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Note

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Trematode infestation in coral colonies at Poshitra Reef, Gulf of Kachchh Marine National Park, Gujarat, India

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The Gulf of Kachchh (GoK) is one of the three gulfs in India, which occupies an area of 7,300km^2 with 42 Islands and is enriched with various marine habitats such as coral reefs and mangroves (Nair 2002; Adhavan et al. 2014). Poshitra reef, a part of the GoK Marine National Park is located at 22.413056 N & 69.191111 E. During our regular survey for Integrated Coastal Zone Management Project to assess the intertidal diversity, between 27 and 29 March 2015, a soapy oily slick was observed on the water surface at Poshitra Reef, which indicated mass secretion of mucus from the corals (Image 1a–c). Mucus secreted by the corals creates a layer around them like a slipcover to trap the dirt (sediment) and once the coral sloughs it off, it makes a new one (Wild 2004). The mucus produced by corals has a thin-layer that supports an active community of microorganisms, which may in turn affect the health of corals through interactions with other beneficial or pathogenic bacteria (Aeby 1998). Copious mucus release by coral reefs, however, is the first obvious sign of a generalized response to environmental stress including sedimentation, freshwater influence, sewage disposal, aerial exposure, cyanide exposure and bleaching (Peters 1984). In addition to that, some colonies of *Porites* sp. at Poshitra Reef were spotted with pink swollen nodules (Image 1d–f). These nodules are termed as a condition called "*Porites* trematodiasis" which is due to an infection of digenetic trematodes (Aeby 2003; Abey 2007; Palmer et al. 2009). These trematodes are common parasites of most animal taxa occurring in the intertidal communities as they are often unnoticed by most researchers and are an integral part of intertidal ecosystems (Sousa 1991; Leung et al. 2009). It has a complex life cycle involving a molluscan first intermediate host, massive coral *Porites* as the second intermediate host, and coral-feeding fish as the final host (Aeby 1998). According to Palmer et al. (2009), the pink pigmentation in the swollen nodules of infected coral is due to the presence of a red fluorescent protein in compromised tissue of Scleractinian coral that plays a role in cytotoxic defense, and provides new insights into the biological mechanisms involved in immune resistance. Furthermore, the sea surface temperature (SST) data (NOAA) of the National Environmental Satellite Data and Information Service (NESDIS) showed that temperature fluctuates from 30–34 ^{0}C which is above normal in the Gulf of Kachchh region during the past six months (NOAA; 2014). The temperature fluctuation and anthropogenic pressures are perhaps the reasons for coral stress (Adhavan et al. 2014) and this may be the opportunity for the parasite to infect the stressed coral colonies at Poshitra Reef. This situation indicates that if

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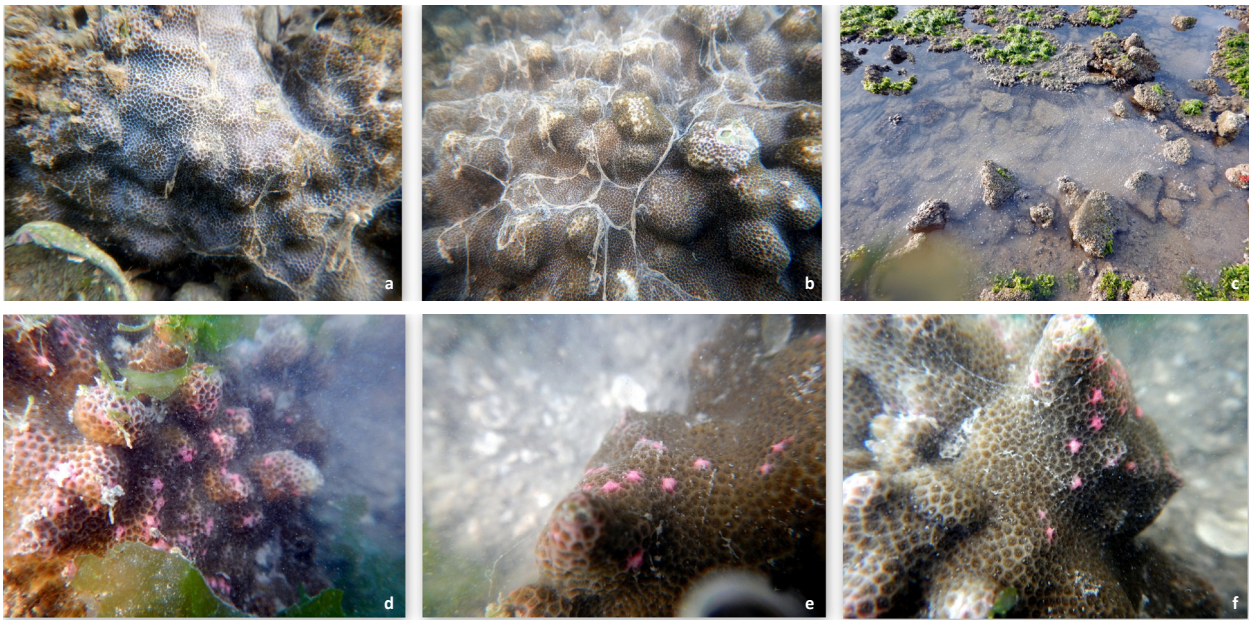

Image 1. a–b - on *Porites* colony covered by mucus secretion; c - mass mucus secretion in the intertidal region of Poshitra Reef ecosystem; d–f - Pink swollen nodules. © D. Adhavan & S. Tikadar

the corals fail to develop disease resistance and thermal tolerance, the reefs along the Indian subcontinent may experience a phase shift in community structure, which could impact fisheries.

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