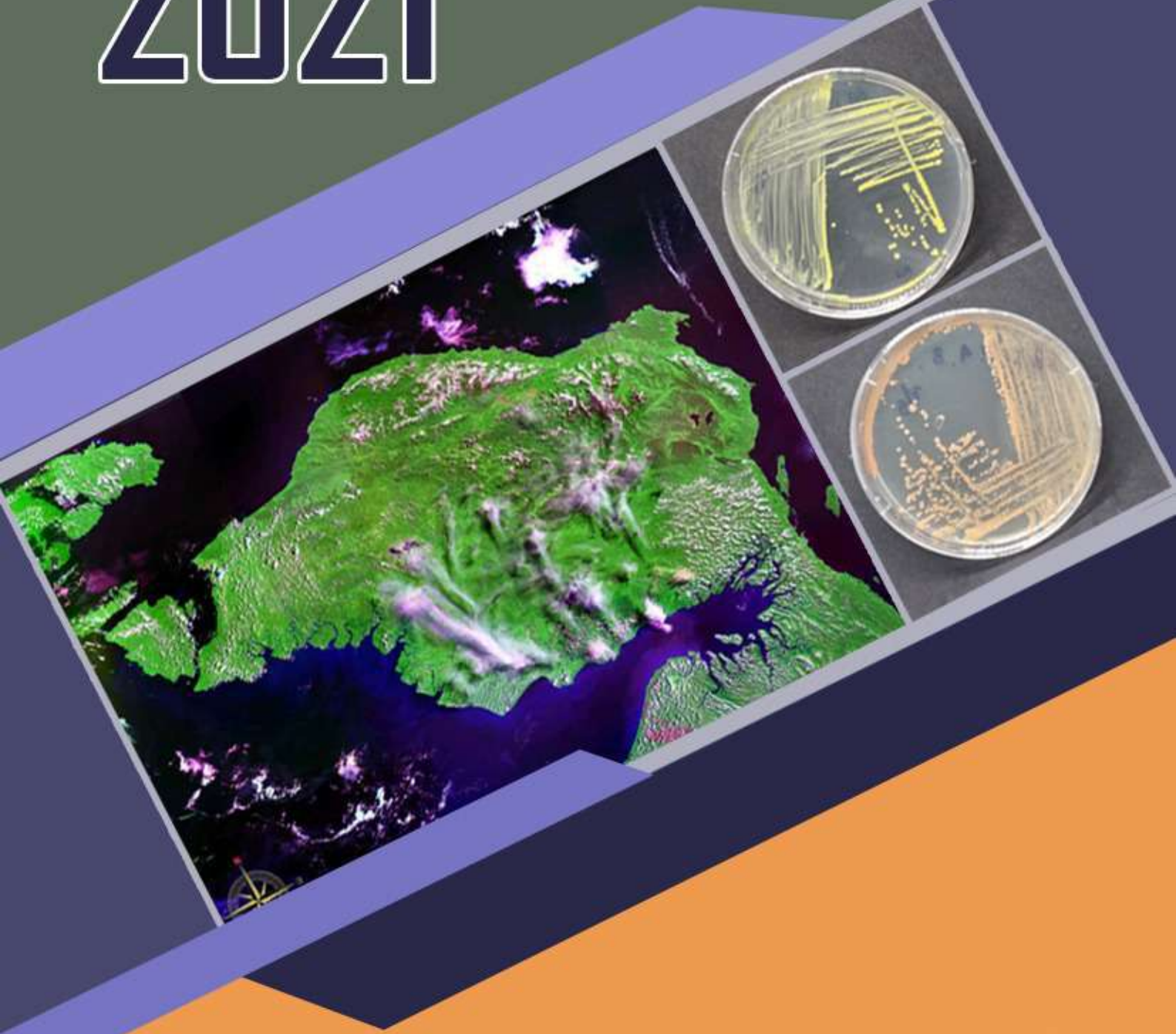
CULTURE COLLECTION FROM BIRD'S HEAD SEASCAPE PAPUA

2021



UNIVERSITAS DIPONEGORO

PREFACE

Diponegoro University is one of the major universities in Indonesia which has the status of a Legal Entity University (PTNBH). The vision of Diponegoro University is to become an excellent research university, so that various policies lead to achieving that vision. This is also realized by lecturers and students who continue to improve their research activities. Funds and research facilities continue to be pursued by universities, besides that, many funds come from the government as well as from collaboration with domestic and foreign institutions.

