana Roo, to the Veracruz coasts (Jordán-Dahlgren and Rodríguez-Martínez, 2003), extending the distribution of species such as the lutjanid fish *Ocyurus chrysurus* (Bloch, 1791). This fish is common in this region, and has a total length ranging from 210 to 600 mm (Gutiérrez-Benítez, 2012). Given the increasing interest in producing fingerlings of this species under controlled conditions, wild specimens were examined to survey their parasitic community, in order to improve management practices. Helminth parasites of *O. chrysurus* have been reported in the Atlantic coast of the US (Linton,

1910; Chandler, 1935; Manter, 1947; Overstreet, 1969); the Atlantic coast of Central America, Panamá and Bimi Islands (Sogandares-Bernal, 1959; Sogandares-Bernal and McAlister-Sogandares, 1961); Jamaica (Nahhas and Carlson, 1944); Belize (Fischthal, 1977), and Cuba (Zhukov, 1976). However, there are no reports for this species in Mexico.

From July 2011 to March 2012, 54 specimens of *O. chrysurus* were examined for helminth parasites. Out of these, 27 fish were captured in the Isla de Enmedio reef (19°16'00" N, 95°56'19" W), and 27 in the Anegada de Afuera reef (19°10'14" N, 95°52'14" W), 10 km away from each other. Fish were caught by hook-and-line and transported alive to the laboratory for immediate helminthological examination. All tissues and organs were reviewed under a stereoscopic microscope. The external examination included skin, scales, fins, gills, eyes, nostrils, mouth and anus. Gills were removed and analyzed separately in Petri dishes filled with seawater, to facilitate the ectoparasites handling. Then, all specimens

Table 1. Prevalence, mean intensity, and site of infection of helminth parasites of the yellowtail snapper, *Ocyurus chrysurus*, from coastal reefs of Veracruz, Mexico. n, number of hosts infected. Abbreviations for life stages are: *mt*, metacercarie; *p*, plerocercoid; *l*, larva; abbreviations for sites are: f, fins; g, gill; gb, gall bladder; i, intestine; ms, mesenteries; s, stomach

| Species | Reef Isla de Enmedio | | | | | Reef Anegada de Afuera | | |
|--|----------------------|-------|---------------------|-------------------------|-------|------------------------|-------------------------|-------|
| | CNHE | Site | n (% prevalence) | Mean intensity (±SD) | Range | n (% prevalence) | Mean intensity (±SD) | Range |
| Trematoda | | | | | | | | |
| <i>Aponurus laguncula</i> Looss, 1907 | 9130, 9131 | i, s | 1 (3.7) | 1 ± - | 1 | 12 (44.4) | 1 ± 0 | 1-1 |
| <i>Megasolena</i> sp.*† | 9132 | i | | | | 1 (3.7) | 4 ± - | 4 |
| <i>Preptetos trulla</i> Linton, 1907† | 9133, 9134 | i | 17 (62.9) | 16.8 ± 19.5 | 1-61 | 11 (40.7) | 84.5 ± 191.3 | 1-638 |
| <i>Deretrema fusillus</i> Linton, 1910 †‡ | 9135 | i, gb | | | | 8 (29.6) | 1.6 ± 1.1 | 1-4 |
| <i>Siphodera</i> <i>vinaledwardsii</i> (Linton, 1901) | 9136, 9137 | i | 1 (3.7) | 1 ± - | 1 | 2 (7.4) | 4 ± 4.2 | 1-7 |
| <i>Stephanostomum casum</i> (Linton, 1910) | 9138, 9139 | i | 9 (33.3) | 2.8 ± 2.2 | 1-7 | 2 (7.4) | 1 ± 0 | 1-1 |
| <i>Lecithochirium</i> <i>floridense</i> (Manter, 1934) | 9140, 9141 | i, s | 4 (18.5) | 1 ± 0 | 1-1 | 8 (29.6) | 1.3 ± 0.5 | 1-2 |
| Didymozoidae ^{mt} | 9142, 9143 | i | 1 (3.7) | 1 ± - | 1 | 1 (3.7) | 3 ± - | 3 |
| Trematoda ^{mt} | | f | 22 (81.5) | 4.1 ± 1.8 | 1-10 | 14 (51.9) | 2.6 ± 1.2 | 1-6 |
| Monogenea | | | | | | | | |
| <i>Euryhaliotrema</i> <i>torquecirrus</i> (Zhukov, 1976) † | 9144, 9145 | g | 17 (63) | 6.6 ± 6.1 | 1-24 | 20 (74) | 3.8 ± 2.7 | 1-11 |
| <i>Haliotrematoides</i> <i>heteracantha</i> (Zhukov, 1976) † | 9146, 9147 | g | 8 (29.6) | 3.3 ± 4.1 | 1-12 | 3 (11.1) | 3.7 ± 0.6 | 3-4 |
| <i>Microcotyloides incisa</i> (Linton, 1910) * | 9148, 9149 | g | 7 (25.9) | 6.6 ± 6.1 | 1-16 | 22 (81.5) | 3.2 ± 2.6 | 1-11 |
| Cestoda | | | | | | | | |
| Tetraphyllidea ^p | 9150, 9151 | i | 7 (25.9) | 6 ± 6.9 | 1-17 | 9 (33.3) | 3.8 ± 3.2 | 1-8 |
| Nematoda | | | | | | | | |
| <i>Dichelyne bonacii</i> González-Solis, Argáez- García and Guillén- Hernández, 2002* | 9152, 9153 | i | 3 (11.1) | 1 ± 0 | 1-1 | 7 (25.9) | 2.1 ± 0.8 | 1-6 |
| <i>Hysterothylacium</i> <i>reliquens</i> (Norris and Overstreet, 1975) * | 9154, 9155 | i, ms | 1 (3.7) | 2 ± - | 2 | 4 (14.8) | 1 ± 0 | 1-1 |
| <i>Contracaecum</i> sp. ^l * | 9156, 9157 | i, ms | 3 (11.1) | 1 ± 0 | 1-1 | 9 (33.3) | 1.3 ± 0.5 | 1-2 |
| <i>Hysterothylacium</i> sp. ^l | 9158, 9159 | i | 2 (7.4) | 2 ± 0 | 2-2 | 6 (22.2) | 1.3 ± 0.9 | 1-3 |
| <i>Spirocerca</i> sp.* | 9160 | i | | | | 1 (3.7) | 1 ± - | 1 |
| Acantocephala | | | | | | | | |
| <i>Rhadinorhynchus</i> <i>dujardini</i> Golvan, 1969*†‡ | 9161 | i | | | | 1 (3.7) | 1 ± - | 1 |
| Total helminth species | | | 15 | | | 19 | | |

* New host records.

† New record for Mexico.

‡ New record for the Gulf of Mexico.

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