

FASCINATING ROCK MUSIC INSTRUMENT

■ Michael Thompson

When we think of an organ used to play music, the picture that comes to mind is something looking like a piano connected to large pipes in an old church. But visitors to the Luray Caverns cave system in Virginia, USA, can see a different type of manmade organ (fig. 1). The notes don't come from air being blown through pipes of differing length, as in a church pipe organ. Instead, it operates more like a piano.

In a piano, little hammers strike strings with different length, thickness, and tension, creating different notes. In this cave instrument, the hammers strike individual *stalactites*. These are the long, pointy structures which grow down from cave ceilings. The round-topped mounds growing up from the floor are *stalagmites*. Both consist of *dripstone*, formed from the water slowly dripping from the cave ceiling, carrying dissolved calcium carbonate from the limestone in the cave surrounds. The drops evaporate, depositing the mineral at the tip of a stalactite or on the top of a stalagmite. When they meet in the middle they often fuse to become *columns*. Collectively such cave decorations are known as *speleothems*.

When struck, a stalactite vibrates (resonates) with its own particular frequency. This frequency, and thus the note produced, depends on things like the length, thickness, shape, and density of the stalactite. (See 'How the stalactite organ works', p. 13).

Eons and eons?

A musician who had the privilege of playing the organ said, "You can hear the eons and eons and eons of time that were needed to create this thing."¹ Stalactites in caves can certainly be old, but does that mean 'eons'?



Fig. 1. Called the Great Stalacpipe Organ, this one-of-a-kind instrument has been described as an 'electrically actuated lithophone'.



HOW THE STALACTITE ORGAN WORKS

The piano-like part of the organ is made like most organs, with keys and pedals. The keys control small hammers driven by solenoids, which are each positioned next to carefully selected stalactites throughout the cave (fig. 3). When one of these little hammers strikes a stalactite, the stalactite produces a sound of a particular note. Each stalactite was chosen for the specific note it produces. Some were even cut to length to ensure the correctly tuned note. The stalactites chosen were also inactive (not growing anymore), so as to prevent the notes changing over time with growth.

Some stalactites produce more volume than others when struck, plus they are at varying distances from the organ. So pickup amplifiers were installed at each one. The sounds from these pickups are balanced before being fed through speakers. That way all the notes are heard by musician and onlookers at comparable volume.



Fig. 3. Organ solenoid mechanism

such as “400,000+ years old” as we often hear?¹

The Luray Caverns (fig. 2) were first discovered by a hunting party in 1878. The organ was constructed later, from 1954 to 1957, by mathematician Leland W. Sprinkle.¹ But the speleothems in the cave are of course significantly older.

How old?

So how old are these stalactites? By measuring how fast they are growing today, and assuming constant growth rate, attempts are made to estimate the age of a stalactite of certain volume and length from this measured rate (see ‘Calculating stalactite age?’, p. 14). In this way, ages of tens of thousands and even hundreds of thousands of years can be calculated. But the stalactites cannot predate the Great Flood. For one thing, the limestone within which caves are found was clearly deposited in the Flood and generally contains marine fossils.² The caves came later. For another, a global flood would have demolished any pre-existing caves and their decorations. So, the stalactites must be younger than 4,500 years, the approximate time since the Flood.

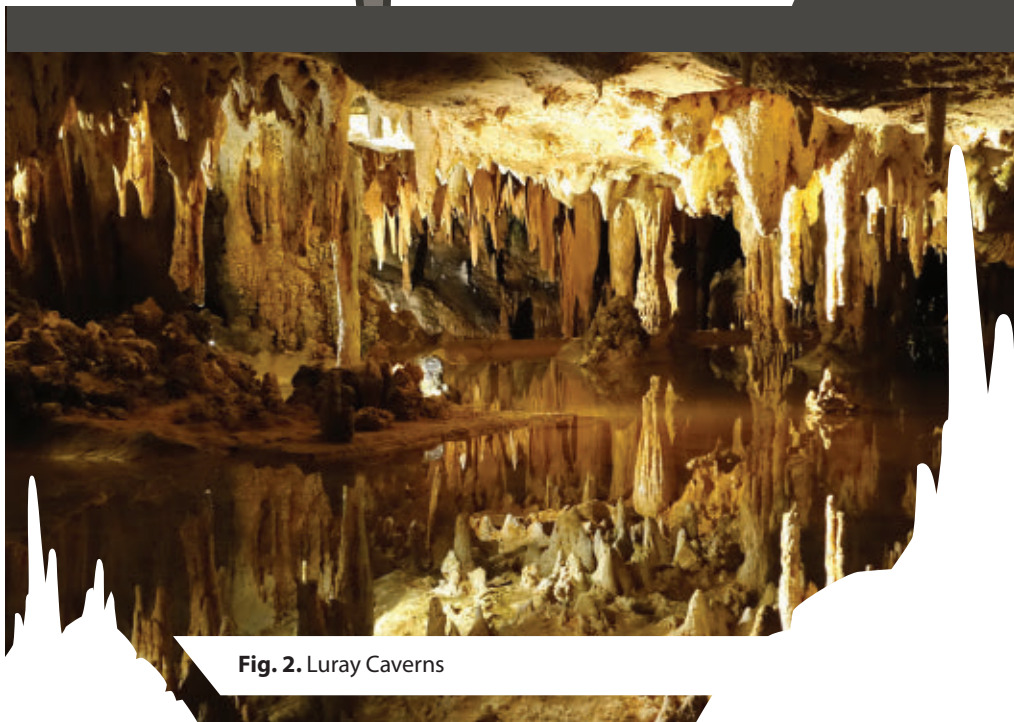


Fig. 2. Luray Caverns

CALCULATING STALACTITE AGE?