The Integrated Laboratory is one of the units at Diponegoro University whose duty is to serve and provide facilities and infrastructure for Undip lecturers and students in carrying out research activities.

One of the facilities needed is Microbes Culture Collection. This is needed for various research activities that require microbes. This document provides information on the Culture Collection of Microbes obtained from Crustacea of Bird's Head Seascape (BHS) of Papua. We hope that these microbes originating from ruminants can continue to be developed and can come from various other places.

Hopefully this Culture Collection of Microbes obtained from Crustacea of Bird's Head Seascape (BHS) of Papua will be useful in developing research at Diponegoro University.

Semarang, August 2021
Head of Undip Integrated Laboratory

Prof. Istadi, PhD

Culture Collection of Microbes obtained from Crustacea of Bird's Head Seascape (BHS) of Papua (Stored at Natural Product Laboratory room 2.7. - Laboratorium Terpadu Universitas Diponegoro)

BACKGROUND

The waters of the Bird's Head Seascape (BHS), Papua, Indonesia are well-known as an area with a high diversity of marine biota species. The Bird's Head Seascape (BHS) of Papua is a marine conservation priority area at regional, national and world levels (Huffard et al. 2010). This area is rich in marine biodiversity, has the highest diversity of coral reefs in the world (McKenna et al. 2002, CI Indonesia 2007. Veron et al. 2009, Allen & Erdmann 2012) with more than 1,638 species of reef fish and 600 species of coral reefs (about 75 percent of the world total). In this area there are also several types of economically viable marine life including mackerel, snapper, squid, reef fish (grouper, lobster), and shellfish including seaweed. Various types of marine invertebrates also inhabit various habitats in the BHS (Allen & Adrim 2003, Allen 2007). However, there are still many biota in this area that are not yet available (Mangubhai et al. 2012, Nikijuluw 2017).

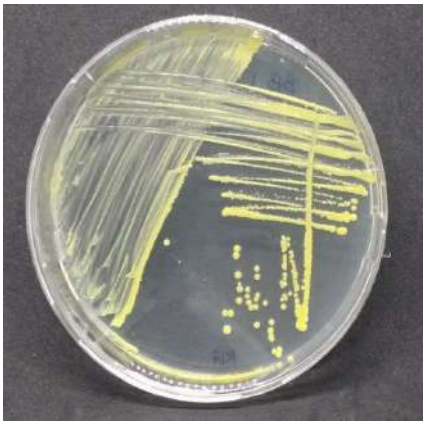
The Majoidea Samouelle, 1819 are a superfamily of crabs that typically found in the dead corals and live in marine and coastal systems of Indonesia water (Rahayu 2011, Windsor and Ahyong 2013, Tawakkal et al. 2017, Lee and Ng 2019). The Majoidea are one of the most species-rich among the brachyuran superfamilies. These spider crabs include five families (Grave et al. 2009), or six families (Ng et al. 2008, Windsor and Felder 2014, WoRMS 2021), or seven families in Crab database (Crab Database 2016), or comprises eight families: Epialtidae, Inachidae, Inachoididae, Majidae, Mithracidae, Oregoniidae, Pisidae, and Tychidae (Myers et al. 2021, McLaughlin et al., 2005) with more than 900 species forming it (Ahyong et al. 2011, Davie et al. 2015). Some species of Majoidea are popular for the live-seafood trade (Marques et al., 2010) and most species play an important role as omnivorous, scavenger, consumer and prey in marine ecosystem (Warner, 1977). They are also an important group as top predators and ecosystem engineers (Kristensen 2008) that play structuring roles in many benthic biocenoses. The decapod crustaceans of Majoidea also have a high significance as ecological quality indicator species, and some of them sustain/support commercial or traditional fisheries (Micu and Micu 2006). Majoid crabs are the only superfamily of brachyurans that exhibit camouflage behavior (Guinot and Wicksten, 2015), which aims to avoid predators (Wicksten 1993).

