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Phytoplankton of the Atlantic Ocean, off Lagos, Nigeria

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Abstract : A study was carried out in the Atlantic Ocean off the Lighthouse Beach, Lagos. There were monthly and spatial variations in physical and chemical characteristics of the neritic ocean (August - December, 2014). Mean and standard deviation values for air temperature were 27. 67, ± 2.98 °C, water temperature (28.37 ± 1.88), pH (7.85 ± 0.17), conductivity (44738.75 ± 6262.76 µS/cm), total dissolved solids (29236.71 ± 4273.30 mg/L), salinity (27.11 ± 3.91 ‰), alkalinity (126.99 ± 42.81 mg/L) and chloride (15056. 67 ± 2165.78 mg/L). Higher estimates were recorded in the dry than wet months for these characteristics. On the other hand, reducing values were recorded for acidity (2.34 ± 0.63 mg/L), total hardness (4711.98 ± 691.50 mg/L), phosphate (1.1 ± 0.78 mg/L), sulphate (2601.99 ± 447.04 mg/L) and nitrate (0.12 ± 0.06 mg/L). Values for total suspended solids and biological oxygen demand values were low (<1mg/L). Twenty-one species of phytoplankton were recorded. Diatoms recorded 80.92% and were the dominant group. Hemidiscus cuneiformis, Coscinodiscus centralis, Coscinodiscus lineatus, Coscinodiscus radiatus and Oscillatoria limosa were more frequently occurring species. Biddulphia sinensis and four species of Ceratium, were representatives of the dry season. The dry season also recorded comparatively higher individuals of phytoplankton than the wet season. Spirogyra sp. (green algae) appeared only in the wet season. Species abundance (N) was highest in December at Station 1 (13.15%) (dry season) and lowest in August (wet season) at Station 3 (2.96%). The physico-chemical factors and phytoplankton reflected a tropical unpolluted neritic oceanic environment.

Keywords : sea, physico-chemistry, lighthouse beach, microalgae
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