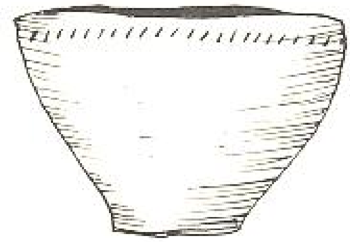
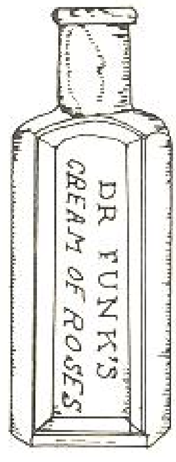
IDAHO ARCHAEOLOGIST





Vol.V, No. 2 Winter - Spring, 1982

IDAHO ARCHAEOLOGIST

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COVER: We're experimenting with a new, perhaps permanent cover design. The artifact drawings are by Ruthann Knudson.

NOTICE TO AUTHORS

All manuscripts should conform as nearly as possible with the style established by the Society for American Archaeology. (See page 13, Vol. III, No. 1 and page 1, Vol. II, No. 2, *Idaho Archaeologist*). Manuscripts should be typed double-spaced with 1½-inch margins and submitted in the original and two copies. The *Idaho Archaeologist* will publish articles concerning archaeology in Idaho and those parts of abutting states and provinces included in the Columbia drainage and the Great Basin.

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EDITOR'S NOTE: The following two articles discuss the use of commercially available items in the furtherance of archaeological projects. Their publication does not constitute an indorsement of either product. Other, similar, products are available in the marketplace at reasonable prices. We are interested in making available concepts which will reduce the time and costs involved in archaeological projects. As the number of dollars allocated by various levels of government become fewer, we need to be aware of equipment and methods which will stretch our funds without compromising scientific integrity.

WHY DID YOU DIG SO MANY HOLES?

Machine Coring in Southeastern Idaho

By

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ABSTRACT

Coring tools have been used increasingly in archeology to locate and determine the contents and limits of buried sites. Tool types vary from large truck-mounted rigs to small hand-powered tools. In southeastern Idaho, a small machine powered coring tool was used successfully for gross site location, often in areas where there were no surface artifacts. An additional use of such equipment is coring to depths as great as 6 m or more for soil and site sampling. The use of coring tools for the location of buried deposits on known sites is strongly recommended.

INTRODUCTION

Over the past several years as time and money constraints have forced archeologists to develop increasingly efficient methods of moving earth, there has been an increased use of both hand and machine-powered coring tools to aid in the testing and excavation of sites. While these techniques have sometimes been less than successful, there are cases in which coring has more than achieved its purpose. Recently, field crews under the author's direction have made extensive use of a machine coring tool in southeastern Idaho.

PREVIOUS USE OF CORING TOOLS IN ARCHEOLOGY

Coring tools have been used for a number of years to probe and sample sites in order to learn their limits and contents. The degree of sophistication of these tools varies from simple hand-powered tools used to relatively shallow depths to large, truck-mounted, power-driven tools capable of recovering samples from scores of meters below the surface.

Hand-Powered Coring Tools

Hand-powered coring tools, called soil sampling augers, have a wood or metal T handle with a series of metal shafts attached to various types of working ends. The shafts can be screwed together with a series of extensions. Screw type, bucket, blade, and tube type bits are available for these augers, thus enabling the field worker either to drill holes or to recover samples. Screw type auger bits vary in width from 1.25 inches to 2 inches in diameter, the blade and bucket augers vary from 2 inches to 7 inches in diameter, and the tube type soil sampler cuts a 3/4 inch hole (Ben Meadows Co. 1980: 522-524). Hand post-hole diggers have also been used as sampling devices.

In general, hand tools have been useful in locating buried deposits and buried architectural features and have sometimes proven to be as reliable as soil column sampling methods. For example, Professor Ralph Solecki, Columbia University, used a tube sampler mounted on a hand auger to collect pollen samples to depths of about 4.5 m at Catal Huyuk, Turkey (Ralph S. Solecki 1982: personal communication). Casteel (1970) found that coring a midden with a soil auger was a relatively rapid and reliable method of sampling which compared favorably with column sampling. Fry (1972) used a hand-powered post-hole digger in the Tikal Sustaining Area Project both to locate residential debris and architectural remains. Chatters (1981) extensively used a split-tube auger in Washington to locate sites, determine the nature of site stratification, aid in the mechanical stripping of overburden, discover small activity loci, aid in the development of a statistical sampling design, and aid in the stratigraphic excavation of parts of the two sites sampled. In Idaho, Green used an auger to locate house floors at Givens Hot Springs (Thomas J. Green 1981: personal communication). Plew (1981) used a hand auger extensively in the Bliss Project to supplement trenching and test excavation in site sampling.

Although hand coring has often proven useful in archeology, its efficiency on a large project where time is a limiting factor is questionable. While Casteel (1970:466) found that it took only 30 minutes to sink and process a 9 cm diameter core to 100 cm in depth in 10 cm arbitrary levels, one could not expect to maintain this rate over a large area where scores or even hundreds of cores would be required. Furthermore, hard soils can obviously slow the pace and tire the core operator unduly. Finally, there are cases in which several deep cores are needed, and here machine coring is not only attractive but mandatory.

Machine Coring Tools

There are a variety of machine coring tools available including large truck-mounted machines capable of coring to depths of scores of meters; trailer-mounted machines, also capable of coring to great depths; pickup-truck-mounted rigs used by soil scientists for coring up to 2 m depths; power augers operated by two persons; and power augers operated by one person. At least one type of one-person auger is capable of recovering cores from 6 m depths and possibly deeper.

A large truck-mounted coring rig donated by the Virginia Highway Department was used by the author a number of years ago to sample the contents of a supposed burial mound. Cores were sunk to a depth of 18 m. Analysis revealed that the mound was of natural rather than cultural origin, much to the disappointment of the land owner. At the St. Alban's site, Broyles (1971) had several cores sunk to a maximum depth of about 11 m to sample the site in order to reveal site stratification using a trailer-mounted device (Dancey 1981:131ff). In both this and the Virginia case, the equipment used is generally beyond the budget of most archeologists unless they are working closely with highway departments or engineering firms. Running a large, truck-mounted rig of the type used in Virginia currently costs about $150 per hour for the crew, with a $1,000 mobilization cost to bring the rig to the site in addition to the cost of the sampling tubes (Ed Shorrey 1982: personal communication).

A smaller power-operated coring device is used by the Soil Conservation Service for taking soil samples. This rig is mounted on the back of a pickup truck and can be operated by one person. While the small size of the rig makes it fairly mobile (Will Reed 1981: personal communication), it can only be used to depths of about 2 m (Dale Schlader 1981: personal communication). In areas where this depth is not a limiting factor, such devices can be used with great effectiveness. Reed (1976), for example, successfully used a pickup-truck-mounted soil sampler to test two sites in Colorado and one in South Dakota. However, there are areas where archeologists must go where pickup trucks cannot, and in such cases, even smaller coring devices must be used. Furthermore, the pickup-truck-mounted soil sampling devices are not readily available on a rental basis, are not easy to service unless one has had experience with hydraulic equipment, and are expensive to buy new or used (Will Reed 1981: personal communication).