The high diversity of marine biota in BHS Papua is followed by the diversity of microbiota associated with it. These microbiotas can be found in the outer shell or the interior of marine invertebrates. With the high diversity of marine biota in BHS Papua, the microbiota is also expected to have high diversity and can provide genetic resources for various purposes i.e., commercial, economic, and ecological.

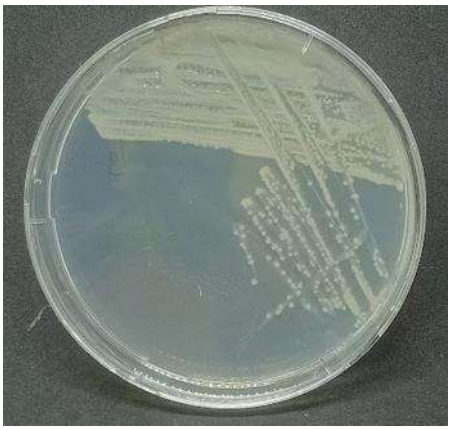
AIMS

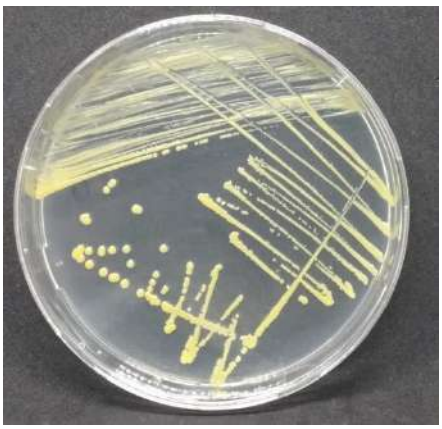
To store and preserve genetic materials from culturable microbes isolated from invertebrate of Bird's Head Seascape Papua, Indonesia to be developed and used for viable purposes including bioprospecting.

Culture Collection of Microbes obtained from Crustacea of Bird's Head Papua (Stored at Natural Product Laboratory room 2.7. -Laboratorium Terpadu Universitas Diponegoro)

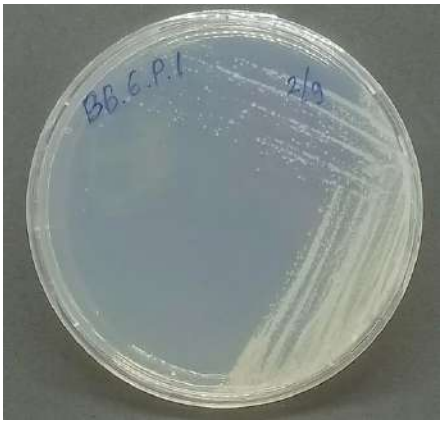
No	Isolates Code	Protease Test	Morphology	Plate view of the Isolates
Tripneustes gratilla was taken from Telaga Rendani, Manokwari.				
	Isolated from Gonad.			
1	BB.1.G.4.1	-	**Colonies**: - Form: Circular - Margin: Entire - Elevation: Convex **Pigment**: Yellow	
2	BB.5.G.1	+	**Colonies**: - Form:Circular - Margin: Entire - Elevation: Convex **Pigment**: Yellowish White	

3	BB.5.G.1.B	+	**Colonies**: - Form:Circular - Margin: Entire - Elevation: Convex **Pigment**: Yellowish White	
4	BB.5.G.2	+	**Colonies**: - Form: Circular - Margin: Entire - Elevation: Convex **Pigment**: Yellow	
5	BB.5.G.3.1.C	+	**Colonies**: - Form: Circular - Margin: Entire - Elevation: Convex **Pigment**: White	

6	BB.5.G.M.B	+	**Colonies**: - Form: - Margin: - Elevation: **Pigment**:	
	Isolated from Mouth			
7	BB.5.M.B	-	**Colonies**: - Form: Circular - Margin: Entire - Elevation: Convex **Pigment**: Yellowish white	
8	BB.6.M	+	**Colonies**: - Form: Circular - Margin: Entire - Elevation: Convex **Pigment**: Orange	

