THE CARTOGRAPHY OF BETHLEHEM CAVE, S.D.
with a historical gazetteer

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Bethlehem Cave, located about twenty miles northwest of Rapid City, is one of the largest caves in the Black Hills. The cave was discovered in 1885 and operated commercially as Crystal Cave from 1891 to 1952. In that year, the owner Loui Storm donated the cave and the surrounding land to the Benedictine Fathers of Conception Abbey, Missouri. The natural entrance to the cave was converted into a Shrine of the Nativity and the cave was renamed Bethlehem. It is still open to the public.

In 1968, Henrisey and Forney described the geologic development of Bethlehem Cave, while Forney (1968) recounted the cave's colorful history. Although Todd (1894) mentioned Crystal Cave in the initial Bulletin of the South Dakota Geological Survey, the first description of the cave was by Louella Agnes Owen (1897, 1898). She spent two days in Crystal Cave and devoted two chapters of Cave Regions of the Ozarks and Black Hills to her visit. In 1904, Edmund Otis Hovey, Horace Hovey's only son, visited Crystal Cave and described some of its geologic features.

C.C. O'Harra, the President of the South Dakota School of Mines, described a 1915 school trip to the cave. He listed many names of rooms and features in the cave that he apparently took directly from Owen's book. At that time, one of the requirements for a bachelor's degree in geological engineering at the School of Mines was to map a mine. One of the students, J. Harlan Johnson, now Emeritus Professor of Geology at the Colorado School of Mines, chose to map a cave, Crystal Cave, instead. In 1919, he wrote a thesis entitled "A description of Crystal Cave" that included a cave map showing about 9,000 feet of passage.

Johnson's map is published here for the first time. The plan is crude by modern standards because it gives no indication of passage heights or widths. Individual passages were not mapped, but instead the plan shows trails that run from chamber to chamber and criss-cross major rooms. The map shows the entire known extent of the cave and is still the only available map of the cave's undeveloped regions.

The commercial sections of Bethlehem Cave comprise much of the lower half of the map south of the Notre Dame. Although the rest of the cave is very attractive with calcite crystal-covered walls and areas of flowstone and dripstone, it is rarely visited. This version of Johnson's map has been redrafted and it incorporates corrections and additions made by Father Gilbert Stack OSB in 1959 and by Brother Hilary Henrisey OSB in 1964. However the scale on the map should read 1" = 128" rather than 1" = 53". There is one conspicuous error. The passage marked "Lakes Region" should be attached to the passage immediately north of the Bridal Veil.

In addition to his unpublished bachelor's thesis, Johnson wrote two articles on the mineralogy of Crystal Cave (1919b, 1920). He also briefly described the cave in a general article on the caves of the Black Hills (Johnson and Snyder, 1920).
A second map of Crystal Cave was surveyed on December 5, 1930 by parties unknown. The map is only a transit line and it also shows no passage heights or widths. The map covers only the area between the artificial entrance and the Lake Room which is a large part of the commercial route. The transit survey does permit an accurate determination of the depth of the cave and it shows that the Lake Room is 140 feet below the artificial entrance. In the early 1960's, this map was printed and distributed by the Shrine of the Nativity with the legend: "Plat showing traverse in portion of Bethlehem Cave."

In 1940, Frank Neighbor wrote a master's thesis for the University of Colorado on the caves of the Black Hills. During his 1938 field work he made a modern-style compass and tape survey of the commercial part of Crystal Cave. Neighbor's map (1940) has been widely reprinted in N.S.S. publications including the 1962 Convention Guidebook and Henrisey and For Forney (1968).

None of these three maps is really adequate by modern standards. Further Klondike and Klondike, two sections of Bethlehem Cave shown on Johnson's map have not been visited or relocated for many years. There is also some potential for new passage like the Canadian Room which was discovered during the early 1960's. Father Gilbert Stack, OSB would welcome a serious group interested in mapping the cave.

Literature cited


(The writer thanks Mr. Gregory T. Wood for photographing and reproducing the map.)