Fortunately, there are smaller and more readily available power units and more readily available power coring devices which can be operated by the archeologists themselves and which are not prohibitively expensive. Pavesic and Meatte (1980) used a small power auger at Hagerman to extensively test the site in conjunction with backhoe trenches and hand excavation. Coring was also done to determine bedrock depth once the test pits were dug (Pavesic and Meatte 1980:24, 15). The auger used on this project had an engine mounted on the top of the drive shaft and weighed approximately 18 kg. Two strong individuals were required to operate the device (Max G. Pavesic 1981: personal communication; cf. Ben Meadows Co. 1980:498). Therefore the use of such equipment has implications for the age-sex structure of archeological crews. However, there is another type of power coring tool which puts fewer physical constraints on the user.

MACHINE CORING IN SOUTHEASTERN IDAHO

During the 1981 field season, the author and field assistants extensively used a Little Beaver brand coring tool for sub-surface testing. The tool is relatively easy to use: the smallest crew member, a 95 lb. female, could use it even with a 1.4 m long bit attached. The machine is easy to operate because the coring bit is not attached directly to the engine. Rather, the engine is mounted separately and is attached to the bit by a long flexible drive shaft (Figure 1). Several interchangeable bits are available for the device ranging in diameter from 1.5 to 12 inches. The bits and extensions are each 36 inches long. Bit types include screw type augers and buckets, the latter of which can be used to recover a sample intact (Figure 2). The extensions are attached to each other and to the bits by spring-loaded buttons so that the auger can be dismantled as it is pulled out of the hole. This equipment can be used for two distinct but interrelated purposes: (1) gross location of buried cultural material and estimation of sub-surface provenience and (2) soil or site sampling.

Location of Buried Deposits

For the gross location of buried deposits, a 36 inch long, 8 inch diameter, fully flighted (or threaded) screw-type pointed auger was used. With an extension, the 8 inch diameter bit can be easily used to a depth of 72 inches. However, in practice, cores were sunk to 54 inches. The holes were augered in 6 inch increments to maintain vertical control. Most of the sample was recovered directly from the flights of the auger since these flange-like projections are several inches wide. The remainder of the material was recovered from the bottom of the hole with a 54-inch-long manual post-hole digger. All of the earth recovered was screened through 1/4 inch mesh. It took approximately 1 hour to core, recover, screen, and log a hole 8 inches in diameter and 54 inches deep in this manner.

There can, of course, be downward mixing of material from one level to the next, especially in soft soils where the auger can ream out the hole to some extent. However, when the immediate objective is the location of buried deposits, the minor amount of mixing that is likely to occur in all but the loosest soils is minimal in comparison to the efficiency of the coring operation. Furthermore, recent work indicates that in some cases, machine coring can, in fact, be highly accurate in predicting not only the gross location but the stratigraphic provenience of buried cultural material.

During the 1981 field season, a total of 122 test holes were dug with the machine coring tool on two projects. On the first, the coring tool was used to locate buried cultural material in an area where there were no artifacts visible on the surface. A site was suspected, however, because the area contained an old spring surrounded by deep, well-developed soil. Thirty-one cores intuitively spaced over an area of 2,300 square meters yielded cultural material located from about 31 cm to 107 cm below the surface. However, when a 1 x 2 m test pit was excavated to a depth of 140 cm at a distance of 1 m from the most productive auger hole, no additional cultural material was located. Thirty-two additional auger holes were placed at three known sites in other sections of the project area with negative results; none of the cores located buried artifacts. Therefore, at the end of the first project, it was determined that the coring technique had proven useful in locating buried deposits some of the time, but that their predictive value was questionable. That is, the presence of several flakes in a core would not necessarily mean that an adjacent test pit would also provide the same relative artifact density. The presence of several rodent bones in the auger holes also suggested that rodent disturbance rather than human behavior was responsible for the deep burial of some of the artifacts.

In the second project, machine coring was used in conjunction with a construction job. The coring pattern was determined by the construction design rather than by archeological criteria, but the goal of the coring was still to locate buried cultural material on a known site. Sixty-three cores were sunk near and along the project centerline at 7.6 m intervals. In no case were there artifacts on the surface near the core locations. Thirty-one of the cores produced arti-

FIGURE 1

Mechanical earth drill (photo courtesy Little Beaver, Inc.)

facts. Artifact densities in the cores ranged from 1 to 14 artifacts per 6 inch level. Five cores produced faunal material. Four 1 by 2 m test pits were located near the most productive auger holes. The test pits produced over 2600 lithic artifacts to a maxium depth of about 140 cm. Thus in the second project, the cores appear to have been good predicators of artifact distribution in the test pits; where the cores indicated that the deposit ranged in depth from 46 cm to 140 cm below the surface, the test pits showed similar results. In addition, there seems to be a positive correlation between artifact density in the cores and artifact density in the test pits. However, this relationship is difficult to express statistically; the cores were dug in 6 inch levels because the machine was constructed in inches while the test pits were dug in the standard 10 cm levels.

In spite of the general agreement between artifact distribution and density in the cores and the test pits, there was one case where the test pit missed the cultural material found in the adjacent core. In this case, a fragmented distal metapodial, bison size (David Fortsch 1982: personal communication) was located 46 cm to 61 cm below the surface apparently in the north side of the core. A test pit was placed to the north side of the core hole but no faunal material was recovered. The pit was placed either on the wrong side of the core or too far from it. Because the bone was well below the surface, lack of light in the auger hole prevented a determination of the bone's orientation.

In general, however, field work on the second project indicated that machine coring does have predictive value, at least on sites with relatively high artifact densities. Furthermore, no damage was noted on the artifacts recovered from the cores (James Woods 1982: personal communication) although faunal material was damaged in all cases. It was also learned that if sufficient care is used in removing the auger from the hole, downward mixing of artifacts can usually be avoided.

Soil sampling

While the method described above can be used to recover all or most of the sample to a depth of 140 cm with a moderate, but unmeasured, degree of reliability, there are cases in which an intact sample is desired to determine site stratification. In addition, if a core deeper than 140 cm is desired, or if the soil is quite loose even at depths above 140 cm, the augering method described above is inadequate. In such cases, an intact core is required. This is accomplished with the same power equipment as described above but with a different set of bits. Cores to 5.5 m depths can be obtained with the Little Beaver brand machine if 3 inch diameter bits are used because the machine will not drive the 8 inch diameter auger to such depths without damaging the clutch (Don Murdock 1981: personal communication).

Cost

The power coring equipment used in the two southeastern Idaho projects described above costs approximately $785 for the engine and drive shaft (Ben Meadows Co. 1980:499) and approximately $300 for a complete set of bits for deep coring (Don Murdock 1981: personal communication). Whether such a capital investment is feasible depends, obviously, on the scope of one's projects(s). The rental of the equipment is approximatley $46 per day. Therefore, on large projects, coring tools are inexpensive to operate.

CORING TOOLS AND SAMPLING

The effectiveness of machine coring depends upon the skill of the archeologist and his/her awareness of the sampling implications of the technique. To be considered here are the following: the size of the core, threshold densities, the percentage of site area and volume that is actually being sampled, the number of cores dug and the pattern in which they are dug, and the "adequacy" of one's coring operation given project objectives.

