

Blue Hole Cave
By Charles Bishop NSS 9355,
Martin Hackworth, and
Don Pollock NSS 14653

Blue Hole is a challenging, very wet stream cave with two miles of surveyed passage. It was first investigated by the Blue Grass Grotto in the summer of 1972, and surveyed during the following year; it was later learned that the cave had been previously explored and named by the Berea College Cave Club.

The cave has two entrances, though both are crawlways.

The Sink Entrance, draining water from a small valley, begins as a reasonably comfortable crawl but after about 500 feet becomes miserably wet, with a considerable quantity of washed-in organic debris. There are a few upper leads along the way, but all are choked by breakdown. The crawl emerges in a canyon-domepit complex, where several climbs are required to reach the lower level. The cave then continues as several hundred feet of walking passage to the Room of the Gods. Beyond this room, the passage is high and narrow and essentially featureless save for a few loops, and gradually becomes higher and higher until it separates into overlying levels.

The canyon intersects eventually with the main stream passage, where the majority of the cave is found. Between the upstream resurgence and the final sump is over a mile of cave in a single long stream passage, mostly low walking or stoopway with water from wall to wall. Some 2,000 feet upstream from the T-intersection is the resurgence and the Junction Room; beyond is the submerged connection to (presumably) Pine Hill Cave. Several thousand feet downstream from the intersection, the passage breaks into a multi-level complex of mainly crawlways. In this complex are several large rooms, of which perhaps the most notable is Commonwealth Stadium.

The cave stream continues a short distance further to a sump, emerging in a rise pool at the base of a cliff directly below an upper level entrance and thence flowing aboveground for about a mile and a half to vanish into Sinks of the Roundstone Cave. Overlying the stream passage and interconnected through holes and fissures is an upper level crawl that leads to the second entrance, a belly crawl.

On the basis of observational data made from the Mount Vernon Geologic Quadrangle Map, and field work in the area of the resurgence, Blue Hole Cave lies within two lithologic units, the Ste. Genevieve and Upper members of the Newman Limestone, Mississippian in age. The Upper Member here is about 160 feet in



The Blue Hole Spring, emerging from the base of the bluff about 30 feet below the Upper Entrance. Note the submerged cave passage visible in the crystal-clear spring. Photo by Steve Brown.

thickness, and an estimated 75 feet for the Ste. Genevieve; the base of the Ste. Genevieve is not exposed in the vicinity of Blue Hole.

Most of the field work was done at the resurgence. It was found that this portion of the cave was developed in the contact of the Ste. Genevieve and the Upper Newman, the basal Upper Newman forming the ceiling of the cave. From elevations taken at key stations throughout the cave it was determined that nearly all of Blue Hole, excepting the sink entrance and Commonwealth Stadium, lies within the Ste. Genevieve.

Blue Hole Cave may hold the key to a large drainage system in the area between Pine Hill Cave to the west and Sinks of the Roundstone to the east. Connections to these caves are hypothetical at present. The volume of water present in the cave stream during the fall indicates that the stream is carrying drainage from a large area. A description of the stream in September at a shallow point would be six feet wide and six inches deep, flowing at a rate of several feet per second.

Exploration in the cave has been done only in the dry seasons. Long pools with little air space, four to six inches, must be traversed on each trip. The average stream passage dimensions are 15 feet wide and 4 1/2 feet tall, with 3 to 3 1/2 feet of water. As there are numerous points where a water rise will siphon the passage, **THIS CAVE SHOULD ONLY BE ATTEMPTED DURING DRY WEATHER!** It is definitely a cave for the hard-core caver.

An interesting set of trips might be to examine each of the three consecutive stream caves in turn; Pine Hill, Blue Hole, and Sinks, following this major cavern drainage system. Each cave has its own distinguishing passage characteristics.