Division Of Geological Survey
HANDS ON EARTH SCIENCE
No. 13

PLAYING ROBINSON'S WALL GAME

by Joseph T. Hannibal, The Cleveland Museum of Natural History

There is probably a stone wall somewhere near you. The wall may be a fence or a foundation or other part of a building. Such stone walls can be fascinating geologically, especially if they are constructed of more than one kind of stone. For students at any level, they make excellent places for hands-on discovery.

Stone fences generally are made with local bedrock or, in glaciated areas, with local glacial erratics. In the case of buildings, many older structures are made of local stone; more recent buildings may be made of more exotic stones imported to the area for a particular project. In some cases, stone may have even been reused from other projects.

Eric Robinson, a geologist in London, England, has promoted the study of stone walls and other structures in Great Britain, devising exercises for those who might want to examine stone in cities and cemeteries. The techniques outlined here are adapted from Robinson's exercises ("Wall Games") first designed for cathedral precincts (including Gloucester, Ely, and Winchester) in Great Britain.

My favorite local stone wall for such projects is part of an old foundation in Cleveland, Ohio. This wall is now on the campus of Urban Community School. Two cornerstones can be found on the wall. They mark the dates of churches that once stood on the site, providing information on the time spans when this foundation—and its predecessor—were erected.

Several types of sandstone are used for this wall. Each of these stone types differs in color, weathering characteristics, and provenance (origin). The main stone used is a gray to beige sandstone that has medium-sized grains. Red, yellow, and purple sandstones also are used. The gray to beige sandstone is the famous Berea Sandstone, long quarried in northern Ohio. The red stone appears to be the Jacobsville Sandstone, shipped to Ohio from the Upper Peninsula of Michigan. The other stone types are more difficult to place.

Students can study such a wall by carefully sketching it, then noting color, grain size, sedimentary structures, weathering characteristics, etc. Alternatively, and to move the project along at a quicker pace, the instructor can provide a sketch of part of the wall, thus giving students more time for analysis. Eric Robinson has found, however, that too much detail is not good; a simple skeleton sketch, like that shown here (but larger in scale and covering a smaller area) is best. It should depict the outline of each

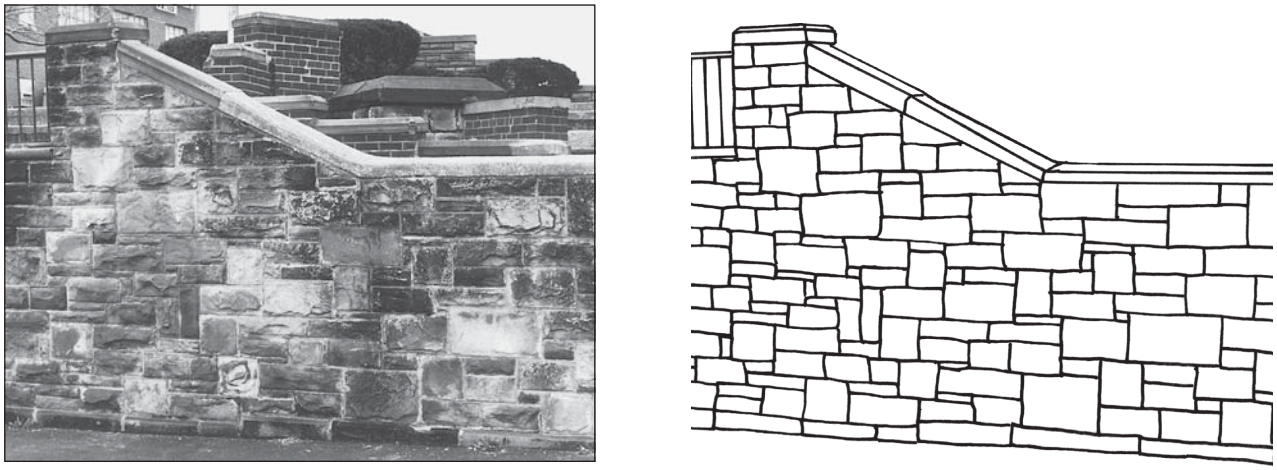

Photo of stone wall at Urban Community School in Cleveland, and a sketch of the wall.

block in the area of interest, enough so that the student may orient himself or herself. The easiest way to make such a sketch is to photograph the wall and trace the outlines of the stone blocks onto a sheet of tracing paper. The drawing can then be enlarged using a photocopier.

Younger students will enjoy coloring the blocks according to stone type using crayons; older students can use colored pencils or just pencil shading. Once the rocks are colored in, a key should be devised and notes on grain size and weathering can be jotted down on the diagram or in a notebook. Follow-up discussions in the field or the classroom can include simple comparisons of weathering characteristics or more advanced comparisons of grain size and composition among the stones. More good ideas on this topic and additional information on stone used for Ohio structures can be found in the publications listed below.

FURTHER READING

Hannibal, J. T., and Davis, R. A., 1992, Guide to the building stones of downtown Cincinnati: a walking tour: Ohio Division of Geological Survey Guidebook 7, 44 p.

Hannibal, J. T., and Schmidt, M. T., 1992, Guide to the building stones of downtown Cleveland: a walking tour: Ohio Division of Geological Survey Guidebook 5, 33 p. (Reprinted 1994 with additional notes.)

Melvin, R. W., and McKenzie, G. D., 1992, Guide to the building stones of downtown Columbus: a walking tour: Ohio Division of Geological Survey Guidebook 6, 33 p. (Reprinted 1997 with additional notes.)

Robinson, Eric, no date, The Gloucester Wall Game: London, Geologists' Association, 11 p.

Robinson, Eric, 1996, A version of "The wall game" in Battersea Park, *in* Bennett, M. R., and others, eds., Geology on your doorstep: the role of urban geology in Earth heritage conservation: Bath, The Geological Society Publishing House, p. 163-170.

Sandy, M. R., 1992, Geologic glimpses from around the world—the geology of monuments in Woodland Cemetery and Arboretum, Dayton, Ohio: a self-guided tour: Ohio Division of Geological Survey Guidebook 8, 29 p.

Acknowledgments: Thanks are due to Michael Sandy, and, especially, Eric Robinson, for references and other information.