As far as core size is concerned, a sample recovered from an 8 inch diameter core cut in 6 inch increments would be about 302 cubic inches in volume while a sample from the 3 inch diameter core would be only about 42 cubic inches in volume, or about 1/7th the volume of the larger core. Such a small sample could be insufficient and several 3 inch diameter cores might have to be clustered at each core location to recover an adequate sample. On the other hand, Casteel (1970) found that his 3 inch diameter cores were good predictors of site stratification. Clearly, controlled experimentation with the results expressed in statistical terms must be done before judgments can be made about the relative validity of 8 inch as opposed to 3 inch cores in deep sampling. This work is outside the scope of this paper.

On the matter of threshold densities, experience on the current projects has been that coring tools can be effective

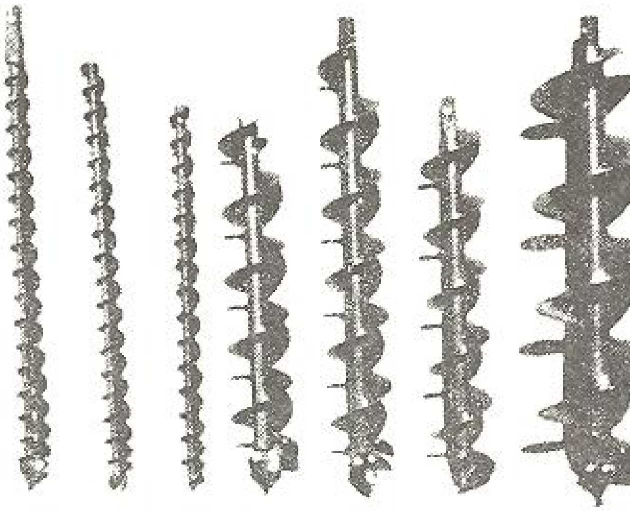

FIGURE 2

Augers and extensions (photo courtesy Little Beaver, Inc.)

in locating dense buried artifact concentrations. At this point, however, we do not know how dense a concentration has to be before we can be reasonably sure of hitting it with a 3 inch or 8 inch diameter core. Here is another area where statistically sound experiments would be useful so that quantitative statements about threshold densities could be made.

On the issue of the percentage of site area and volume that coring actually samples, potential users of coring tools should be aware that they sample only a very minute fraction of the surface area and volume of a site. For example if a site with an area of 360,000 square meters were sampled at 50 m intervals with an 8 inch diameter core, only a 0.0013% sample of the surface area at any level would be taken. If the site were 1.5 m deep on the average, the same coring interval would also result in a sample of 0.0013% of the volume of the site. The 50 m sampling interval would also result in the placement of 144 cores. If samples were taken in 10 cm levels, then 2,160 samples would be taken. Recovery of the samples would be relatively inexpensive, especially compared to the cost of digging 144 small test pits down to 1.5 m.

Where one would dig those 144 core holes, whether they would be sufficient in number to meet project objectives, and whether one could confidently extrapolate from what one did and did not find in the core holes to the untested remainder of the site is another aspect of the sampling issue. To treat this aspect in detail would require an extended discussion of the goals and research design of the project in question and a determination of whether intuitive, purposive, or probability sampling would be necessary to satisfy project objectives. A full consideration of this topic would necessitate an extended excursion into the ongoing debate on sampling in archeology (cf. Mueller 1975, Nance 1981). The project budget would also be a consideration, perhaps the overriding one. While a complete treatment of these topics is outside the scope of this paper, they all must be carefully considered by the archeologist before work is begun on a particular site.

CONCLUSION

If many holes were to be placed in a site in a relatively brief period of time at relatively little cost, then machine coring is definitely worth the effort. If there is a dense buried site in the area investigated, coring will probably locate it. Therefore, it is better to dig many core holes in a site than to write it off as being shallow and/or not significant because artifacts do not appear everywhere on the surface. However, machine coring should not be used blindly: it is not a panacea for the archeologist's time/money problems, nor is the coring tool a gasoline powered diving rod.

ACKNOWLEDGEMENTS

The following people were helpful in the preparation of this article: James C. Chatters, David Fortsch, Thomas J. Green, Tom Haislip, Carrie Hamilton, Robert Kimball, Leonard Kovit, Don Murdock, Max G. Pavesic, Mary Peck, Quentin Purvis, Dale Schlader, Ed Shorrey, Ralph Solecki, James Woods, and the crew of Basin and Range Research, Pocatello. Perforations of truth and logic are my own responsibility.

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A SHORT STUDY ON THE FEASIBILITY OF THE REINHARDT REDY MAPPER FOR USE WITH ARCHAEOLOGICAL SITES

By

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ABSTRACT

The Redy Mapper, a portable mapping device, is examined in terms of its use by field archaeologists. It is found that, although the Redy Mapper has limitations, there are many uses for it. The primary application of this device is the mapping of archaeological sites found during cultural resource surveys in which the sites are expressed as surface scatters in areas of little vegatation and ground cover.

An archaeological tool that can aid in the production of quick and accurate site maps during survey work has long been needed. The Reinhardt Redy Mapper is a device that may come close to fulfilling these standards. Employment with the Boise District of the Bureau of Land Management offered the opportunity to use the Redy Mapper in the field. The subsequent experience gained with this mapping device has demonstrated its potential for recording archaeological sites.

The Redy Mapper is a small and very portable instrument made from a durable lightweight and waterproof plastic (Figure 1-A). It measures just over 25 by 25 centimeters in surface area, and is only 2 millimeters thick. It weighs 237 grams with a drawing disc attached. The necessary ancillary equipment is very minimal. Figure 1-B shows the total items needed to record a site which includes a compass, measuring tape, flagging, a pencil, and the Redy Mapper itself.

The time necessary to map a site will be dependent on the size of the site and the degree of accuracy desired in terms of individual artifacts, artifact concentrations, and site boundaries. In general, an experienced team of two individuals can map a site measuring approximately 25 by 50 meters in an hour or less. This estimate includes the defining of site boundaries, the plotting of any artifact concentrations within the site, the locations of nearby features such as roads, and the recording of any necessary field notes.

Undoubtedly, one of the most time-consuming activities associated with the use of the Redy Mapper is the deliniation of site boundaries. At exposed sites, such as in the Great Basin region, the periphery of artifact distribution is easily discernible. It can be quickly marked by tying colored flagging on sagebrush, rocks, etc. If the site is not totally exposed and subsurface testing is necessary to determine boundaries, then the previously mentioned time period of one hour needed to construct a map is inadequate. Depending on the amount of testing conducted, a subsurface or unexposed site can still be mapped as accurately as an exposed one. However, it is the short amount of time in which a site can be accurately mapped, coupled with the relative ease with

