IDENTIFICATION OF DIATOMS ASSOCIATED WITH DROWNING

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Drowning causes death due to asphyxia by submersion in water. Diatoms are autotrophic water planktons. Different genera of diatoms are found in both marine and fresh habitats. When an individual drowns, diatoms enter into the lung cavity through the aspirated water. Pressure exerted by water on the lung cavity facilitates the entry of diatoms into the blood stream. Thus, diatoms can reach the heart, liver, kidney, brain and bone marrow. In this process however, diatoms that are small enough to penetrate through the narrow diameter of the lung alveoli, enter the organs through the blood stream. These are known as, "*Drowning Associated Diatoms*" (DAD). Analysis of the presence of DAD in the lungs, liver, spleen, blood and bone marrow, has for many years been undertaken as a reliable test in forensic practice in downing cases. Studies on forensically significant diatoms in Sri Lanka are few and scanty. The objective of this study was to document the genera of DAD present in samples referred for the purposes of diatom analysis.

Thirty five tissue samples, obtained from thirty five different suspected drowning cases, referred to the Department of Forensic Medicine, Peradeniya, were analyzed with a view to identify the diatom present. The tissue samples studied were the lungs, kidneys and bone marrow. A routine slide preparation, using the standard technique of Nitric acid digestion and centrifugation, was done. The diatoms were then identified under the light microscope.

In this study the genus *Cyclotella* was found to be the most frequent type present followed by *Melosira, Navicula* and *Nitzschia*. In addition, genera *Frustulia, Gomphonema, Pinnularia, Cymbella* and *Cocconeis* were also identified.

Diatoms associated with drowning in Sri Lanka include predominantly the genera *Cyclotella, Melosira, Navicula, Nitzschia* and the genera *Frustulia, Gomphonema, Pinnularia, Cymbella* and *Cocconeis*.