Report on the infection of *Pallisentis* sp. from wild Croacking Gourami, *Trichopsis* sp.

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**Abstract.** The croaking gourami, *Trichopsis* sp. is a species of dwarf freshwater tangle fish of the gourami family and commonly found in South East Asia. They are native and distributed worldwide via the aquarium trade. This species is intrinsic and very popular for the ornamental fish industry especially in Malaysia, Thailand, Singapore and Indonesia. The purpose of this study is to identify the general morphology of Acanthocephala parasites, *Pallisentis* sp. in wild *Trichopsis* sp. Five wild fish sample (*N*=5) with weight (0.79±0.18g) and length (4.18±0.69cm) were collected and dissected for endoparasites examination. There were five Acanthocephala found from this observation. Morphological characteristic showed that the species of this parasite is *Pallisentis* sp. and found in intestine. The infected fish did not show any signs such as abnormal behaviour or emaciation. This data is useful for disease prevention especially in the ornamental fish industry.

1. Introduction
Croaking gourami, *Trichopsis* sp. is found as native freshwater fish origin from Java, Borneo, Sumatra, Peninsular Malaysia, Thailand, and the Mekong basin in Cambodia, Laos and Vietnam [1]. Coloration is highly variable, average size about five centimetres interesting and valuable as ornamental fish trade. In Malaysia, croaking gourami easily found in fish ponds and sluggish areas. The fish behavior is commonly inhabiting in standing and slowly moving [2]. Study of gourami endoparasites are poorly known. Wild fish is an important indicator to confirm that the surrounding environment are benign for future ecosystem sustainability [3].

The Acanthocephalans also known as thorny-headed worms or spiny-headed worms and characterized by the presence of proboscis, armed with spines, which they use to attach and hold the gut wall of their definitive host. Acanthocephalan is commonly seen in the intestine of wild marine or fresh water fishes. However, Rajeshkumar et al., (2013) reported the acanthocephalan parasites also infected the liver and muscle of fish [4]. Commonly, the proboscis is the primary organ of attach to the intestinal wall of the definitive host. Proboscis also the important structure for identification of acanthocephalan species. In the present study, we described morphology of the acanthocephalan species by using light microscope.
2. Methodology
The fish (n=5) were caught from stream and brought to the laboratory for examining parasites. The fish were pithing and dissected. The internal organs were removed and put in petri dish. The stomach and intestine were cut and open for parasites examinations. Most of specimen were collected using fine forceps or Pasteur pipette. Samples were kept in the fridge overnight to make sure the eversion of proboscis [5]. Then, parasites were put into bijou bottle and preserved in the 70% ethanol. The acanthocephalans were staining with modified carmine, dehydrated with different series concentrations of ethanol, cleared in clove oil, and mounting permanently in Canada balsam [6,7]. Acanthocephalan was identified based on the morphological characteristic and viewed under Advanced Research Microscope, Nikon Eclipse 80i for micrographic image.

3. Result and discussion
Five sample of acanthocephalan were analysed for identification. Every hook is measured with first hook is ±76.93mm, second hook is ±67.20mm, third hook is ±45.52mm and last basal circle of hook for every sample collected with 12 – 14 hooks for every circle. The shape of hooks that are similar but different size every circle [2]. The first (top) hooks is larger than of the basal circle. The detail of the sample measurement can be referred to Table 1. This species is closely related to Pallisentis sp. (Figure 1). The morphology of this species are referring to previous report by some researchers [2,5,7,8]. The general morphology of parasites is previously described in longer proportion body shape [5], curve [7], tubular shape, elongated, cylindrical, spinose and vermiform [5].
Figure 1. Morphology of *Palisentis* sp.: (a) Entire view of worm parasite; (b) whole feature of wormhead; (c) the structure of hook; (d) trunk spine; (e) proboscis receptacle.
Table 1. Measurement of *Pallisentis* sp. from intestine of fish

| Morphology             | P. nagpurensis (Sriwongpuk, 2017) | P. celatus (Amin, 2004) | P. munifi (Naqvi, 2015) | This study |
|------------------------|-----------------------------------|-------------------------|-------------------------|------------|
| Hooks                  | NA                                | NA                      | 6                       | 12-14      |
| Hook rows (Transverse circle) | NA                                | 4                       | 4                       | 4          |
| Body (L x W)           | 4.1 x 0.3mm                       | 6.38-13.90 x 0.76-1.56mm | 6.45-7.09 x 0.38-0.42mm | 3.79-7.35 x 0.12-0.42mm |
| Proboscis (L x W)      | 0.17 x 0.2mm                      | 218-313 x 218mm         | 0.15 x 0.15-0.16mm      | 0.04-0.15 x 0.14-0.19mm |
| Proboscis receptacle (L x W) | NA                                | 408-503 x 190-204mm     | NA                      | 0.46-1.73 x 0.09-0.54mm |
| Collar (L x W)         | NA                                | NA                      | 0.10-0.19 x 0.10 x 0.15mm | 0.26-0.25 x 0.11-0.19mm |
| Collar spines          | 14-16                             | 12-14                   | 14-15                   | NA         |
| Testis                 | 0.3 x 0.1mm                       | 710-1,900 x 480-610mm   | 0.78 - 0.89 x 0.84 -0.86 | NA         |
| Seminal vesicle        | 0.3 x 0.06mm                      | NA                      | NA                      | NA         |
| Cement gland           | 0.3 x 0.1mm                       | NA                      | 0.60 x 0.19-0.21mm      | NA         |
| Cement reservoir       | 0.2 x 0.1mm                       | NA                      | 0.62-0.82 x 0.21-0.22mm | NA         |
4. Conclusion

Based on the general morphological characteristics, we conclude that this parasite is belong to genus *Pallisentis*. Moreover, the existing of the parasites did not shows any clinical signs of disease, and this parasite may less pathogenic to the fish. For the species conformation, we suggested to identify by using DNA sequences.

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