

MAGS EXPLORER



Memphis Archaeological and Geological Society Youth Newsletter

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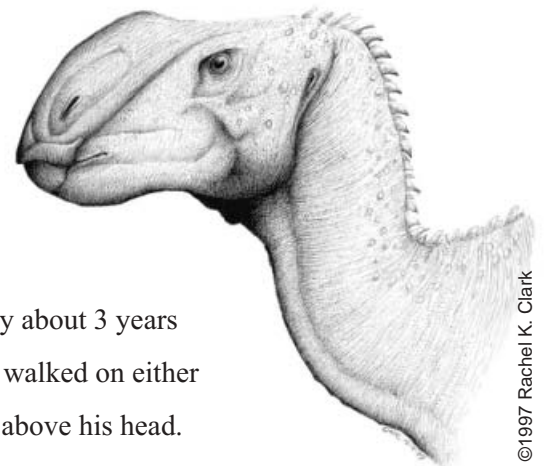
Leonardo, a teenage Brachylophosaurus, has been found in Montana. The neat thing is, Leonardo is a “mummified dinosaur” fossil. We can see his skin, muscles, foot pads, and even his beak!

The hadrosaur group, of which Brachylophosaurus [‘short-crested lizard’] was a member, is known as the “duckbill dinosaurs.” The Brachylophosaurus had a small duck bill, or beak. One of the neatest features of the Brachylophosaurus is the solid crest [for which it is named] or shield of bone that ran from its snout to the top of its flat head and ended in a short spike..

Leonardo lived about 75 million years ago. When he died, he was only about 3 years old [just a kid]. He was a plant-eater, about 22 feet long and he probably walked on either his back legs or all four legs. He used his long arms to reach high leaves above his head.

Less than one-tenth of one percent of all dinosaur fossils ever found have had tissue parts or scales, but Leonardo’s skeleton is 90 percent covered in soft tissue, like skin, muscles, nail material, foot pads, and even a beak. That means that Leonardo is an incredible find. In fact, he is so incredible that scientists can even tell what he ate for his last meal. The contents of his stomach are so detailed that scientists can tell that he had a nice, healthy salad made up of ferns, conifers and magnolias.

Of course all this good stuff [all the skin, the muscles, the tissues, and his healthy salad] were replaced with minerals millions of years ago. So Leonardo is not a “mummy” like the Egyptian mummies you read about in school. Leonardo is a “mummified” fossil. His remains are still a fossil, like all other dinosaurs. The difference is, Leonardo is more than just bone. He’s skin and bone, and a whole lot more. *Visit www.montanadinodigs.com for more information.*



