

# Determine The Type of River Diatoms Destruktif Asam Seikambing and Sulang-Saling in Medan City

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**Abstract-** The victims of drowning can be found in almost all places every time since there are moats, wells, rivers, ocean or seas surrounding us and even the water in pail in bathroom. Checking up on the victims of the drowning can be considered as the murder. The important point to consider is related to the determination of whether the victim died in the river or has been died outside and drowned. Diatome is as the diagnostics means to know the location of the drowning before died, by the way of comparing the diatome found in the body of the victim with the diatome water considered as the place for the drowning.

Descriptive type of research done is to determine the types of diatoms in the rivers in the city field in helping to determine the crime scene drowning victim. This study was conducted in rivers and streams Seikambing Sulang-saling. The study population was diatoms in rivers and stream Seikambing Sulang-saling in the city field. Materials used in this study is the river water taken on two rivers mentioned above.

Of the results of the study found 15 species of diatoms in the river Seikambing and 12 species of diatoms in the rivers Sulang-saling. Found in rivers and streams Seikambing Sulang-saling presence of some different types of diatoms in each of each, but some of the same types of diatoms found in each of each station. So does his thing on the rivers and stream Seikambing Sulang-saling presence of some different types of diatoms in the river, but some of the same types of diatoms found in the river.

The results obtained in this study is not about providing a comprehensive overview of the types of diatoms in rivers and stream Seikambing Sulang-saling given the long duration of the study is still limited so expect to get a clearer picture of diatoms, further research needs to be done with the tools and instruments that better.

**Index Terms-** Drowning, diatome.

## I. INTRODUCTION

**D**rowning is generally a form of death in water or other liquids due to the undivided air into the lungs and the inclusion of fluid in the respiratory tract the death of drowning means placing a person into water or a fluid. Generally drowning is a case of accident, either directly or because there are certain factors such as victims in a drunk or under the influence of drugs, and death from drowning is also caused by an event of murder.<sup>1</sup>

Diatoms are microscopic-sized organisms and live hovering in the waters, both freshwater, brackish and sea. The existence of diatoms in various waters can be used as one of the

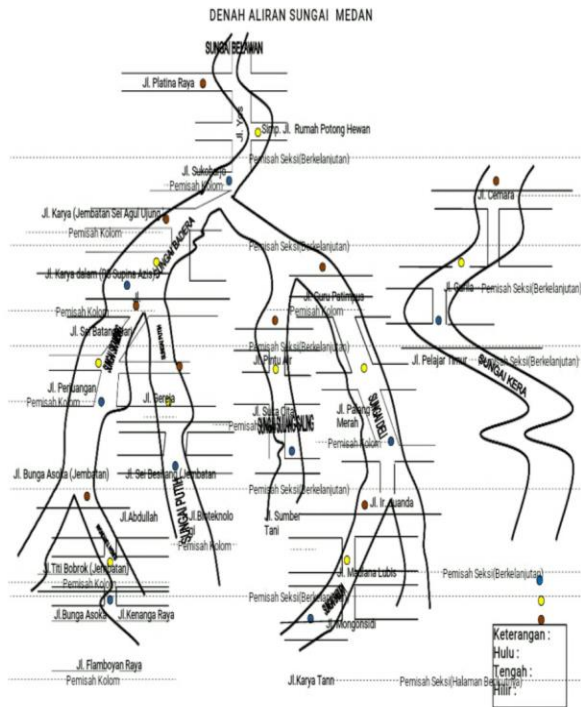
indicators or instructions for death and cause of one's death because it is drowned or sunk. When a person sinks or is drowned in a water, the diatoms found in the water will enter the body along with the water. One example of identification of diatoms into a bioindicator in forensic is on a case of death of a person whose body was found to have been floating on the surface of the river the investigation was conducted by taking the river water samples at the crime scene and An investigation shows that the victim drowned in a river,<sup>5</sup> and several other drowning cases present similar results.

