

TEXAS ROCKS & FOSSILS



- Abundant in many Texas localities, **fossil seashells** are found in a variety of settings, from blackland prairies to rocky hillsides. Individual specimens like these are usually from the Cretaceous period of some 100 million years ago. They may be actual fossil specimens, molds as shown in number 23, or casts like the heart cockle pictured here. Fossil snails, scallops, whelks, tusk shells and corals are also commonly found. Pictured fossils from 3/4 inch to 7 inches, all Central Texas.
- These **fossilized marine pelecypods** are sprinkled with shiny specks of marcasite, a mineral chemically identical to iron pyrite. Travis County.
- Pennsylvanian fossils in limestone** dating from the Paleozoic era some 300 million years ago. McCulloch County.
- Track of a theropod dinosaur** from Dinosaur Valley State Park near Glen Rose in North Central Texas. The site contains a host of tracks made from some 100 million years ago in limy mud, now turned to stone.
- Replica of the 12-foot-high, 50-foot-long **Tyrannosaurus Rex**, whose tracks are preserved in stone in Dinosaur Valley State Park (see number 4). The creature was once the world's largest land carnivore.
- Crinoidal limestone**, often composed almost entirely of fossils, is found in North Central, Central and West Texas, dating from the Pennsylvanian period. The plant-like animals grew in prehistoric seas, with long stems like columns of discs. Such stem fragments are the most frequent fossil finds. Burnet and Llano Counties.
- Fossil seashells** may be found singly, as in numbers 1 and 2, as integral parts of stone as in numbers 3 and 6, or cemented in knobby chunks as pictured here. Hays County.
- Petrified wood** derives from conditions where plant material is buried before it decays. As slow, underground decay occurs, water-borne minerals replace the organic structure cell by cell, producing a mineral copy of the original plant, even to knotholes as pictured here. Fayette County.
- Fossilized palm wood** is the official state stone of Texas. It is found in a variety of mineral types and colors; see numbers 12, 21 and 32. Fayette County.
- Fossilized cycad stem** (8 inches), a once-abundant prehistoric plant group that resembled palms. McMullen or Live Oak County near Callahan.
- Petrified wood** is classified as agate, carbonized, silicified, opalized or other, according to the kind of mineral that replaced the wood fibers. This example is wood replaced by **malachite**, a green copper mineral. Jones County in North Central Texas.
- Dot patterns called "straws"** identify these specimens as **petrified palm wood**. They're always apparent in crosscut sections. For longitudinal section appearance, see number 21; also see numbers 9, 31 and 32.
- Replaced wood** formed when silica with high water content replaced the original material. See number 36 for more about opal. Fayette County.
- Cretaceous marine fossils** from a cave along the Colorado River in Travis County. The county is bisected by a major geological feature, the Balcones Escarpment.
- Typical **fossil coral**. Over millions of years, skeletons of these marine animals were calcified into enormous layers of rock. They inhabited inland seas that once covered far West Texas.
- Halite**, also known as common table salt, forms crystals in dry underground areas. Huge salt domes lie under the coastal plains and in West Texas. Marion County.
- This agate type is sometimes called "**Christmas agate**" because of its red, green and white colors. Despite the uneven, channelled appearance, the primary surface is actually flat and polished. Big Bend region. Also see numbers 17, 26 and 30.
- Texas agate**. When cut and polished its beauty and characteristics are easily recognized, but in its natural state it is far from spectacular and requires a practiced eye to find and judge as to quality. West Texas. Also see numbers 17, 26 and 30.
- A tumble-polished **silicified fern bud** from Live Oak County, Gulf Coast region of South Texas.
- Another example of lustrous **opalized wood**. Fayette County. Also see number 13.
- Longitudinal section (with the grain) of **petrified palm wood** in which the "straws" are not evident. Also see numbers 9, 12, 31 and 32.
- This section of **agatized wood** from Fayette County shows evidence of tree rings. Various types of petrified woods are found in virtually every part of Texas. Also see numbers 5, 10, 11, 13, and 19.
- Another example of fossils in limestone (also see numbers 3 and 6) are these **bivalve molds**. This stone is a popular building material seen in commercial structures throughout much of Texas.
- While marine fossils are the most abundant in Texas, others like this **fossilized animal bone** are not uncommon. Atascosa County.
- Galena**, or **lead ore**, is a heavy, shiny lead sulfide soft enough to mark paper. Some specimens break into perfect cubes when struck. Quitman Mountains, Hudspeth County.
- Texas plume agate** is found in colors from black through a virtual rainbow of other colors. West Texas. Also see numbers 17, 18, and 30.
- Rock gypsum** is a fine-grained, translucent to opaque stone often found in layers along the canyons of the Texas High Plains.
