INTRODUCTION

This brief history does not attempt to cover all of the significant geological concepts, breakthroughs, and milestones that have occurred over more than a century of work or mention all of the contributors to the many investigations on Illinois geology. Despite the selectivity, it is hoped that the reader will obtain a sense of the direction of history and understand some of the driving forces behind the geological investigations in Illinois, driving forces that began with the needs of our earliest ancestors, the paleoindians, who needed to understand their surroundings simply to stay alive and defend themselves.

Economics and the concerns for economic development have driven many of the investigations that occurred since the 1800s. Wars and disasters had major impacts. The Great Depression in the late 1920s and early 1930s, the socioeconomics of the 1960s, and decades of environmental legislation took geology in distinctly new directions. Changing technologies and computerization influenced research studies by expanding the kind of information that could be gathered, enhancing its quality, and increasing the value and impact of the geological information obtained and shared with the Illinois public.

Peer motivation has been a strong incentive throughout time. Multidisciplinary studies began to be emphasized during the 1930s and team dynamics during the 1970s. Multiple authors and interdisciplinary involvement increased throughout the 1980s, 1990s, and into the twenty-first century. Despite this major trend, individual creativity and individual contributions have continued to play a dominant role throughout history.

Illinois institutions and their leaders have also exercised a profound influence on the nature and direction of geological investigations (Figure 1-1). During the last 50 years, scientific protocols, legislation, and regulations have had major impacts on the nature and direction of investigations of Illinois geology. Finally, public funding sources have always controlled in part the amount and type of work done on Illinois geology, but the importance of state and federal government grants and contracts has grown substantially since the 1970s.

Earliest Beginnings: Prehistoric Times to 1805

Native Americans and Their Ancestors

The paleoindians and Native Americans were keen observers of their geological surroundings and natural resources, both of which were necessary for their survival. These peoples located sources of flint for making fire and sources of chert and stones for fashioning a variety of tools and weapons, from scrapers and axes to knives and spears (Berkson and Wiant 2001, Illinois State Museum 2002). The earliest paleoindians, from 10,000 B.C. or so, left behind distinctive spears and stone tools at camp sites. Much later, Native Americans made long, pointed knives using a particular stone from Union County called Mill Creek chert. Bows and arrows were used extensively for hunting or fighting just prior to and following 1,000 A.D., and arrowheads were chipped out of chert.

Native Americans are known to have made pottery using Illinois clays from around 600 to 200 B.C. Carved pipes, dating from around 2,000 years ago, were made from flint clays called pipestone (Figure 1-2). Coal, galena, fluorite (the latter found as ornamental or religious artifacts), and salt springs were also known and utilized by Native Americans in Illinois.

Early Explorers and Cartographers (1670 to 1805)

Early explorers and cartographers made a number of observations about Illinois resources, physiography, soils, and rocks, stimulating interest and development of the Illinois country. These were the beginnings of documented, geologically related observations in Illinois. Among the earliest were the French explorers, Pere Marquette and Louis Jolliet in 1673 (Gluskoter 1982), and a Jesuit priest, Father Louis Hennepin, during 1679 to 1682 (Hennepin 1698). Those early explorers noted “charbon de terre”—coal—along the Illinois River. During the last few decades of the seventeenth century, several French explorers, including Pierre-Charles Le Sueur and Nicolas Perrot, visited northwestern Illinois and southwestern Wisconsin where