Some of the previous studies related to diatoms include Dr. Asan Petrus (2013), reviewing the types of diatoms in some rivers in the city of Medan including the Deli River and Babura River. Diagnosis of the death of a drowned in a river is difficult to identify because the river is a water of currents, so that the dead body drowning on the upper part of the river can be found on the downstream of the river.

## II. RESEARCH METHODS

This research is a descriptive data analysis research to know the type of diatoms in Sungai Seikambing and Sungai Sulang mutually in the city of Medan. The research was conducted on 2 rivers in Medan City namely Seikambing River in the village of Sei Kambing Sub-district of Medan Sunggal and Sungai Sulang-Mutual in Medan Denai subdistrict. The research was conducted on July 01-August 2019.

### III. FLOW PLAN IN MEDAN CITY



with a capacity of 20 ml, labels, pens, pipette drops, glass objects as well as glass cover, microscope, camera, plankton net. Sentrifus, and materials Required is concentrated H2SO4 solution, concentrated HNO3, Aquades.

The Data obtained further will be processed in the following manner: Editing, Coding, Tabulating.

#### Location of Research Point:

Seikambang River	Upstream	Jembatan Jl. Bunga Asoka
	Central	Jembatan Jl. Perjuangan
	Downstream	Jembatan jl. Sei Batang Hari
Sulang-saling River	Upstream	Jl. Sumber tani
	Central	Jl. Suka cita
	Downstream	Jl. Pintu Air

The research was conducted on July 01-August 2019.

The sample in this study is the river water taken from 2 rivers in the city of Medan on different locations namely Seikambang River and Sungai Sulang-Mutual. Samples were taken at 3 stations i.e. 1 upstream of the river, Station 2 middle of the river, 3 downstream river stations. The sampling techniques in this study are using purposive random sampling methods. Determining the 3 sampling stations at the upstream, middle and downstream to determine the types of diatoms found in the rivers of research locations, The way this research works is by taking water from the river at a depth of 1 to 2 meters from Water surface using plankton net (plankton net), then the netted plankton samples will be collected in the bucket that is then taken into the sample bottle as much as 20 ml and snuff concentrated sulfuric acid into the sample as much as 20 ml in a bottle Samples until they turn into a cloudy color and are labeled. Then keep it in closed state at room temperature for 24 hours. After that, the sample is poured into the reaction tube and heated to boiling, then the nitric acid is translucent until it changes color to a clear color. Subsequent samples were inserted into each of the lube tubes of the same size, once they were inserted into the sentifuse for the centrifugation or disintegrating (purification) of other particles to leave the diatomic deposition and Clear-colored coating fluid on the sample tube for 15 minutes at a speed of 2000-4000 rpm. Then remove the lube tube and wash it using the aquadest and do centrifugation again. The result of centrifugation (sediment) is then placed on the glass object to be examined by a microscope with a magnification of 100 times. The diatomic type is known through the morphological identification or diatomic form based on the freshwater identification book Edmonson et al., (1959) and Dang et al., (2015).

The tools and materials needed in research IMI are glass bottles of chocolate, plastic bottles and glass bottles transparent,

### IV. RESULTS AND DISCUSSION

Based on the results of the research conducted on the river water taken on 2 rivers that exist in the city of Medan namely Seikambang River and Sungai Sulang-Mutual at different locations in the upper, middle and downstream areas, at one place held 1 time The shot is then made into 8 slides. In this case 1 river is taken 3 samples which are each made into 8 slides. So the number of samples in this study is 48 slides

#### Distribution of Diatom types at Seikambang at Upstream, Central and downstream stations in Medan.

Location	Station		
	Upstream	Central	Downstream
Seikambi ng River	<i>Synedra sp</i>	-	+
	<i>Phacus sp</i>	+	-
	<i>Navicula sp</i>	+	-
	<i>Plectonem a boryanum</i>	-	-
	<i>Pleurosigm a sp</i>	+	+
	<i>Pleurosigm a amarum</i>	+	+
	<i>Skeletonem a costatum</i>	-	-
	<i>Trachelom onas sp</i>	-	+
	<i>Ulotrix sp</i>	-	-
	<i>Heliotheca sp</i>	+	+