- Cooled gypsum on cinabar**. Gypsum is a soft, common mineral associated with sedimentary rocks, although it can also occur as a result of volcanic action. This "growth" of gypsum on cinabar (see number 78) is from an area near Terlingua in Brewster County.
- Packsaddle schist**, near Packsaddle Mountain in Llano County, probably formed deep within the earth during the Precambrian era more than 600 million years ago. Schist tends to split easily along thin, usually parallel lines in layers called folia.
- A nodule of **banded blue agate** from near Alpine in West Texas. Similar specimens are not uncommon throughout much of the length of the Rio Grande. Also see numbers 17, 18, and 26.
- A favorite material for lapidary work is **petrified palm wood**. Crosscut sections show the straw pattern, while longitudinal cuts may exhibit branching tree-like forms. Also see numbers 9, 12, 21 and 32.
- Petrified palm wood** in its many forms and colors is most plentiful in a broad band along the length of the Gulf Coast section, about a hundred miles inland from the present coastline. Smithville-La Grange area.
- A form of gypsum, **selenite crystals** are similar to, but softer than calcite and not as brittle. Found in rock cavities of several South Texas and Gulf Coast counties, formed by solutions in contact with surrounding rocks. Port Isabel area. Also see numbers 34 and 46.
- Another color variety of **selenite crystal** are these roses from Palo Duro Canyon in the Texas High Plains. Also see numbers 33 and 46.
- Fluorite crystals**, colors range from clear to purple, blue, pink, green, brown and white. Found in Central Texas (Burnet County) and in the Eagle Mountains, Hudspeth County, West Texas.
- In its natural state, **topaz** may resemble a transparent piece of glass, small pieces may appear frosted from tumbling action in streams. Associated with granite outcroppings, topaz is somewhat heavier than quartz, which it resembles. Central Texas. Also see number 39.
- In mankind's history, **flint** has been used for tools and weapons because it fractures into sharp, useful edges. Usually formed as nodules in limestone, this common blue-gray type is abundant throughout Texas. Also see number 48.
- In its natural state, **topaz** may resemble a transparent piece of glass, small pieces may appear frosted from tumbling action in streams. Associated with granite outcroppings, topaz is somewhat heavier than quartz, which it resembles. Central Texas. Also see number 39.
- Topaz** is the Texas state gemstone, and the finest gem-quality specimens are from Mason County, Central Texas.
- These black, greasy-to-touch **polyblende flakes** are from West Texas streambeds in Hudspeth County.
- Technically, **jasper** is an impure cryptocrystalline variety of quartz related to agate, chert and flint. For laymen, a fundamental difference is that jasper is very opaque while agate is translucent to nearly transparent. West Texas and the length of the Rio Grande.
- Graphite ore in schist rocks**. As are diamonds, graphite is pure carbon, but is extremely soft, black, and slippery feeling. Its best known use is, of course, as the writing medium in ordinary "lead" pencils, but it is also used as a lubricant, a pigment, and can endure the intense heat of smelting that would consume diamonds. Burnet County.
- Llanite** is a type of Texas pink granite found nowhere else in the world. Llanite's uniqueness results from crystals of sky-blue quartz mingled with the granite's rusty-pink feldspar and other minerals.
- Hematite**, an iron oxide ore, is abundant in Northeast Texas. Perhaps surprisingly, similar iron-ore specimens varying from black to steel gray may often be found in many other parts of Texas.
- Goethite**, another form of iron ore, is distinguished from hematite (number 44) by its higher water content. Smith County.
- Selenite** is among the more common minerals of Texas, but a host of impurities and conditions of formation produce an astonishing variety of shapes and colors. Jim Hogg County. Also see numbers 33 and 34.
- Calcite** is another common Texas mineral, ranging from transparent, rhomb-shaped crystals to specimens such as number 56, and types of travertine, number 59. Real County.
- Alibates flint** was prized by ancient man for tools and weapons. Quarried near Lake Meredith in the Texas High Plains for about 12,000 years, it was traded over much of North America.
- Texas' finest specimens of gem-quality **epidote** are found in Central Texas area between Fredericksburg and Llano.
- Novaculite** is a chalcadonic rock popular for whetstones when cut in slabs. Although usually opaque white, these samples illustrate the range of colors that may be found. Brewster County.
- Marcasite**, chemically identical to iron pyrite, has a different crystalline structure, but the two are often difficult to distinguish between. Common as nodules in limestone, Central Texas.
- Honey onyx**. Onyx is a name used for two entirely different stones. Agate banded with alternate dark and light colors is called onyx. True onyx is a much softer material related to marble. It may be either banded or solid colored (as the pictured specimen), is translucent, and is easy to carve. McCamey area of West Texas.
- Aragonite**, a member of the calcium carbonate group, is a relatively unstable mineral under ordinary conditions, and slowly changes to calcite over a period of time. Donley County.