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HISTORICAL GAZETTEER

This gazetteer is designed to accompany J.H. Johnson's (1919a) map of Bethlehem Cave. The letter "O" with a page number refers to names of rooms and features mentioned by Owen (1897), while "J" refers to features described in Johnson's thesis. The features that appear on the accompanying map are denoted with an asterisk (*). It is possible to reconstruct Miss Owen's trips through Crystal Cave by using her book in concert with this gazetteer and the Johnson map. Modern names added to the map since Johnson's work include Bethany Cave, Canadian Room, Columbian Cave, Devil's Pit, Duck's Nest, St. Benedict Grotto, Shrine of the Nativity and Sonora Room. A few of the features that Owen mentioned have not been relocated, but most of them could be found in a careful remapping of the cave. Many of the names given in Owen (1898) are listed without any description by O'Harra (1915).

Abode of the Fairies (O:189). Chamber containing Tower of Babel.

Altar (O:184). Same as Russian Cathedral.

Baked Bean* (J:8)

Beaver's Slide. (O:183). From Statuary Hall to the Catacombs.


Big Lake*. (J:6). "The end of the route as usually travelled."

Bridal Chamber. (O:181). Probably President's Chamber at entrance to Fat Man's Misery*. "The way out is decidedly more rough and difficult than that by which entrance is effected."


Bunker Hill*. (O:182, J:7). North end of Poverty Flat*. 90
Butcher's Parlor* (J:5).

Butcher's Shop* (J:5).

Cactus Chamber (O:183). May be Slab Rooms*.

Catacombs (O:193).

Cathedral* (J:8).

Chimes* (O:188, J:6).

Coffin's Gallery (J:7). Between Notre Dame* and Devil's Pit*.

Council Chamber (O:184). ditto.

Crystal Flat (O:186). Red Flat*.

Crystal Lake (O:187). Big Lake*.

Dry Lake (O:187). Dry Lake not shown on map, but in Lakes Region.

Eagle (J:6, 7). At head of Rip Van Winkle's Stairway*.

Fat Man's Misery*. (O:182, J:5). O: "Leads from Bridal Chamber to Big Room."

First Water* (J:6).

Frozen River (J:6). Near Bridal Veil*.

Further Klondike (J:9). Also called Lower Klondike.

Government Room (O:190). "On the main tourist route".


Gypsy Camp (O:185). First Water*.

IXL Room (O:183). Beyond Rocky Run.

Jack Frost Streak (O:190). Between Slab Room and Mold Ladder.

Klondike* (J:9).

Lake Room (O:186). Lakes Region*. (Improperly placed on Johnson's map.)

Lion's Den (J:6). South of Red Flat.

Lost Man's Paradise (O:181). Alcove off President's Chamber.

Mold Chamber (O:190).

Mole Ladder (J:8). Between Gargoyle Hall* and Diamond Fields*.

Moonlight (J:7). Room at base of Bunker Hill*.
Needle's Eye (O:183, J:8). Passage NW of Bunker Hill* that goes to Gargoyle Hall*.

New Zealand (O:190).

Niagara Room (O:201).

Notre Dame* (O:184, J:7). Named for "famous old cathedral in France".

Poverty Flat (O:182). Poverty Flats* (J:5).


Rainy Chamber (O:198). Diamond Fields*?

Rams Horn (J:5). In St. Benedict's Grotto*.


Red Flats* (J:6).

Red Room (O:184). Between St. Benedict's Grotto* and Fat Man's Misery*.

Reef Rock (O:182). Large rock at south end of Poverty Flats*.

Resting Room (O:180). Shrine of the Nativity*.

Ribbon Room* (J:8).

Rip Van Winkle's Stairway* (O:185, J:5).

Rocky Run (O:183, J:7). Runs north of Bunker Hill* to SE end Gargoyle Hall*.

Russian Cathedral (O:184). South of Notre Dame*.

Santa Claus' Pass (O:190). Discovered on Christmas Eve.

Senate Chamber (O:197). "A large room extending to Poverty Flat".

Senate Post Office (O:197). "An extension of the Senate Chamber."

Slab Room (O:189). Slab Rooms* (J:8). On route between Gargoyle Hall* and Diamond Fields*.

Spearfish Slide (J:6). Entrance to Lion's Den at south end of Red Flats.

Starr Chamber (O:197). Adjacent to Senate Chamber.

Statuary Hall (O:183). Gargoyle Hall*.

Suicide Room (O:197). Adjacent to Starr Chamber.

Suspension Bridge (O:193).

Tilolston Hall (O:184). North of Notre Dame. (continued on page 92).