

Peanut Worms (*Sipunculus robustus*) in Mactan Island, the Philippines: Collection Technique and Skills Required

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Introduction

Mactan Island, located in the Visayan region of the Philippines, has vast tidal flats, which support various fishing activities that take advantage of its ecological environment [e.g. Rau 1979] (Photo 1). One of these activities is the collection of peanut worms (*Sipunculus robustus*) (Photo 2), a practice more widely performed by women than men. Special skills are required for collecting peanut worms. This study examines the skills required to collect these worms. Although several studies have examined the process of peanut worm collection, studies on the skills involved in this process are limited. This study explores the peanut worm collection process and suggests that the required skills reflect human behavior and perceptions.



Photo 1: Vast tidal flats at Mactan Island (Photo taken by the author in Mactan Island on July 20, 2005)



Photo 2: Peanut worms (Photo taken by the author in Mactan Island on September 16, 2005)

Research site and method

This study primarily used data from research conducted from June 29 to September 17, 2005. It was conducted on Mactan Island, located in the south-central area of Cebu Island (Figure 1). The number of households in the research area was 6,520, of which 34% were involved in fishing activities [Municipality of Cordova 2004]. In this area, the men typically engage in moray eel fishing and deep diving for shellfish in shallow seas [Tsuji 2013, 2020]. Additionally, it is common for women to collect different types of marine organisms. The research method was based on ecological and anthropological participatory observations and surveys, which mainly recorded the behavior of the worms and investigated the worm collection method.

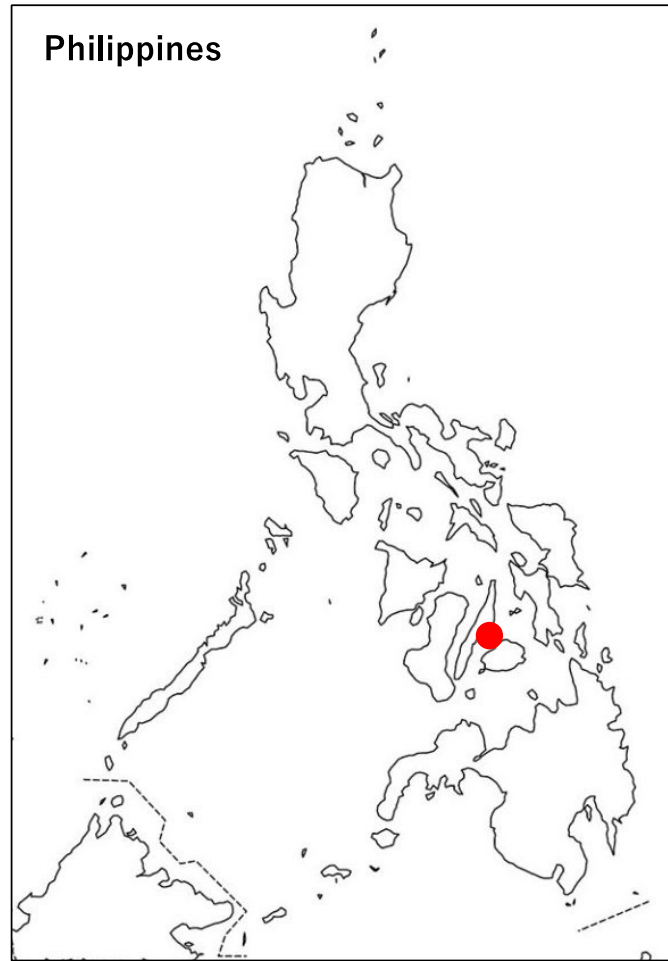


Figure 1: Location of Mactan Island (Created by the author)

Peanut worms

Peanut worms are sipunculid worms that are 2 cm in diameter and 20 cm long. The phylum Annelida includes sipunculid worms, and approximately 320 species across 17 genera have been identified worldwide [Janssen 1990]. This type of worm is employed as fishing bait in the Seto Inland Sea and Kyushu region of Japan [Utinomi 1956; Saito et al. 2014]. The worms, commonly known as *salpo*, are harvested from the Visayas and Mindanao regions of the Philippines. These worms are prepared in a marinade of vinegar called *kinilaw* (Photo 3) and served as a local specialty food in certain regions. They are also suitable as fishing bait to catch *katambak* (fish, *Lethrinus*) (Photo 4).