	-	<i>karatella sp</i>	-
	-	<i>synedra ulna</i>	-
	-	-	<i>Amphiphora alata</i>
	-	-	<i>Staurastrum anatinum</i>
	-	-	<i>Stauroneis phoenicentron</i>

Description : + : Found  
- : Not found

**Distribution of types of diatoms in Sungai Sulang-intertwined on the upstream, middle, and downstream stations in the city of Medan**

Location	Station		
	Upstream	Central	Downstream
Sulang-saling River			
	<i>Amphiphora alata</i>		
	<i>Pleurosigma sp</i>		+
	<i>sphaerocystis sp</i>		
	<i>Staurastrum sp</i>	+	
	<i>Synedra sp</i>	+	
	<i>phacus sp</i>		
		<i>Blastocystis hominis</i>	
			<i>Lyngbya confertifoides</i>
			<i>Navicula sp</i>
			<i>Platyas quadricornis</i>
			<i>Pleurosigma amarum</i>

Description : + : Found  
- : Not Found

**Distribution of diatoms in Sungai Seikambing with the river Sulang-Saling in the city of Medan.**

No	Diatom	RIVER	
		Seikambing	Sulang-saling
1		<i>Synedra sp</i>	+

2		<i>Phacus sp</i>	+
3		<i>Navicula sp</i>	+
4		<i>Plectonema boryanum</i>	-
5		<i>Pleurosigma sp</i>	+
6		<i>Pleurosigma amarum</i>	+
7		<i>Skeletonema costatum</i>	-
8		<i>Trachelomonas sp</i>	-
9		<i>Ulotrix sp</i>	-
10		<i>Heliotheca sp</i>	-
11		<i>karatella sp</i>	-
12		<i>synedra ulna</i>	-
13		<i>Amphiphora alata</i>	+
14		<i>Staurastrum anatinum</i>	-
15		<i>Stauroneis phoenicentron</i>	-

In this research, it can be seen that from the data above found in rivers Seikambing and Sungai Sulang-the intertwining of the different types of diatoms on both rivers, but there are also some same types of diatoms found in both rivers. There are 6 types of diatoms found on the two rivers that are diatoms of *Synedra sp.*, *Phacus sp.*, *Navicula sp.*, *Pleurosigma sp.*, and *Amphiphora alata*. *Synedra sp.*, *Navicula sp.*, *Pleurosigma sp.*, is the diatoms of the Chrysophyta division of the Bacillariophyceae class. Bacillariophyceae has the ability to adapt to the current strong to the slow because it has a stamped device on the substrate in the form of a buatin. 28 Bacillariophyceae is also a well-known Bioindicator Generally good to know the pollution level. *Phacus sp.*, is a Diatoms are classified In the Euglenophyta division.

According to the Pelczar (2010) It states that the Euglenophyta division is a unicellular algae found in active-moving waters and has a flagellum.<sup>29</sup>

## V. CONCLUSION AND SUGGESTION

The same type of diatoms found in different rivers can be caused by river currents that cause diatoms to be distributed and stacked in a particular place. This relates to the ability of the diatoms to enter and survive in the organ of the human body as a result of drowning which is beneficial as an indicator of the death of a person from drowning or found in rivers. In accordance with Purnomo 2015 statement. States that the diatomic species found in a water can be used to aid in exposing the location of death from a death case caused by drowning. When a person sinks simultaneously water and other objects in particular, the atoms in the water will enter the body especially the respiratory system.<sup>30</sup>

### Advice

Based on the results of the above studies, the author suggests the following:

1. The need for more research on the diatomic diversity in the entire River city of Medan
2. To get a clearer picture of diatoms, it needs to be done Further research with better tools and instruments.
3. The need to be conducted next diatoms research based on activities occurring in the river of Medan.

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