At first glance it seems reasonable to calculate the age of a stalactite using the total length of the stalactite, and the measured growth rate. For example, some stalactites in the Luray Caverns are reported to have a growth rate of 16 cc (1 cubic inch) per 120 years.¹ If we assume most of that growth is at the tip of the stalactite, and somewhat cubic in shape, then that is about 2.5 cm (1 inch) of vertical growth every 120 years, or 0.21 mm (0.0083 inches) per year. Some of the largest stalactites in the Luray Caverns are about 15 m (600 inches) long. Therefore, assuming that the growth rate has been constant, the stalactites would have taken approximately 72,300 years ($600 \text{ in} \div 0.0083 \text{ in/year}$) to reach their current length.

But there is an obvious problem with this assumption. Growth rates of stalactites are governed by a number of factors which vary over time, such as local rainfall, overhead

soil composition, cave temperature, and relative humidity of caves, to name just a few.² These variables can be vastly different in differing climates and locations such that even today, growth rates can be significantly faster. Some stalactites in other caves have been measured to grow as fast as 2.5 cm (1 inch) per year³—120 times faster than the current Luray Caverns average growth rate. At that rate, it would take only 600 years to grow a 15-metre stalactite. And these rates were likely significantly greater under conditions in the post-Flood Ice Age, as pointed out in the main text.

Most stalactites today are actually dated by geologists using radiometric dating methods such as uranium-thorium (which have their own problems⁴). Interestingly, these dates often contradict dates estimated by using steady growth rate calculations, by being way too *old* in comparison.⁵

1. Muller, ref. 1 main text
2. Oard, M., Rapid growth of caves and speleothems: part 2—growth rate variables, *J. Creation* 34(2):90–97, 2020; creation.com/speleothems-2.
3. Meyers, S. and Doolan, R., Rapid stalactites, *Creation* 9(4):6–8, 1987; creation.com/rapid-stalactites.
4. Chapter 4, Batten, D (Ed.), *The Creation Answers Book* (11th edn), CBP, 2025; creation.com/s/10-2-505.
5. Silvestru, E., Caves and age, *Creation* 34(1):46–48, 2012; creation.com/caves-and-age.



Forming caves

The biblical Flood deposited many layers of rock, including limestone. Within the limestone, many underground cracks were formed from factors such as tectonic movements. These underground cracks were likely further enlarged by sulfuric acid dissolving the limestone in those cracks—a rapid process. Evidence for sulfuric acid having formed caves was first presented by secular researchers in the 1970s.³

During the Ice Age after the Flood, speleothems such as stalactites would have begun growing from the dripwater in these caves. Their rate of growth would have been greatly enhanced by the much wetter Ice Age climate known to have prevailed.^{4,5}

So, large stalactites, such as those in the Luray Caverns, did not reach

their present size because of tens or hundreds of thousands of years of steady growth. Rather, the stalactites likely grew close to their full size within only about 500 years after the Flood, during the Ice Age. Even today, given the right conditions, particularly sufficient moisture, stalactites have been observed to form *much* more rapidly than the current average growth rate in Luray Caverns.⁶

Conclusion

The Luray Caverns and their spectacular speleothems are indeed very old, but not ‘eons’ or tens/hundreds of thousands of years old. Rather, they are a relic of the catastrophic impact of the Flood and the conditions of the post-Flood Ice Age, some 4,500 years ago. ■

References and notes

1. Veritasium, This is the oldest, weirdest instrument on Earth, Jan 2025; youtu.be/rjXZzB5bUAo. The video explains the physics of the organ sounds and the cave really well, though of course accepting secular (uniformitarian) geology. Unfortunately, there is a mention of the Lord’s name in vain.
2. Limestone, geologyscience.com (sub-heading ‘Fossil content of limestone’), updated 21 Oct 2023.
3. Oard, M., Rapid growth of caves and speleothems: part 1—the excavation of the cave, *J. Creation* 34(1):71–78, 2020; creation.com/speleothems-1.
4. Oard, M., Caves, stalactites, and other cave formations, *Creation* 44(1):48–51, 2022; creation.com/cave-openings-speleothems.
5. Oard, M., Rapid growth of caves and speleothems: part 3—Flood and Ice Age variables, *J. Creation* 34(2):98–104, 2020; creation.com/speleothems-3.
6. E.g., see Livesay, G., Mollie Kathleen’s marvellous mysteries, *Creation* 23(3):44–46, 2001; creation.com/mollie.

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