Photo 3: Pieces of peanut worms sold at the public market (Photo taken by the author in Mactan Island on June 29, 2005)



Photo 4: A type of peanut worm (*S. nudus*) mainly used as fishing bait (Photo taken by the author

in Negros Island on May 23, 2000)

Results and Discussions

Five professional worm collectors worked at each research site (Photo 5). This research mainly focused on the activity of Ma (who passed away in 2015) who had 54 years of experience in worm collection. Ma was 69 years old at the time of the survey in 2005. Harvesting worms had been her livelihood since the age of around 15 years when she learned to collect the worms from her mother.



Photo 5: Women who aim for peanut worms (Photo taken by the author in Mactan Island on July 18, 2005)

Ma used a bucket containing the necessary tools for collecting worms. The bucket contained empty containers for catching worms; hatchets for collecting them; and spatulas, knives, and bamboo sticks for removing their internal organs. Collections usually occurred from approximately 5:00 to 9:00 or 14:00 to 18:00. Ma frequently went fishing when the tide was low, spending an average of three and a half hours

collecting the worms.

Worm tunnels can be found in sandy areas with seaweed (*lusay*). The roots of the *lusay* are pulled out by the worms during piercing or foraging to mark the burrows. The gleaners can instantly recognize this clue (Figure 2). They were instructed to insert hatchets or spatulas diagonally from the side of the burrow at approximately 20–30 cm after confirming that they had found a worm burrow. The blade of the spatula must be simultaneously placed under the worms to prevent them from escaping. Blocking their escape route is necessary to prevent the worms from moving deeper into the sand. It is believed that the worms are present in a vertical position in the sand (Figure 3). They were pushed up into the upper layers of the sand by the harvester using a hatchet or spatula, and then the harvesters pushed their free hand into the sand to hold on to the worms (Figure 4). It was evident that these tasks required a certain level of expertise.

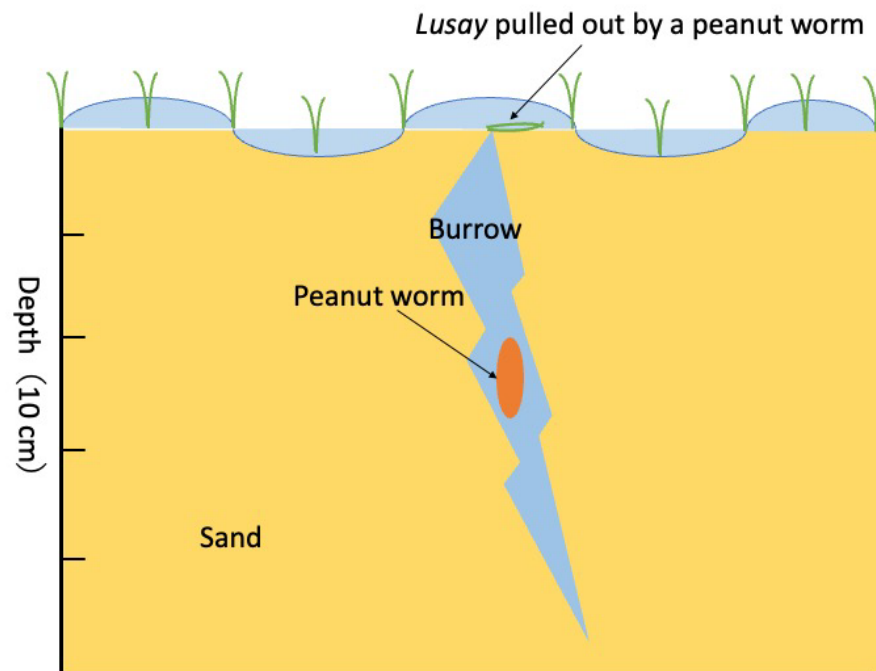


Figure 2: Schematic diagram how to collect peanut worms (1) (Created by the author)

