most important member of the survey team. Standards have been developed to give sketchers knowledge of what is expected when they return from a survey trip. These standards will be discussed and examples will be given of bad as well as good survey sketches and notes.

### The Computerization of the Cave Map

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The computerization of many types of activities has tended to occur in identifiable and somewhat predictable stages that can be described nearly independently of the application. Stage-1 (simple)—portions of the activity which were previously performed without computers are "simply" computerized. Some portions are still done the old way. Stage-2 (enhanced)—the computerized version of the activity is "enhance to provide additional functionality. Capabilities are provided which were seldom done before because they were either too time consuming or too difficult. Stage-3 (complete)—the computerized version is further enhanced by the use of more sophisticated algorithms and added functionality, to the point where all or nearly all operations are performed on the computer. The computerized process completely replaces the previous manual process. Finally, Stage-4 (redefinition)—the functionality of the computerized version greatly exceeds that of the traditional activity. Aspects of the computerized version are recognized as new manifestations of existing ideas, processes, and/or products. The fundamental terms previously used to describe the activity are redefined. The activity of creating and viewing a cave map is undergoing such a "redefinition".

# ADDITIONAL ABSTRACTS FROM THE 1996 NATIONAL SPELEOLOGICAL SOCIETY NATIONAL CONVENTION IN SALIDA, COLORADO

### Is It Condensation Corrosion or Something Else?

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Many morphological features of caves have been explained by a subaerial process called condensation corrosion. Condensation collecting on cave surfaces absorbs carbon dioxide and becomes corrosive. The subsequent dissolution erodes away ceilings, walls, and speleothems, creating hemispherical domes or cupolas, among other features. The calcite mass is disposed of through the walls by capillary action, traveling to the lower portions of the passages by gravity, and depositing there as seepage coral through evaporation. If condensation collects at orifices, where moisture-laden air emerges from passages below, rims of calcite are formed around barren channels which appear scoured of all secondary deposits. In the United States, these features appear only in caves west of a line roughly drawn from western Texas to the Black Hills of South Dakota. The caves of the Basin and Range Province of western Utah and eastern Nevada present a great diversity of cupolas, rims, vents, coral, and other related phenomenon. While some of these fit the subaerial condensation corrosion model for their origin, many others with identical appearances may be more appropriately explained by subaqueous processes. The morphology of these channels and associated rims, and their locations within the passages would be improbable if air currents were involved.

### The Origin of Folia

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Folia, strange-appearing and relatively rare speleothems, are generally regarded as forming in relation to a fluctuating water surface. While investigating folia in Nevada's Goshute Cave, several clues were found that point to a different origin. In most caves with folia, the lowest exposures of folia ribs are usually covered with water or have been buried by sediments. In Goshute Cave, however, there are three instances where the lowest folia ribs appear midway in the cave's vertical extent, allowing a unique insight as to their origin. When water saturated with calcium bicarbonate ions emerges from an orifice, there is a profuse outgassing of carbon dioxide (and calcite nuclei are precipitated. Carried by bubbles or water that has greater buoyancy because of higher temperature, the calcite nuclei flow upward along down-facing walls. Nuclei adhere to the walls, at first creating small sub-horizontal ribs spaced a few millimeters apart and protruding only slightly. These tiny ribs have limited horizontal extent and interleave with each other. Eventually, enough calcite accumulates on the ribs to form cavities that protrude enough to trap beneath them. When the accumulated exceeds the capacity of the cavity, it bubbles from underneath. The turbulence of bubbling causes deposition of more calcite at the cavity edge. Folia then, are the upside-down equivalent of rimstone pools, except that the upside-down pool of folia is filled with gas. What have been described as folia composed of mud have a different origin and appearance.