9	BB.6.M.4.1	+	**Colonies**: - Form: Circular - Margin: Entire - Elevation: Convex **Pigment**: Yellow	
	Isolated from Digestive tract.			
10	BB.5.P	-	**Colonies**: - Form: Circular - Margin: Entire - Elevation: Convex **Pigment**: Yellow	
11	BB.5.P.1	-	**Colonies**: - Form: Circular - Margin: Entire - Elevation: Convex **Pigment**: Yellowish white	

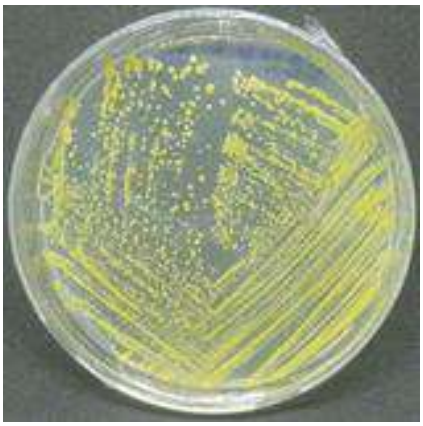
12	BB.5.P.3.2.A	-	**Colonies**: - Form: Circular - Margin: Entire - Elevation: Convex **Pigment**: Yellowish white	
13	BB.5.P.4.1.B	-	**Colonies**: - Form: Circular - Margin: Entire - Elevation: Convex **Pigment**: Orange	
14	BB.5.P.4.2.A	-	**Colonies**: - Form: Circular - Margin: Entire - Elevation: Convex **Pigment**: White	

15	BB.5.P.4.2.B.B	-	**Colonies**: - Form: Circular - Margin: Entire - Elevation: Convex **Pigment**: White	
16	BB.5.P.4.3	-	**Colonies**: - Form: Circular - Margin: Entire - Elevation: Convex **Pigment**: Orange	
17	BB.6.P.1	+	**Colonies**: - Form: Circular - Margin: Entire - Elevation: Convex **Pigment**: White	

18	BB.6.P.2	+	**Colonies**: - Form: Circular - Margin: Entire - Elevation: Convex **Pigment**: White	
Echinothrix calamaris (Gonads) was taken from Telaga Rendani, Manokwari.				
	Isolated from Gonad.			
19	BB.4.G.1	+	**Colonies**: - Form: Circular - Margin: Entire - Elevation: Convex **Pigment**: White	
20	BB.4.G.2	+	**Colonies**: - Form: Circular - Margin: Entire - Elevation: Convex **Pigment**: Yellow	

21	BB.4.G.3.B	+	**Colonies**: - Form: Circular - Margin: Entire - Elevation: Convex **Pigment**: Yellow	
22	BB.4.G.B	+	**Colonies**: - Form: Circular - Margin: Entire - Elevation: Convex **Pigment**: White	
	Isolated from Mouth.			
23	BB.4.M	+	**Colonies**: - Form: Circular - Margin: Entire - Elevation: Convex **Pigment**: White	

24	BB.4.M.3.2.B	+	**Colonies**: - Form: Circular - Margin: Filamentous - Elevation: Umbonate **Pigment**: Yellowish White	
25	BB.4.M.4.1	+	**Colonies**: - Form: Circular - Margin: Entire - Elevation: Convex **Pigment**: White	
	Isolated from Digestive tract.			
26	BB.4.P.3.1	-	**Colonies**: - Form: Circular - Margin: Filamentous - Elevation: Raised **Pigment**: Yellowish White	
Majoidea sp. was taken from Asai Beach, Manokwari.				
	Isolated from Carapace			

27	KP.4.K.0.2	+	**Colonies**: - Form: Irregular - Margin: Undulate - Elevation: Raised **Pigment**: Cream	
28	KP.4.K.1	+	**Colonies**: - Form: Circular - Margin: Entire - Elevation: Convex **Pigment**: Yellow	
29	KP.4.K.2	+	**Colonies**: - Form: Circular - Margin: Entire - Elevation: Convex **Pigment**: Yellow	
30	KP.4.K.3.2	+	**Colonies**: - Form: Irregular - Margin: Undulate - Elevation: Umbonate **Pigment**: White	