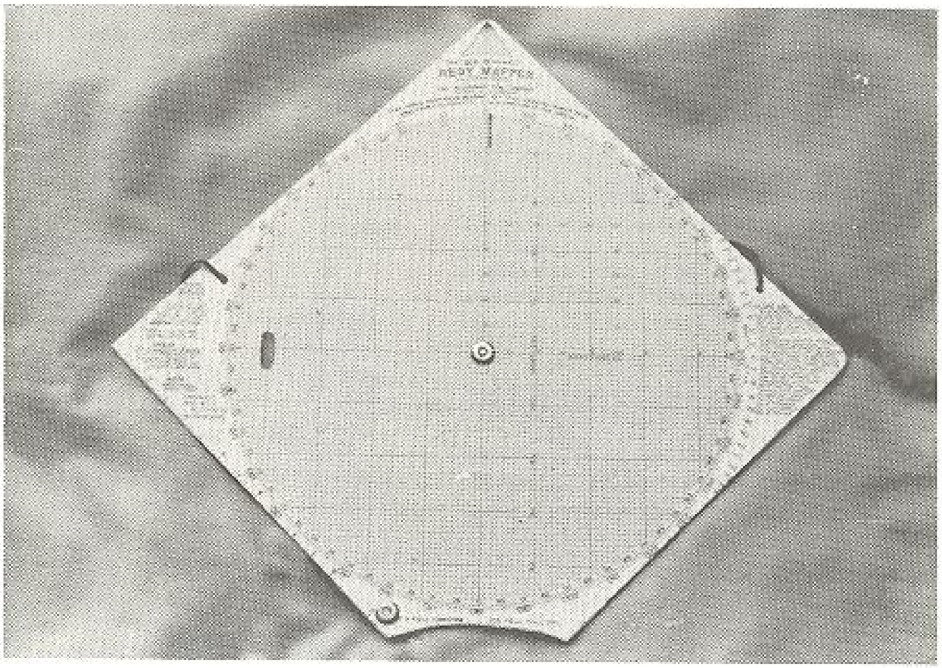

FIGURE 1A

Redy Mapper

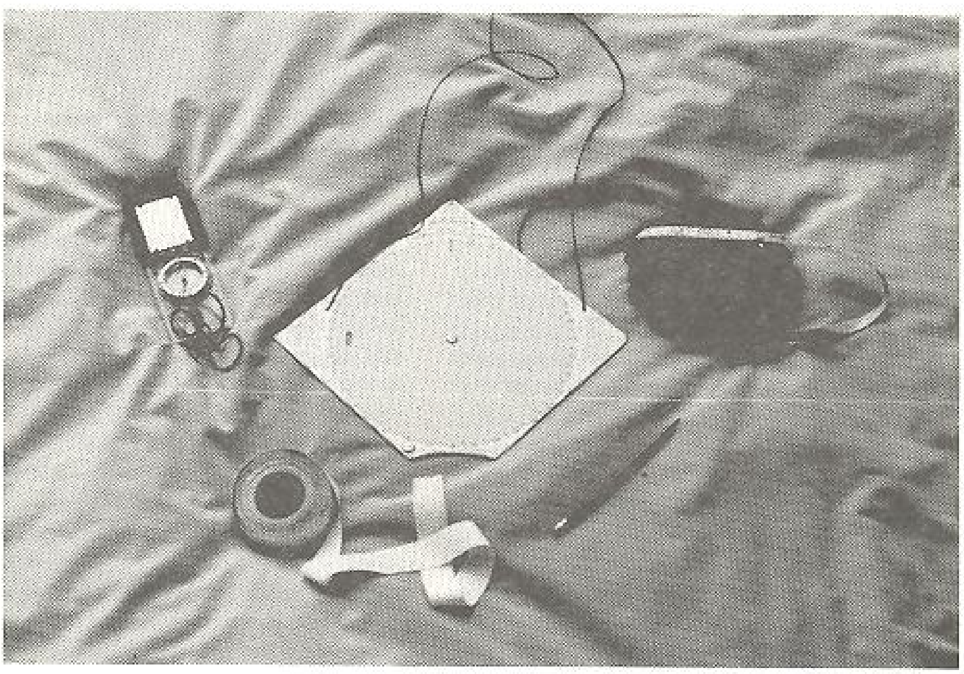

FIGURE 1B

Redy Mapper and Ancillary Equipment

FIGURE 2

Redy Mapper in Use

which the complete mapping kit can be transported in a back-pack or shoulder satchel, that makes the Redy Mapper very attractive to any field archaeologist who is forced to deal with logistical considerations.

The procedure for using the Redy Mapper is fairly simple and is basically only a matter of noting compass readings and measured distances and then plotting these points on a drawing disc (Figure 2). As can be seen in Figure 1-A, the Redy Mapper is graduated into 360 degree increments in a compass-like manner around the transparent drawing disc. The disc need only be rotated the corresponding number of degrees shown on a compass to accurately reflect the angle to be recorded. The area under the drawing disc is gridded into one inch squares so that a ruler is unnecessary when converting an actual measured distance to the scale used for the map. The combination of the compass reading and the tape-measured distance, when recorded on the drawing disc, will reflect an accurate horizontal record of the plotted point.

The first step in constructing a map is to establish a datum point. The individual doing the mapping stands at the datum and the other team member takes the end of the tape measure to the first point of the site boundary to be mapped. The person mapping then takes a compass reading on the position of the other individual, turns the drawing disc the correct number of degrees, converts the distance to the scale being used, and plots the point on the disc. The individual who is mapping then moves to the point just plotted, while the person holding the end of the tape moves to the next point to be plotted, and the procedure is repeated in this "leapfrog" manner until the site boundary is completely mapped.

Figure 3 is an example of an actual site mapped with the Redy Mapper. The plotted points represent individual artifacts at what is taken to be the edge of the site. The interpolated site boundary is then drawn on the map based on these plotted points. The number of points needed is arbitrary. The more points that are mapped, the more accurate the map will be in terms of a true representation of the site. However, a point of diminishing returns is soon reached. The only requirement is that an adequate number of boundary points be plotted which will accurately reflect the boundary of the site.

It should be noted that it is possible for the person doing the mapping to remain stationary throughout the entire procedure. This method requires the individual holding the end of the tape to move to each point while the individual doing the mapping has only to record the correct distance and compass bearing. This may be impossible at times unless a long measuring tape is available. Furthermore, measuring shorter distances in the aforementioned "leapfrog" manner reduces error due to slack or snagging which occurs when the tape is stretched over long distances.

As can also be noted in Figure 3, it is quite feasible to plot artifact concentrations within the site. In this case, a concentration was defined as greater than or equal to 25 artifacts per square meter. The method for plotting areas of artifact concentration is essentially the same as plotting site boundaries. From the datum point, or any known point, the periphery of the concentrations were plotted and the boundaries thusly determined.

While the versatility of the Redy Mapper would seem to be limited only to the imagination and ingenuity of the person using it, three problems were observed with the device. First, the scales listed on the body of the Redy Mapper are all given in inches to feet. The area under the drawing disc that was mentioned previously is also gridded in inches and increments thereof. This makes it difficult to use metric measurements without bothersome conversions. The second problem is an inherent limitation of the Redy Mapper. The size of the drawing disc is fixed and only the scale is variable. There are times when a site requires such a large scale, due to its size, that any detail on the map becomes impossible. One solution to this problem would be to map portions of the site with a smaller scale that could be tied together at a later time so that a larger map could be prepared out of the field. Finally, it has been found that the Redy Mapper becomes very limited when used in a heavily vegetated area. Mapping becomes impossible when the tape measure cannot be stretched out in a straight line and a clear line of vision is unattainable for a compass reading. This is a problem with any mapping procedure that is done on the ground and requires the clearing of vegetation by hand or else plotting points only where clear areas are found.

In conclusion, the Redy Mapper would seem to be a very practical mapping tool for the survey archaeologist who must cover large areas in a short time. The Redy Mapper is best suited for small, exposed sites but is versatile enough to be useful for almost any mapping need.