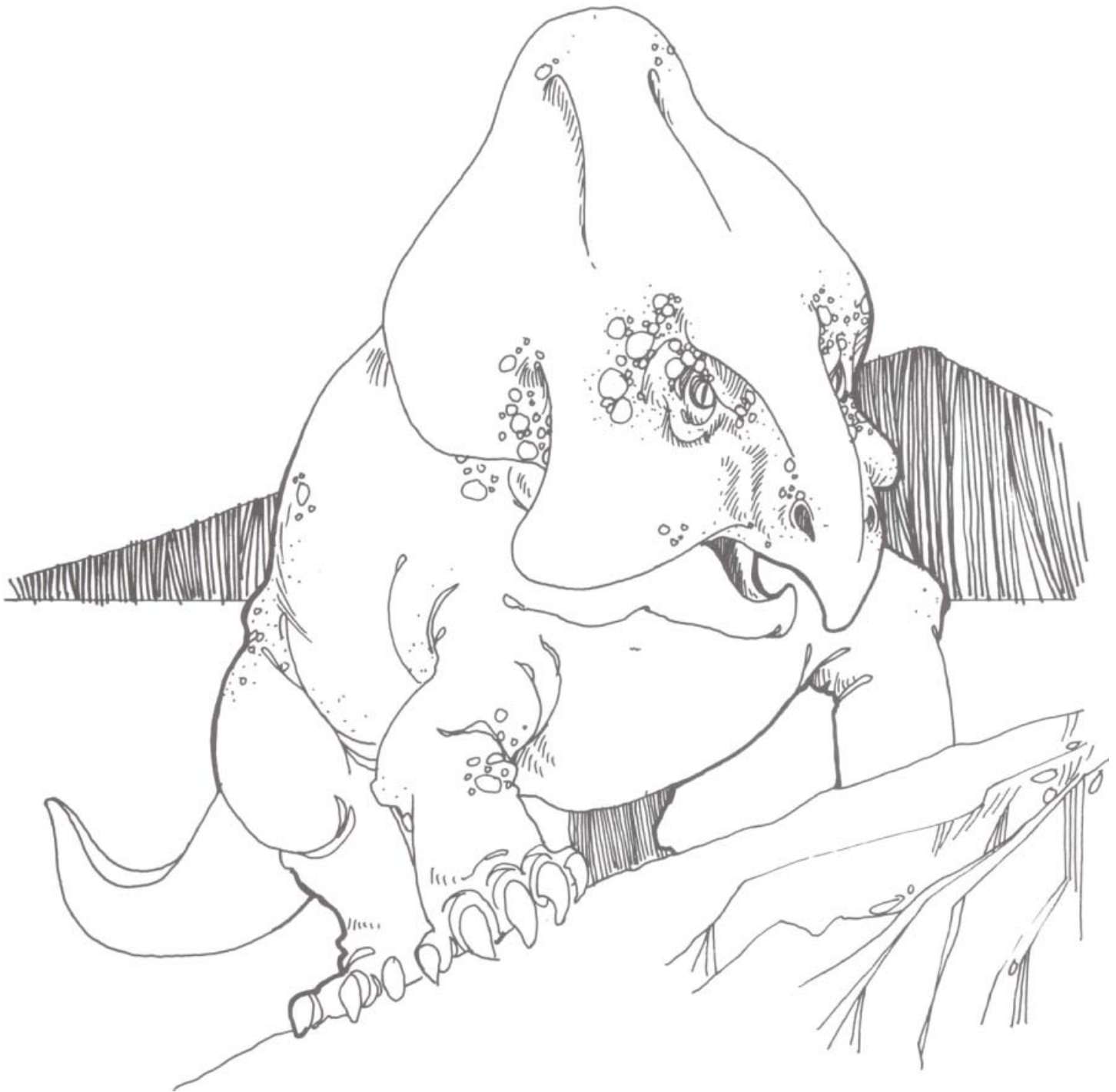
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MAGS Explorer is published monthly by and for the youth members of the Memphis Archaeological and Geological Society. Please send your comments and articles to Editor Mike Baldwin, 367 N. Main St., Collierville, TN 38017, rockclub@earthlink.net. Youth can give articles, artwork, poems, puzzles, experiments, or stories to co-editors Jennifer Baldwin, Emily Randolph, Kelly Baldwin, or Abbey Randolph.

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COLORING PAGE



PROTOCERATOPS was one of the earliest members of a group of dinosaurs called *ceratopsians*, which arose during the Cretaceous times. This group was characterized by a relatively enormous skull with a parrot-like beak. The skull extended backward into a bony frill, which protected the neck and furnished a point of attachment for powerful jaw muscles. These muscles enabled the ceratopsians [who were herbivores] to crop the toughest foliage. Protoceratops ["first horned face"] was 6 feet long and weighed about 400 pounds. Many skeletons and eggs of this dinosaur have been found in Mongolia.



EARTH SCIENCE EXPERIMENT

BUBBLES

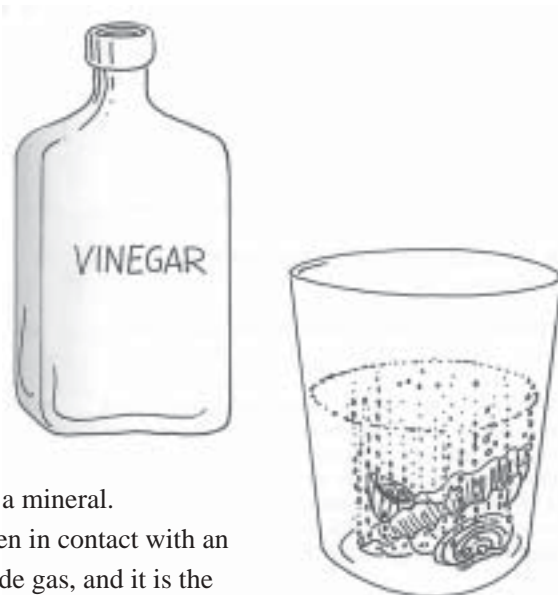
Purpose: To demonstrate a positive test for limestone.

Materials: 3 seashells
vinegar
glass

Procedure: [1] Fill a glass one-quarter full with vinegar.
[2] Add the seashells.

Results: Bubbles start rising from the seashells.