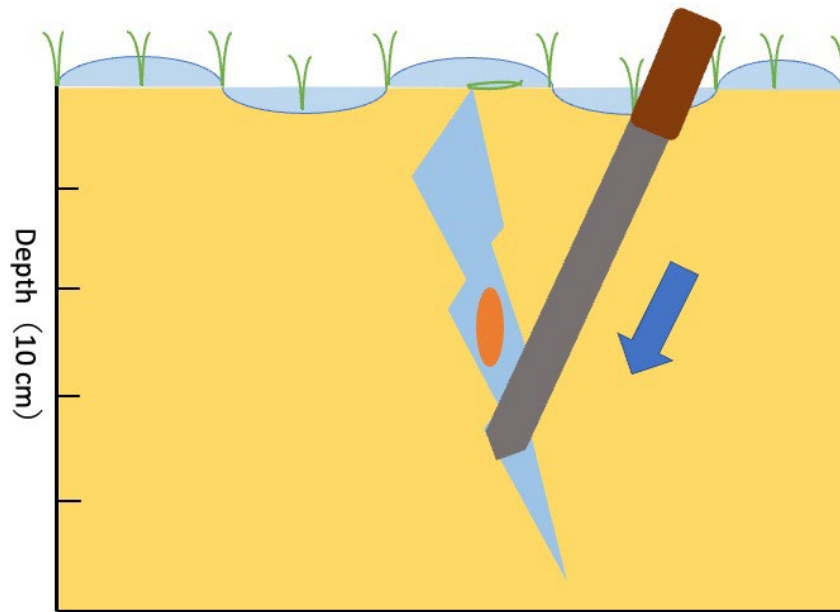


Figure 3: Schematic diagram how to collect peanut worms (2) (Created by the author)

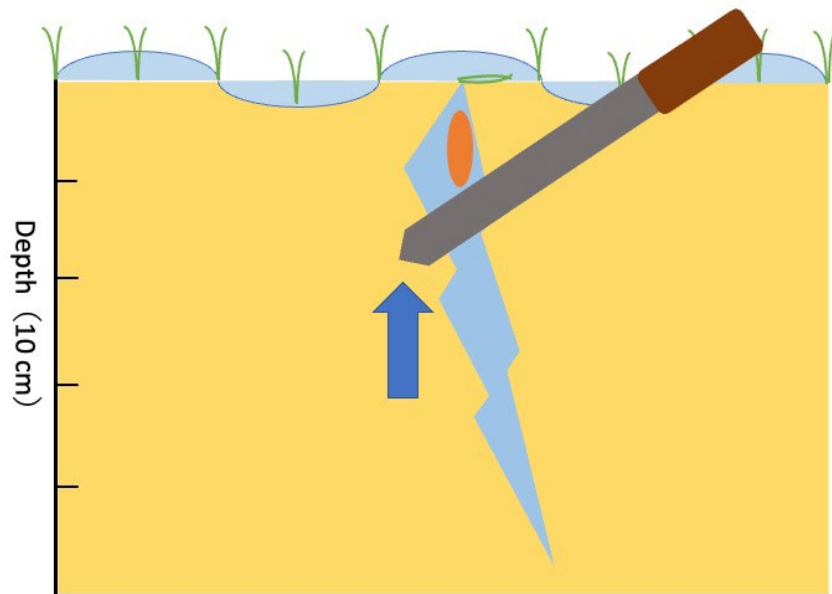


Figure 4: Schematic diagram how to collect peanut worms (3) (Created by the author)

The findings revealed that Ma typically collected 32 worms in a single session with an average of 9 worms (Photo 6). Occasionally, due to strong winds, Ma would be unable to find the burrows; therefore, she mainly collected wedge sea hares (*Dolabella auricularia*) during such times.



Photo 6: A woman who caught a peanut worm (Photo taken by the author in Mactan Island on July 18, 2005)

Conclusion

This study identified the differences between collecting peanut worms and gathering general shellfish in terms of the skill required. Collectors can instantly identify the burrows and locations of peanut worms that are not visible in the sand. These special skills have been given abstract descriptions, such as “long-term experience” or “tacit dimension,” [Polanyi 1966] which are difficult to explain verbally. This study investigated the skills schematically according to the actions and perceptions of the local people, revealing that these skills are strongly related to the worm collection process.

According to Merleau-Ponty [1953], our spirit seeks to find something hidden by assigning “visibility” to the “invisible” aspects. The collection of invisible peanut worms in deeper sand can be linked to this idea through action and perception. It has been suggested that worm gatherers use mental maps to grasp the worms. Merleau-Ponty [1945] also revealed that any habit is simultaneously both an action and a perception. To collect peanut worms, one merely needs to follow the actions and perceptions of gleaners who regularly engage in tasks in an environment that appears complicated to others.

The gleaners of peanut worms have developed complex cognitive skills based on their actions and perceptive systems about nature. To comprehend the habits of peanut worms, gleaners need to be observant, akin to solving a complicated puzzle and gradually determining each shape of the puzzle. The skills must be based on human actions and perceptions, and further research on this ability is necessary.

Acknowledgments

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