The New Reinhardt Redy Mapper, Lilligren Model, retails for $11.95 with additional sets of three drawing discs for $2.50. Order from:

The Woodsman Tool Company
3464 North Emerson Street
Arlington, VA 22207
703-536-6391

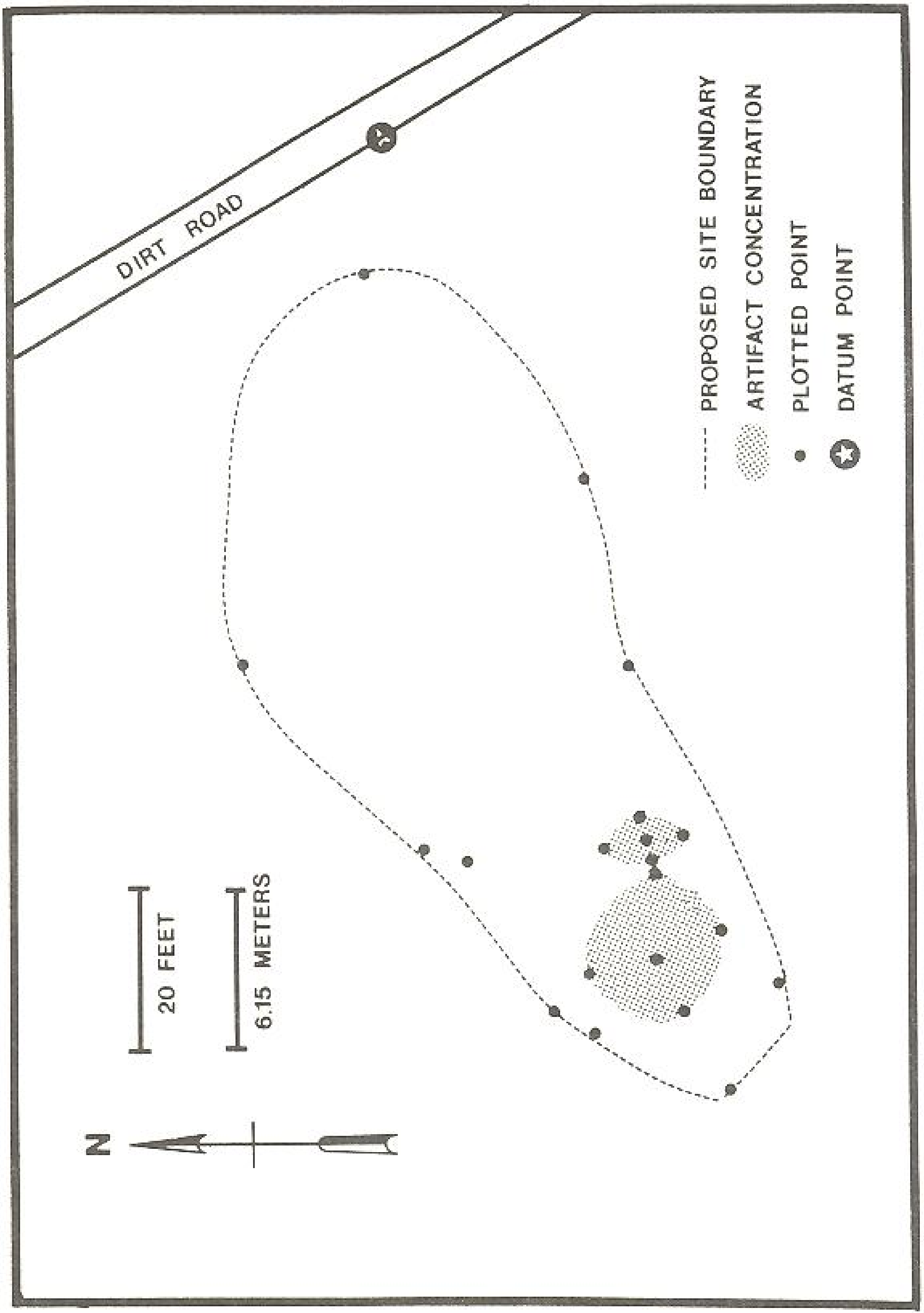

Figure 3. Example of Actual Site Mapped with the Redy Mapper

THIN SECTION ANALYSIS OF POTTERY FROM SITE 10 GG 1, SOUTHCENTRAL IDAHO

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ABSTRACT

This paper describes the results of thin section analysis of pottery sherds from 10GG1, near Bliss, Idaho.

This paper discusses the results of thin section examinations of pottery sherds from site 10GG1 near Bliss, Idaho. The site is located in the lower reach of the Hagerman Valley, within the boundaries of the proposed A. J. Wiley hydroelectric project (see Figure 1). From September through November, 1980, a cultural resource investigation was conducted at 10GG1 and associated sites. Archaeological testing was conducted by Idaho Archaeological Consultants under contract to Idaho Power Company (see Plew 1981). The site consists of four contemporary components, post dating A.D. 1200, and is considered a spring fishing camp. Material remains belong to a few categories, including the largest ceramic inventory from a single Idaho site (Plew 1981).

In a paper (Plew 1979) accepted for publication in 1978 by *Plains Anthropoligist*, I discussed variations in Idaho's ceramic inventory which led me to describe a new pottery type, Southern Idaho Plain. This pottery was well made and exhibited vessel form variation characteristic of Great Salt Lake Fremont pottery. I proposed an extensive of the latter tradition into southern Idaho, suggesting that some of the pottery or a knowledge of the tradition was carried into the area by northward expanding Shoshoneans (Plew 1979:335). Following my initiative, Butler (1979a, 1979b) published two papers developing similar hypotheses, including the presence of Fremont villages along the Snake River in the Twin Falls-Hagerman area. A primary tenet of my own work involved the suggestion that some Idaho pottery had simply been improperly identified. One such example was the pottery from the upper levels of Wilson Butte Cave considered by Gruhn (1965) to be a Shoshoni ware variation and by myself (1979) and Aikens (1966:3) Fremont pottery. My emphasis on the nature of the Wilson Butte pottery pertained to the need to establish a relative time frame for ceramic materials in Idaho coeval with Great Salt Lake Fremont. This pottery has now been identified by Jesse Jennings, Rex Madsen and other scholars at the University of Utah as Fremont pottery (see Butler 1980). Subsequently, Butler (1981) has used these new findings to re-interpret the Late Archaic pre-history of eastern Idaho, and to implicitly suggest a Fremont entity in eastern Idaho coeval with the Great Salt Lake Fremont (Butler 1981). The problematic nature of these data have been discussed elsewhere (Plew 1979, 1980, 1981:160–162). In general, the question of Fremont in Southern Idaho suffers from a lack of data, analysis of existing data, and substantial speculation. In this context, the recovery of a significant pottery assemblage near Bliss, Idaho, is important, particularly since noticeable variation exists in the collection.

A sample of 20 pottery sherds were selected for thin sectioning. These were chosen to represent both Shoshoni ware and Southern Idaho Plain. To insure some control of the sample, only flatbottomed basal sherds and straight-lipped rim sherds were selected as adequate to identify Shoshoni ware. Five Shoshoni sherds and eight Southern Idaho Plain sherds were sectioned and mounted by Johanna Bustemante, Department of Geology, Boise State Unviesity. The remaining sherds proved too fragile for mounting. The sherds were then examined under a 50X microscope by the author. The criteria for description of the sherds are contained in descriptions of Rudy (1953) and Plew (1979). These type descriptions follow:

"Shoshoni Ware" (after Rudy, 1953:94)

Construction: Coiled and molded

Firing: Uncontrolled atmoshere (?)

