

# Secret Passages

ROM high-tech X-ray clears the smoke in this “puzzle pipe” mystery

BY ARNI BROWNSTONE

**T**he ritual smoking of long-stemmed pipes has been central to the ceremonial life of the First Nations since before Europeans arrived in North America. It was a medium of communication with the spiritual world—a smoker’s prayers and petitions were carried with the ascending tobacco smoke to the Great Spirit.

The advent of European metal tools allowed Indian pipe-makers to create new forms of pipe bowls and stems. One of the most interesting of these is the so-called puzzle pipe stem made by the Dakota and Ojibwa beginning in the first half of the 19th century, six of which are held by the ROM.

A typical pipe stem had an air passage running down its centre, created by burning out the pith. But with the puzzle pipe, the stem was perforated by a series of cut-out motifs, thought to have symbolic meaning. Conceptually, the smoker’s prayer gains in strength as it passes by the pierced designs. But the cut-outs also created a sense of puzzlement about the location of the air passage—again adding to the pipe’s mystique.

To make these stems work, pipemakers would create an alternate route for the airflow. One way of doing this, noted several observers in the late 19th century, was to cut a channel along one side of the stem, then cover it by gluing down a thin strip of wood. Two holes were bored to make a dogleg connection from the side channel to the mouthpiece and the same procedure repeated at the other end. Once the stem was polished, incised, and painted, the smoke passage was extremely difficult to detect. Under close scrutiny, four of the ROM’s puzzle stems reveal side channels.

But the smoke passages on the remaining two stems were undetectable. The inspiration to determine their location at long last came in the form of the ROM Conservation Department’s recently acquired computed radiography digital X-ray detector. The machine would allow us to test a theory about another type of airflow passage. In 1832, artist/ethnographer George Catlin described a straight Dakota stem made from a crooked length of ash, in which the cleared pith created a crooked airway. The

Side-channel puzzle pipe stem ROM HD15A. Crooked pith puzzle pipe stem and bowl ROM HK926

carver calculated the meander of the airway, and cut out motifs around it. Viewers observing the stem’s straight sides would assume a straight air passage and wonder how there could be piercings without destroying the air passage. Catlin’s description had long been viewed with skepticism, partly since it was not corroborated by contemporary sources.

But Heidi Sobol, the ROM’s senior paintings conservator, was able to resolve the question by locating the air passages in the ROM’s puzzle stems using the new X-ray detector. The illustrations below, with X-ray-detected airways marked in red, clearly prove the existence of the crooked pith as well as the side-channel type of puzzle stem. o

**ARNI BROWNSTONE** is assistant curator in the Ethnology section of the ROM’s Department of World Cultures.

Visit [rom.on.ca/narrativepipes](http://rom.on.ca/narrativepipes) to learn more about First Nations pipes in Arni Brownstone’s article “Mysteries of the Sculptural Narrative Pipes from Manitoulin Island,” published in *American Indian Art Magazine*, Summer 2011.



**Left:** Pipe bowl, early 19th century, 9.5 cm long, carved sandstone. The bowl belongs with the crooked pith stem pictured below. The head-shaped bowl faced the smoker. A figure once decorating the back of the head is missing, and the crest on the bowl’s shank is fragmentary.

## TWO TYPES OF PUZZLE PIPE STEMS

In the pipe stem pictured at the top, measuring 84.5 cm long, the airway follows the path of the crooked pith, which was probably burned out with a hot wire. The apostrophe-like openings have an inner coating of red paint, no doubt to enhance their symbolic value. The wood was impressed with a hot file to further decorate the stem.

The stem in the bottom photo measures 79.4 cm long. Its air passage follows a channel along one side, hidden by a thin strip of wood. Blue, red, and green colours delineate the inner walls of the pierced motifs. The burnished look of the stem was probably achieved by applying heat.



**Left:** This puzzle pipe stem has a crooked pith airway. To connect stem and bowl, the projection at the end of the stem fits into the air passage in the shank of the pipe bowl.



**Left:** This puzzle pipe stem has a side-channel airway. The side with the channel is noticeably wider than the other side. The projection for connecting this stem to its bowl has broken off.