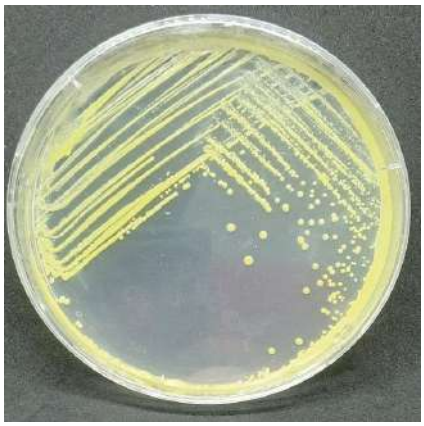
	Isolated From Digestive tract.			
31	KP.4.P	+	**Colonies**: - Form: Circular - Margin: Entire - Elevation: Umbonate **Pigment**: Orange	
32	KP.4.P.0.2.A	+	**Colonies**: - Form: Irregular - Margin: Undulate - Elevation: Convex **Pigment**: Pink	
33	KP.4.P.1	+	**Colonies**: - Form: Irregular - Margin: Undulate - Elevation: Raised **Pigment**: Yellowish White	

34	KP.4.P.2	+	**Colonies**: - Form: Circular - Margin: Entire - Elevation: Convex **Pigment**: Pink	
35	KP.4.P.3	+	**Colonies**: - Form: Irregular - Margin: undulate - Elevation: Umbonate **Pigment**: Yellowish White	
Gecarcoidea lalandil was taken from Asai Beach, Manokwari.				
	Isolated from Carapace.			
36	KP.5.K	+	**Colonies**: - Form: Circular - Margin: Undulate - Elevation: Raised **Pigment**: Yellowish White	

37	KP.5.K.0.1.A	+	**Colonies**: - Form: Circular - Margin: Entire - Elevation: Convex **Pigment**: Cream	
38	KP.5.K.2	+	**Colonies**: - Form: Circular - Margin: Entire - Elevation: Convex **Pigment**: Pink	
39	KP.5.K.3.2	+	**Colonies**: - Form: Circular - Margin: Entire - Elevation: Convex **Pigment**: Kuning	
40	KP.5.K.A	+	**Colonies**: - Form: Circular - Margin: Entire - Elevation: Convex **Pigment**: Yellow	

	Isolated from Digestive tract.			
41	KP.5.P	+	**Colonies**: - Form: Irregular - Margin: Undulate - Elevation: Raised **Pigment**: Pink	
Gecarcoidea sp. was taken from Asai Beach, Manokwari.				
	Isolated from Carapace			
42	KP.6.K	+	**Colonies**: - Form: Circular - Margin: Undulate - Elevation: Convex **Pigment**: Yellowish White	
43	KP.6.K.1	+	**Colonies**: - Form: Circular - Margin: Entire - Elevation: Raised **Pigment**: Yellowish White	

44	KP.6.K.1.2	+	**Colonies**: - Form: Circular - Margin: Entire - Elevation: Convex **Pigment**: Cream	
45	KP.6.K.2	+	**Colonies**: - Form: Circular - Margin: Entire - Elevation: Convex **Pigment**: Cream	
46	KP.6.K.3	+	**Colonies**: - Form: Irregular - Margin: Undulate - Elevation: Umbonate **Pigment**: Yellowish White	
47	KP.6.K.3.3.B	+	**Colonies**: - Form: Circular - Margin: Entire - Elevation: Convex **Pigment**:White	

Panulirus longipes was taken from Roon Island, Wondama.				
	Isolated from Digestive tract.			
48	LB.2.P.3	+	**Colonies**: - Form: Circular - Margin: Entire - Elevation: Convex **Pigment**: Yellow	
49	LB.2.P.3.1.A.A	+	**Colonies**: - Form: Circular - Margin: Entire - Elevation: Convex **Pigment**: Yellow	
Panulirus versicolor was taken from Roon Island, Wondama.				
50	LB.4.K (Carapace)	+	**Colonies**: - Form: Circular - Margin: Entire - Elevation: Convex **Pigment**:White	

51	LB.4.P.3.1.B (Digestive tract)	+	**Colonies**: - Form: Circular - Margin: Entire - Elevation: Convex **Pigment**: White