Why? Vinegar is an acid and seashells are made of limestone, a mineral. Limestone chemically changes into new substances when in contact with an acid. One of the new substances formed is carbon dioxide gas, and it is the bubble of this gas that are seen rising in the glass of vinegar. Acid can be used to test for the presence of limestone rocks. If limestone is present in a rock, bubbles form when an acid touches the rock.

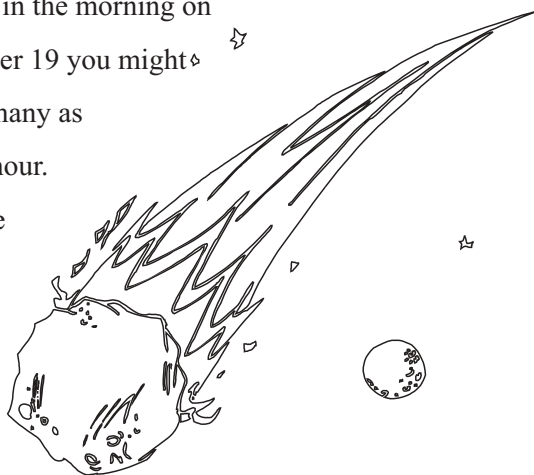


Janice VanCleave, *Earth Science For Every Kid: 101 Easy Experiments That Really Work*; John Wiley and Sons, Inc.; New York New York; 1991. Reprinted for educational purposes under the "fair use" provision of the United States Copyright Act of 1976.

STAY UP LATE [if you can] and watch the Leonid meteor shower

Around 2 o'clock in the morning on
Tuesday, November 19 you might
be able to see as
many as
2000 meteors an hour.

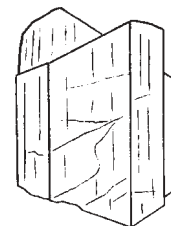
Let's hope that the
full moon won't
block our view
of the meteors.



FELDSPAR

Feldspar can be
white, yellow, pink or
other colors.

Turn the page and cut out
the Feldspar Specimen
Card for your collection.



MAGIC DRAGON

People have been digging up dinosaur bones for thousands of years but didn't always know what they were. The Chinese once thought they were dragon bones with magical properties.



GEOLOGY CHALLENGE

The elements and minerals that constitute earth

The primary components of earth are rock, water and air. Rock is an aggregate, or mixture of minerals. A mineral is a naturally occurring solid substance that has a uniform composition and a crystalline structure. There are many kinds of minerals, and they are differentiated on the basis of their crystal structure, hardness, relative density, luster, color, and by how they break. Substances without definite compositions or characteristic crystalline structures are not considered minerals, for example, opals are amorphous solids. Minerals are composed of elements. An element is a simple substance that cannot be broken down into other substances by chemical processes. There are 88 elements found in nature. Others have been created by scientists. There are only 20 common elements, and 8 of them make up 99% of the earth: [1] oxygen—46.6%; [2] silicon—27.7%; [3] aluminum—8.1%; [4] iron—5%; [5] calcium—3.6%; [6] potassium—2.6%; [7] magnesium—2.6%; [8] sodium—trace.

CHECK IT OUT

- The two most abundant elements in the earth's crust are:
 - [a] oxygen and silicon [c] silicon and aluminum
 - [b] oxygen and aluminum [d] iron and aluminum
- Minerals are solid substances that are:
 - [a] crystalline in structure [b] uniform in chemical composition
 - [c] inorganic [d] all of the above

Michael Bentley, *High School Review: Earth Science*; Princeton Review Publishing, L.L.C.; New York New York; 1998.
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Sign up tonight
for the November field trip to
Birmingham Ridge, Mississippi

The MAGS November Field Trip will be to Birmingham Ridge near Tupelo, MS on November 23, 2002. I hope you and your family are planning to go on this one, because you will definitely come home with a carload of Cretaceous fossils [and dirty clothes]. Take a chance.

NOTES FROM THE MEETING

Name:	Feldspar $K[AlSi_3O_8]$
Hardness:	5-6
Fracture:	conchoidal, brittle
Streak:	white
Lustre:	vitreous, pearly
Crystals:	monoclinic, triclinic
Location:	Trout Creek Pass, Colorado

- What is the name of the November Specimen-of-the-Month?

- Cut out the specimen card and put it with your mineral specimen.
- Write down a few things you learned about fossils tonight.

This is your newsletter. Put your name on it, and take it home with you.

Your Name _____

