

effect of light. Physical Oceanography is specially concerned with the scientific analysis of interchange and inter actions of energy transfer taking place all the time at the interface.

The physical Oceanography lays greater emphasis on the physical processes operating at the interface of the atmosphere and the oceans. Since sinking and upwelling of oceanic water are closely related origin of ocean currents, these phenomena are naturally the subject matter of physical Oceanography.

Chemical Oceanography

The ocean water contains various salts and other substance in dissolved form which affect the physical processes and biological cycles which are in operation in it. Besides these salts, there are many chemical factors which exercise some control over the organic, geological and other physical processes found in the sea water. That is why greater importance is attached to the chemical analysis of sea water in the modern Oceanography. Samples of sea water collected from varying depths in water samplers are sent to the laboratory for their physicochemical analysis. Chemical Oceanography has for its subject matter various complex chemical problems pertaining to sea water. Hydrogen bonds of the molecules of surface water, their convalent bonds, surface tension, electrical conductivity, osmotic pressure, chemical determination of chlorides, isotopes etc. are some of the complex chemical problem which are the subject matter of chemical Oceanography. Actually the nutrient cycle is wholly dependent on the chemical composition of the sea water, and this nutrient cycle is directly related to the vast organic world of the oceans.

Various motions of the ocean water are largely affected by its temperature salinity, and density etc. Chemical Oceanography also studies the problem of pollution of ocean water and tries to find out a solution. This branch of Oceanography also seeks a solution of the problem related to the dumping of radioactive industrial wastes, and the environmental pollution caused by petrochemicals.

Marine 'Biology

Marine biology may be considered as a branch of zoology, though it is mainly concerned with the study of the sea as biological environment. Its subject matter encompasses the study of the chemical composition of the ocean water, planktonic life comprising zooplankton and phytoplanktons, different types of marine organism – from tiny organisms to large animals.

Geological Oceanography

This branch of Oceanography studies the geological structure of the ocean basins. It includes the study of the origin of ocean basins, their structure, the morphology of the