

California Rocks and Minerals

Introduction

In collecting rocks and minerals we learn those substances which make up the solid portion of the earth upon which we live. Plants, grasses, trees, water and also snow cover a great deal of the solid portion of the earth so that in hunting rocks and minerals that are not always visible but here and there either from volcanic action or weather conditions rock and minerals may be exposed to the surface.

Some of the best specimens are found buried or in material broken open where water and air has not touched them.

Minerals have a definite chemical composition. They are the material of which the earth consists. Rocks are made up of one or more minerals.

Igneous rocks are those which were one time molten masses within the earth and have been brought to or near the surface by volcanic action.

Intrusive rocks are Igneous rocks that have been forced which in a melted state into the cavities or between layers of other rocks inside the earth. Granite and diorite are intrusive rocks and are composed of quartz, feldspar, and mica. Biotite and hornblende are sometimes present.

Extrusive rocks are those that have been thrown or driven out of the earth either by a quiet out welling of magma then solidified to rock, or the explosion in which material by a violent action of gasses is thrown into the air and fall a solid form. Some extrusion rocks are: RHYOLITE, SCORIA, OBSIDIAN, PUMICE, and BASALT. A quiet eruption of magma outpour is called LAVA.

Metamorphic rocks are those which have been altered from their original form. The change is the result of heat or pressure. Simple metamorphic rocks are: SLATE, MARBLE, and SCHISTS. Minerals found in Metamorphic rock are MICAS, ACTINOLITE, CHLORITE, DIOPSIDE, FELDSPARS, GARNETS, HORNBLENDE, QUARTZ, SERPENTINE, and TALC.

Sedimentary rocks are formed from igneous, metamorphic or even sedimentary rocks. This formation takes place through the weathering of older rocks, from plant and animal and from being deposited out of water solution. Some sedimentary rocks are: SANDSTONE, SHALES, LIMESTONE, FOSSILS, and TUFF.

Gems are the minerals of jewelry. **Ores** are the minerals from which metals derived. **Fossils** are minerals in composition and **Coal** is a mineral derived from buried plants.

Conglomerate rocks are round pebbles cemented together by natural cement.

Breccias are broken fragments cemented together by natural cement.

The Metals

GOLD, SILVER, COPPER, LEAD, and IRON are well known for their many uses. ALUMINUM is the most common of all the metals in the earth's crust. MAGNESIUM is the lightest and the toughest of all structural metal.

The Quartz Group

QUARTZ composed of silicon and oxygen is very common and takes many forms and colors. PETRIFIED WOOD, ONYX, CHALCEDONY, AGATE, JASPER, FLINT, OPAL, CHRYSOPHRASE, and CHERT are all different forms of QUARTZ.

The Calciums

CALCIUM uniting with other elements form a large number of rocks. Some of the most common are: CALCITE, TRAVERTINE, GYPSUM, MARBLE, LIMESTONE, ALBASTER, FLUORITE, SELENITE, COLEMANITE, SATIN and ICELAND SPAR.

The Mica Group

BIOTITE and LEPIDOLITE belong to this group.

The Feldspar Group

The silicates combined with CALCIUM, SODIUM, POTASSIUM, and ALUMINUM form the FELDSPARS.

Silicates other than Quartz

The quartz group is a classification of the silica group. RHODONITE contains MANGANESE, ACTINOLITE, EPIDOTE, HORNBLENDE, ASBESTOS, TALC, GARNETS and SEPENTINE are the most common sub silicates.

The Gem Stones (semi precious)

TURQUOISE, BERYL, QUARTZ, MALACHITE, OPAL, BRECCIA, and PETRIFIED WOODS and many other silicates when colored with IRON, MANGANESE, COPPER or COPALS make beautiful stones which take a high polish.

The Sandstones

Sandstone is formed in stream beds or shallow seas and is composed of fine particles of rock loosened by weathering and held together by natural cement.

BAUXITE, the ore of ALUMINUM.

BORNITE, CHALCOPYRITE, MALACHITE, CUPRITE, CHYRSOCOLLA are the ores of COPPER.

CHROMITE, the ore of CHROMIUM.

CARNOTITE, is a URANIUM bearing material.

DOLOMITE, a crystalline variety of MAGNASIAN LIMESTONE.

GALENA the ore of LEAD.

MAGNETITE, HEMATITE, LIMONITE, PYRITE and SIDERITE, are the ores of IRON.

NATROLITE, is a ZEOLITE.

SULPHUR, is a non metallic element.

PSILOMELANE, is a MANGANESE OXIDE.

For more information on Minerals and Rock collecting
www.SRMGS.org