Core Color: Generally reddish brown, ranging from dark gray through reddish brown to almost black.

Temper: Variable; when reviewed with a hand lens it appears as quartz sand ranging from fine to coarse, with occasional fragments of a light, opaque angular material and small amounts of mica. The thin section analysis shows the temper to be "crushed granitic rock or subangular sand that has been derived from granitic rock."

Core Texture: Coarse, occasionally medium.

Surface Finish: Poorly smoothed; scraped by a stick; striations common. Surface undulating. Occasional sherds well smoothed but not polished.

Surface Color: Reddish brown or buff, occasionally gray grading into dark brown; some almost black.

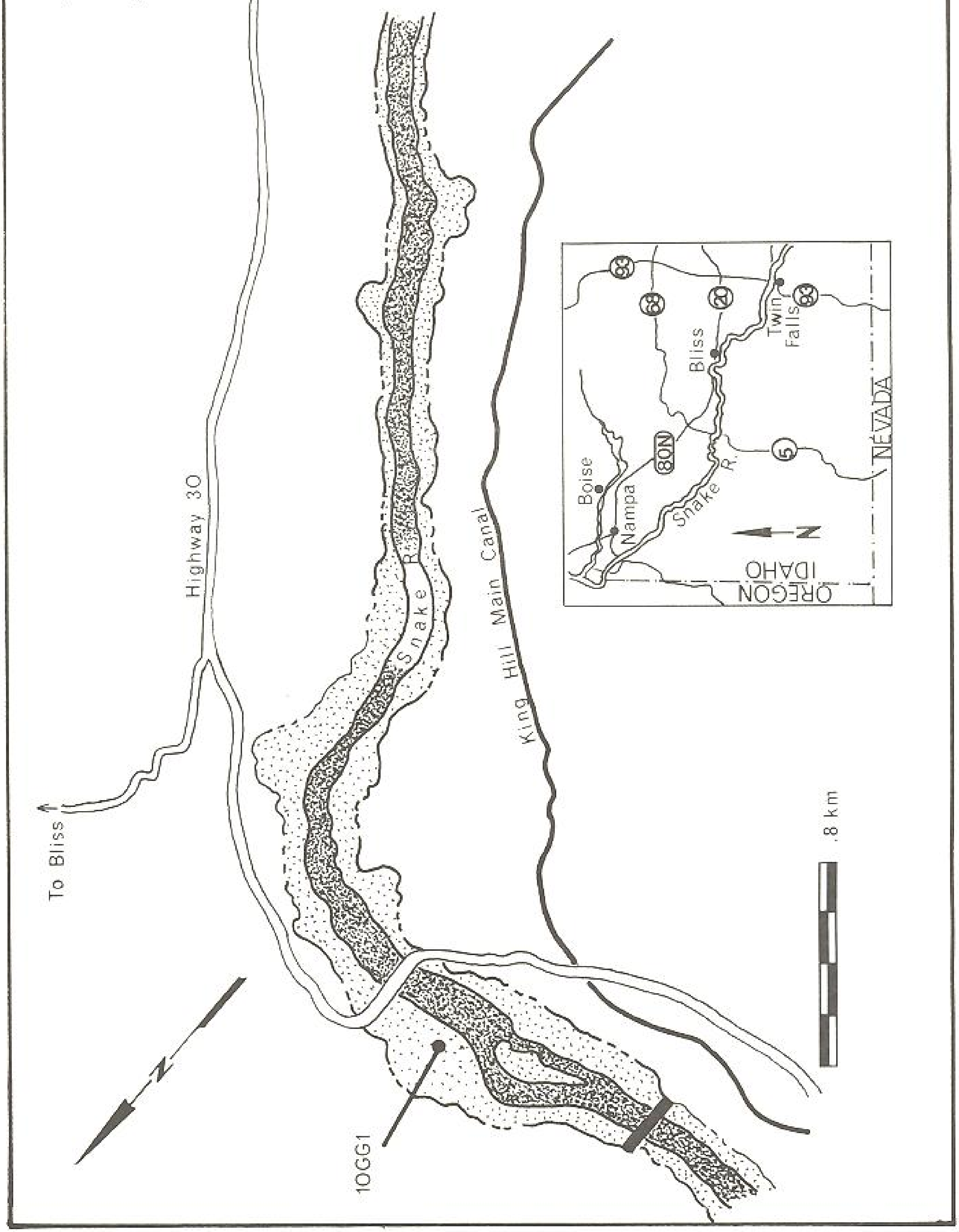
Vessel Walls: Strong to friable—principally friable.

Shapes: "Flower pots" and jars with pointed bases. Ethnographic reports also indicated bowls.

Rims: Straight and out-curved.

FIGURE 1

Map showing the location of site 10GG1.



Wall Thickness: Average, 7 mm; range, from 4 to 8.5 mm.

Decorative Techniques: Occasionally fingernail impressions vertically placed in horizontal bands just below the rims; most sherds plain.

Tuohy's (1956:61–65) classification of "Idaho Shoshoni Wares" generally conforms to the type description given by Rudy.

Southern Idaho Plain Ware (Plew 1979:330–331)

Construction: Coiling and scraping

Firing: Reducing atmosphere

Core Color: Dark gray/black/dark brown

Temper: Fine sand containing quartz; occasionally basalt or other crushed granitic material/mica. Material appears to be locally acquired.

Core Texture: Medium to relatively fine

Surface Finish: Smooth. Striations are usually not visible, with a light polish occurring on some sherds.

Luster: Dull to waxy

Surface Color: Gray/gray-brown/beige with occasional dark black sherds.

Vessel Walls: Strong

Vessel Shape: Mainly body sherds representing what frequently appear to be bowl forms. Occasional evidence of globular vessels with vertical necks.

Rim Form: Straight to excurvate with occasional marked lips which are flat and well smoothed.

Wall Thickness: Average range is 4–5 mm in diameter. Occasional specimens may be 7 mm.

