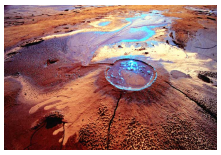
15 August 2007

By: Stefan Anitei, Science Editor



Mud volcano at Berca (Romania)

What's a Mud Volcano?

The cold volcanoes

A mud volcano has nothing to do with the proper volcanoes. Mud volcanoes appear mostly when gas pockets or gas deposits associated with oil manage to seep to the surface, transporting water mixed with solid material (mud, made mainly of clay and sand). Of course, these volcanoes are not hot at all, on the contrary, they can have temperatures that almost reach the freezing point. Their relief stands for 2-3 years, compared to tens of thousands of years in the case of the real volcanoes.Still, the largest mud volcanoes have a diameter of 10 km (6 mi) and are 700 meters (2,300 ft) tall. But most of them have surfaces of tens of square meters to several hectares. About 1,100 mud volcanoes have been detected on land (700) and in shallow water, but there may be much more than 10,000 on continental slopes and abyssal plains.In Europe, mud volcanoes are found on the Kerch Peninsula (southeastern Ukraine) and northern Apennines and Sicily (Italy). Easily accessible are the mud volcanoes of Berca (Buzau, Romania) close to the Carpathians.300 out of the world's 700 known mud volcanoes are located in Eastern Azerbaijan and the shores of the Caspian Sea. A 2001 eruption 15 kilometers (9 mi) from Baku spewed flames which were 15 m (45 ft) tall. Mud volcanoes are also found in the mountains between Iran and Pakistan, China's western Uyghur province, Arakan Coast (Myanmar) and nearby Andaman islands and South Taiwan.In America, ground mud volcanoes are found in the Wrangell Mountains (Alaska), California, southern parts of the island of Trinidad, eastern Venezuela and Columbia. In Venezuela, cows from the llanos (savanna) often lick the dried mud for its salt, a necessary component of their diet. [img=2]Mud volcanoes can be found in regions where there are active volcanoes (like Italy and US), but most of them are simply linked to the presence of oil deposits, in anticlinal folds. These deposits contain gases under pressure that seep to the surface along some breakage lines called crevice. The gases take with them water and materials from the underground which are deposited to the surface under the form of mud cones, up to 10 m (30 ft) high. These materials usually contain clays and sands soaked in oil, lime fragments, sand stones and gypsums from profound layers, not visible on the surface, sometimes from 3,000 m (10,000 ft) depths. The hydrocarbons usually give to the mud a dark gray, sometimes purple hue. When dry, salt can give it a whitish color. The cones emit constantly or from time to time viscous streams, from which gas bubbles emerge (usually, methane makes 86 %, the rest is carbon dioxide and nitrogen), that seem to boil, even if the gas' temperature does not go beyond that of the environment (or if they do, just by 2-3 oC). Mud volcanoes linked with lava volcanoes emit incombustible gases like helium.In some cases, the gases come across salt and the terrains around the "volcanoes" get salty, lacking vegetation, with a moon-like landscape. The landscape of the muddy volcanoes plateaus constantly changes, as periodically new cones emerge, while old ones stop their activity, because of the changes in the pressure and circulation of the gases along the crevices and the amount of available water to be drained to the surface. The rainfalls also constantly carve a muddy volcano plateau. [img=3]Earthquakes, too, can inflict important changes in the structure of a muddy volcano, as they perturb the disposition of the underground layers, accompanied by the modification of the crevices. In some cases, earthquakes even activate new volcanoes or reactivate old ones. Sometimes, human activities can cause the emergence of mud volcanoes. Recently, on the Java island (Indonesia) a new hybrid thermal/mud volcano emerged, flooding with material about 10 square kilometers (which are now uninhabitable) and displacing 11,000 people, was triggered by a commercial gas drilling. The drilling, at more than one mile (1.6 km), broke off a highly pressurized pocket of hot gas and water which made itself way out to

Copyright (c) 2001-2009 Softpedia. All rights reserved. Softpedia™ and Softpedia™ logo are registered trademarks of SoftNews NET SRL.

the surface in a bed of porous limestone.Since May, 2006 the volcano spited off around 163,000 cubic yards of sediment (about 50 Olympic swimming pools). The smelly mud has swallowed till now four villages and 25 factories, with damages over $420 million by March 2007.A similar accident took place offshore of Brunei in 1979.One detail: The Yellowstone National Park's Mud Volcano is in fact a thermal spring, not a true mud volcano.

Copyright (c) 2001-2009 Softpedia. All rights reserved. Softpedia™ and Softpedia™ logo are registered trademarks of SoftNews NET SRL.