Ocean Deposits

Ocean deposits are the unconsolidated sediments (Inorganic or Organic) derived from various sources deposited on the oceanic floor.

What are the sources of these ocean deposits ?

These ocean deposits are derived from three major sources:

1- Terrigenous Sources

2- Volcanic Deposits

3- Pelagic Deposits

What are Terrigenous Deposits ?

Weathering is an ongoing process being carried upon,on the various continental rocks by numerous mechanical and chemical agents. As a result of which, these rocks get disintegrated and get decomposed to form fine to coarse sediments.These sediments brought by rivers, streams, winds, glaciers, oceanic currents, waves etc get deposited upon the continental margins are thereby known as terrigenous deposits.

The shape and size of these materials differ which in turn influence their seaward distribution. Bigger sized sediments get deposited near the coast such as boulders, cobbles and pebbles, while the finer sediments get deposited away from the sea coast.

On the basis of size of particles and density, following pattern has been identified.

Deposit	**Size(Diameter)**
Gravel	2mm- 256mm
Sand	1mm – 1/16mm
Silt	1/32mm – 1/256mm
Clay	1/256mm – 1/8192mm

Mud	Finer than 1/8192mm

Mud has been further classified into following categories:

Type of Mud	Characteristics
Blue Mud	Sediments derived from rocks containing Iron Sulphide and decomposed organic content.
Red Mud	Sediments derived from rocks containing Iron Oxide
Green Mud	Color of blue mud changes into green due to reaction with sea water. It Contains silicates of potassium and glauconites
Coral Mud	Derived from coral reefs located on continental shelf

What are Volcanic Deposits ?

These are the materials which are deposited in marine environment by volcanic eruptions on land which are carried by wind, river, rain wash etc to the oceans and volcanic eruption in the ocean which deposit sediments directly into the ocean.

What are Pelagic Deposits ?

These are the organic and Inorganic sediments deposited on the ocean floor. They are derived from the skeletons of marine organisms and marine plant remains.

They can be categorized into :

Organic Material	Characteristics
Neretic Matter	Contain skeletons of marine organisms and plant remains. These include shells of molluscs, skeletons of radiolarians and spicules of sponges,

	calcareous and siliceous plant remains.
Pelagic Matter	It consists of matter derived from algae and they are generally referred to as ooze.

On the basis of relative content of calcium carbonate or silica, pelagic deposits can be divided into :

1- Calcareous ooze

2- Siliceous ooze

Calcareous ooze

Pteropod	Globigerina
Derived from bio- decomposition of mollusc skeletons.	Derived from bio- decomposition of zooplanktons.
Mollusc is marine invertebrate.	Globigerina are marine protozoans.
These deposits are more prevalent in Atlantic and Indian Ocean	These deposits are most extensive in pacific ocean.

Siliceous Ooze

Diatom	Radiolarian
Derived from bio- decomposition of marine phytoplankton.	Derived from bio- decomposition of radiolaria
Phytoplankton are marine microscopic algae.	Radiolarians are marine protozoans
They are most extensive in Pacific Ocean.	They are most extensive in Pacific Ocean.

Volcanic dust deposited on the oceanic floor are the source of Inorganic Pelagic deposits. They are also called as Red Clay as it is rich in iron oxide.

Sources and Types of Marine Sediment

There are four kinds of marine sediments, Lithogenous, biogenous, hydrogenous and cosmogenous. Lithogenous are from the land, they form through the weathering process and are composed of small particles from weathered rock and volcanic activity. And within Lithogenous sediments there are two sub categories: Terrigenous and red clay. Terrigenous sediments are produced when the weathering process occurs above water. Wind and other natural sources then carry these particles to the ocean where they sink. Red clay, also known as abyssal clay however, is mostly located in the ocean and is formed from a combination of terrigenous material and volcanic ash. In terms of size, terrigenous particles are generally larger than abyssal clay particles so they sink faster.

Biogenous sediments are formed from the remnants of organisms that refused to be dissolved. Good examples of these organisms include shellfish, clams, anything that has a shell. Other things that could avoid being dissolved include bones and teeth and other appendages. In deeper waters, shells of plankton and other microscopic organisms form these kinds of sediments. Hydrogenous sediments are sediments solidified out of ocean water. As such, chemical reactions create these kinds of sediments. The precipitation of dissolved chemicals from seawater. These kinds of sediments are found commonly near hydrothermal vents. Cosmogenous sediments are probably the most interesting of all four kinds of sediment because they are alien in nature. These kinds of sediments are carried to earth on meteorites or asteroids. They are usually a conglomeration of different kinds of metals and due to their nature, are not easy to find.

Sedimentary rocks are made of sediments. In general, sediments occurred when the organic or inorganic material are broken down by processes of watering and erosion. There are four types of sediment: cosmogenous (from outer space), volcanogenous (ash from volcanic eruptions), terrigenous (continents erosion and river runoff), and biogenous (skeletons of marine creatures). Sediments are classified according to their size. In order to define them from the smallest size to the largest size: clay, silt, sand, pebble, cobble, and boulder. According to the video that I found online, named "Sediments: Definition, Type & Feature" by Dr Rebecca Gillaspy, delves deeper into the three types of sediments: clastic, biogenic, and chemical that forms sedimentary rocks. Sediment rocks, generally formed from the compaction and cementation of sediments are known as the rock capable of containing fossils. clastic sedimentary rocks are the compacted sediments and are composed of silicate minerals, for example, shale and sandstone. Biochemical sedimentary rocks are the products of organisms who used materials dissolved in water to build their tissue, for example, corals, radiolaria, and diatoms. Chemical sedimentary rocks are form when mineral constituents in solution become supersaturated and inorganically precipitate, for example, oolitic limestone, barite, and gypsum. As we mention earlier, sedimentary rocks are the only type of rocks that may contain fossils. In the other words, they contains the evidence of past life.