- An **iron pyrite nodule** nestled in a **geode of saganite agate** lined with quartz crystals. The pyrite is from Central Texas, the geode from West Texas.
- Texas granites are among the most commercially used rocks in the state. Most popular are red and pink varieties, but many shades of gray are also quarried for architectural and monument use. (Although commonly called **gray granite**, these specimens are technically **diorite**.) Also see numbers 64, and 70 through 73.
- Another form of **crystalline calcite**. For more calcite varieties, see numbers 47, 59, and rhomboidal crystals on opposite side.
- Rare **vanadinite crystals**. Besides the ruby-red specimen pictured, vanadinite crystals also appear in reddish brown, brownish yellow and straw yellow. Terlingua area, Brewster County.
- Soapstone**, a combination of talc and other minerals, is soft and easily cut. Fire resistant soapstone lined the inside, or formed the mantle of many early Central Texas fireplaces. Blanco County near Johnson City.
- Travertine** is a water-deposited, calcite cave mineral, and can be of spectacular beauty in color and natural form. This polished yellow specimen is from a Burnet County cave.
- Sandstone**, a common sedimentary rock, is found in colors from virtually pure white to solid black. Formed of sand cemented by silica or iron oxides, some types are soft and easily abraded; others are virtually impervious to weathering, even tougher than granite! Rough and grainy to the touch. Lampasas County.
- Geode**. While commonly thought of as spherical, many irregular shapes contain cavities. Milky quartz lines this specimen from Jeff Davis County. Also see numbers 54, 62, 69 and 80.
- A characteristic of **limestone geodes** is that many have no apparent, definable shell. What appears to be a block of solid limestone may contain a void like this one, lined with calcite. Val Verde County.
- Texas' finest specimens of **gem-quality epidote** are found in Central Texas area between Fredericksburg and Llano.
- Typical example of **marble** from the Marble Falls area of Central Texas. Also see number 74.
- Texas is famous for **red and pink granites**, widely employed for architectural purposes. This finished specimen on the Capitol grounds in Austin displays the polish granite takes. Also see numbers 70 through 73 for more about pink granite.
- Quartz crystals**. Colors range from transparent to milky white, clear yellow, sky blue (see number 43, Llanite), rose, smoky, and any number of duller shades. Llano County.
- Tourmaline** is rarely found in Texas except as black or brown "needle" inclusions in quartz, illustrated by this specimen from Central Texas.
- Quartz, one of the Earth's most common minerals, is naturally plentiful throughout Texas. In myriad forms, it is found in igneous, metamorphic and sedimentary rocks. Pictured is a vein of milky quartz in **pink feldspar**, common in Central Texas.
- Sulfur** is one of Texas' most valuable minerals, usually mined by melting it underground with superheated steam and pumping the liquid to the surface where it cools and hardens. Huge subterranean deposits are in the Gulf Coast and West Texas regions.
- A **geode** with an agate rim with well-developed **quartz crystals**. Texas geodes range in size from as small as walnuts to as large as basketballs. Presidio County. Also see numbers 54, 61, 62 and 69.
- Granite domes** that outcrop in Central Texas is this one in Burnet County.
- Granite Mountain quarry** is the source of most Texas pink granite that has been used extensively for building, especially in Austin. The Texas Capitol was constructed of the material in the 1880s. The "mountain" is really only a moderate hill, but even a century of quarrying has barely reduced the visible bulk, and the granite extends thousands of feet under the surface! Near Marble Falls.
- Specimen of **natural pink granite** from Burnet County. Also see numbers 64, 71 and 73.
- Called **graphic granite** from the peculiar geometric inclusions that give the appearance of strange hieroglyphics. Llano County.
- Two more samples of **Texas marble**. One looks like man-made terrazzo, but it's natural! Burnet County. Also see number 63.
- Tektites**, in Texas classified as **bediastes**, are rare globes of dark-colored natural glass that often show the heat pits and molten surface flow typical of objects that passed through the atmosphere at extreme speed. Marble-sized to one inch in diameter. Washington County.
- Texas serpentine**. Blanco and Gillespie Counties.
- Although relatively soft, **Texas serpentine** takes a beautiful lustrous polish. It is widely used for terrazzo floors, decorative objects and as Verde antique wainscot in office building and hotel lobbies.
- Cinnabar** is the name for mercury ore, once mined extensively in the area around Terlingua, West Texas. High grade ore is heavy, dark red or yellowish red, and shiny or lustrous. Lower grades are duller and earthy, and some may appear only as a red wash on other rocks. Brewster County.
- Separian nodules**. Dark interior areas of this specimen are hematite, and the white "dividers" are aragonite. From the Bosque River area near Waco.
- A **thunder egg geode** from West Texas, lined with banded agate. "Thunder egg" is a fanciful name for geodes believed to have formed as a result of volcanic action. Also see numbers 54, 61, 62 and 69.