Decorative Techniques; None

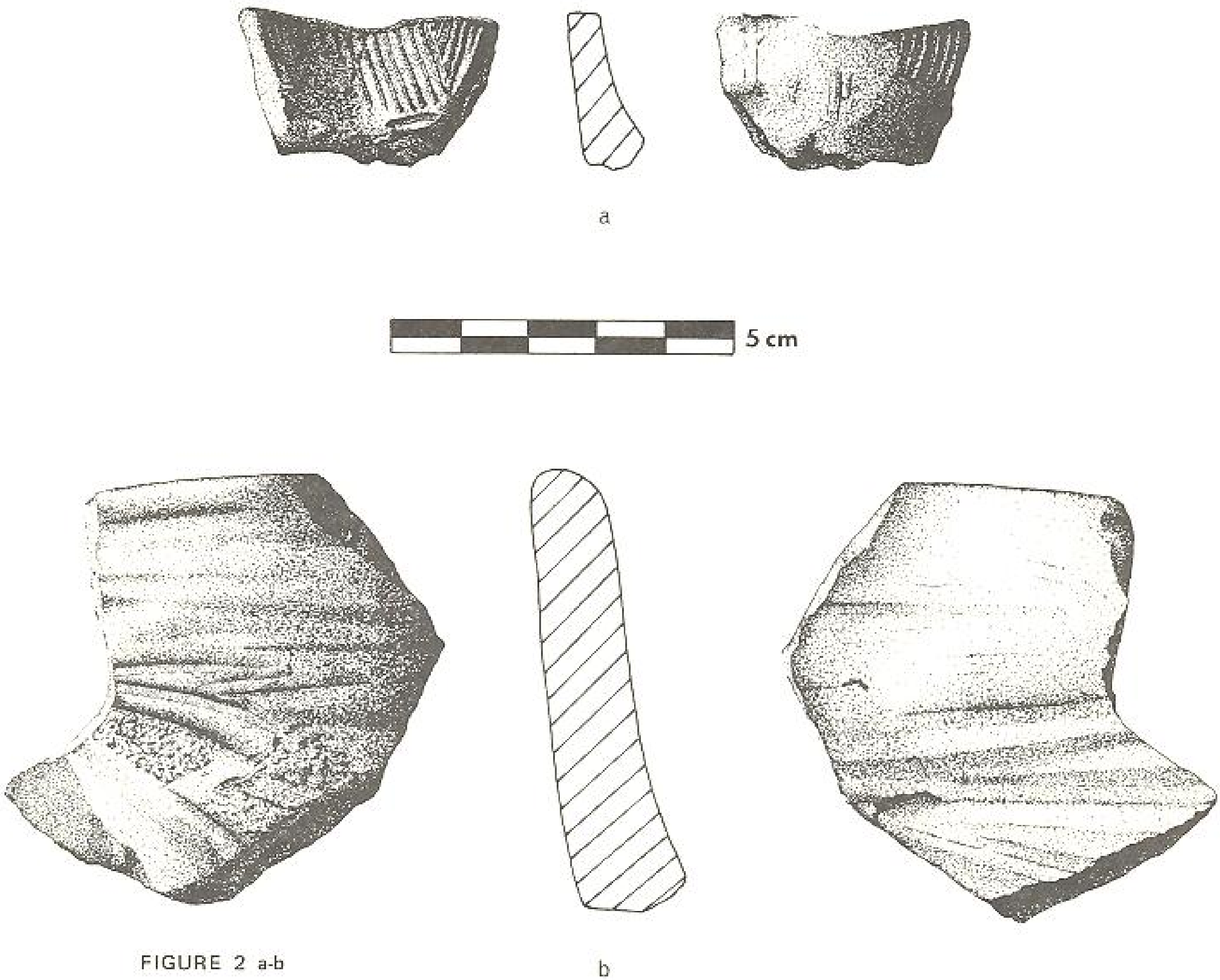


FIGURE 2 a-b

Shoshoni Ware Sherds
Specimen, Figure 2a exhibits tooling marks.

Examination of sherds indicated close comparison with the above type descriptions. Great similarity was observed in tempering materials. This is to be expected since materials were locally required. Shoshoni ware walls were frequently friable and contained relatively large bits of crushed quartz and basalt. The tempering agents and cores of Southern Idaho Plain sherds were finer and more tightly cemented. Variations in vessel form were an obvious distinguishing criterion (see Figure 2 a and 3). The surfaces of all Southern Idaho Plain sherds were smooth, some showing evidence of slight polish.

The results of this investigation demonstrate that type descriptions for Shoshoni Ware and Southern Idaho Plain Ware recognize distinct variations in Idaho pottery. Though the precise nature of these variations remains unknown, it is clear that all southern Idaho pottery does not fall within the typical range of Shoshoni Ware. Further, the occurence of Shoshoni Ware and Southern Idaho Plain types at 10GG1 appear to post-date the dissolution of Great Salt Lake Fremont in Northern Utah (see Plew 1981:158). This is important since it provides for a slightly later time frame for the dispersal of Fremont materials into southern Idaho, following the decline of the Great Salt Lake pattern. It is noteworthy, however, that the Injun Creek site in Northern Utah contains one date of A.D. 1605 $\pm$ 100 (Aikens 1966:14), making it contemporary with 10GG1 and possibly later than the upper levels of Wilson Butte Cave (Gruhn 1961) which contain Fremont pottery (see Plew 1979; Butler 1981). The distribution of Fremont-like materials in southern Idaho (see Plew 1979: Butler 1979, 1981) may represent geographically, a broader extensive of a Fremont pattern from Northern Utah. There is little evidence to suggest a Fremont entity in eastern Idaho earlier or coeval with Great Salt Lake Fremont (Butler 1981). The distribution is more likely associated with trade or diffusion of manufacturing techniques, possibly linked with the Numic expansion (Plew 1979:335).

ACKNOWLEDGEMENTS

I wish to thank Drs. Elton Bentley and Richard Hardyman, Department of Geology and Geophysics, Boise State University, for their kind assistance in making available the facilities of their department, and Johanna Bustemante for preparing the thin sections.

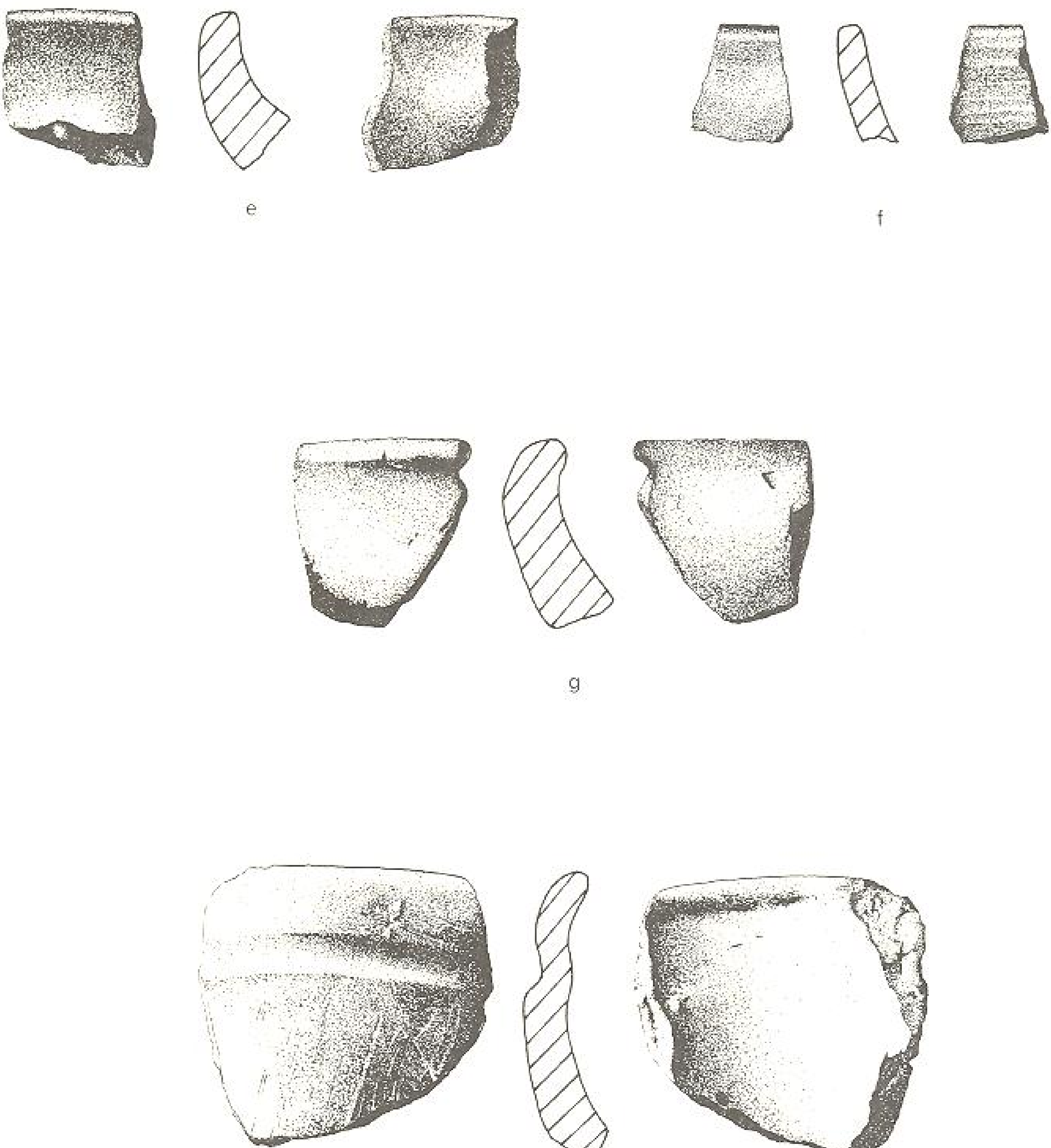


FIGURE 4 e-h

Southern Idaho Plain Rim Sherds

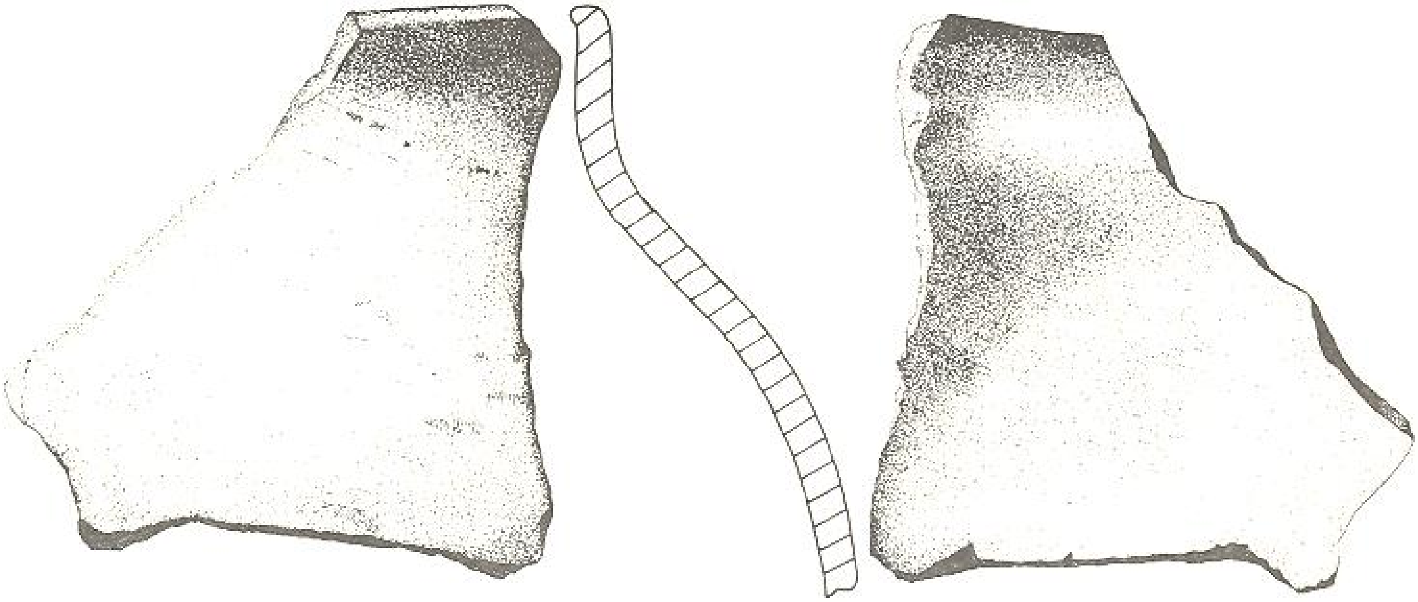


FIGURE 5

Southern Idaho Plain Sherd

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TABLE 2

SOUTHERN IDAHO PLAIN SHERDS

	Core Color	Temper	Core Texture	Surface finish	Surface Color	Walls	Rims	Shape	Wall Thickness
10GG1-521	reddish-brown	sand, quartz	fine	smooth	reddish-brown[1]	strong, thin	excurvate	bowl	4-5
10GG1-139	dark gray	quartz, calcite, mica	fine	smooth	reddish-brown	strong, thin	excurvate	bowl	4-5
10GG1-697	grey	quartz, sand	very fine	very smooth	gray	strong	excurvate	?	4-5
10GG1-288	gray	quartz, sand	fine	smooth	gray	strong	excurvate	?	4-5
10GG1-449	dark gray	quartz, sand	fine, well cemented	smooth	gray[1]	strong	excurvate	?	4-5
10GG1-875	dark gray	quartz, sand[2]	fine, well cemented	smooth	gray	strong	excurvate	?	4-5
10GG1-450	black	quartz, sand[2]	fine, well cemented	smooth	black	strong	excurvate	?	4-5
10GG1-675	gray	quartz, sand	fine, well cemented	smooth	gray	strong	excurvate	jar(?)	4-5

1 slight polish

2 some vegetal material

TABLE 1

SHOSHONI WARE SHERDS

	Core Color	Temper	Core Texture	Surface Finish	Surface Color	Walls	Rims	Shape	Wall Thickness
10GG1-453	reddish-brown	quartz, sand basalt, mica	coarse	unduluting	reddish-brown	strong	straight	flower-pot	5-7 mm.
10GG1-335	reddish-brown	quartz, sand basalt, mica	coarse	unduluting	reddish-brown	friable	straight	flower-pot	5-7 mm.
10GG1-203	reddish-brown	quartz, sand basalt, mica	coarse	unduluting	reddish-brown	friable	straight	flower-pot	5-7 mm.
10GG1-953	yellowish	quartz, sand mica	medium	unduluting	yellowish	strong	straight	flower-pot	5-7 mm.
10GG1-381	dark grey	fine sand, quartz, mica	fine	unduluting	black	strong	straight	flower-pot	5-7 mm.

ARCHAEOLOGICAL UPDATE

SPRING IACPA MEETING. The Spring 1982 meeting of the Idaho Advisory Council of Professional Archaeologists will be held April 30 beginning at 9:30 a.m. in the conference room of the State Library, 325 West State Street, Boise. The agenda will include a discussion of the BLM–USFS computer sustem with Rick Holmer of the University of Utah, Hells Canyon, and miscellaneous other business.

IAS MEETING. The annual meeting of the Board of Directors of the Idaho Archaeological Society will be held in the Conference Room of the Elks Rehabilitation Center, 204 Fort Place, Boise, at 7:30 p.m., June 7, 1982.

GREAT BASIN CONFERENCE. The Great Basin Anthropological Conference for 1982 will be held at Reno, Nevada, September 30 through October 2 at the Downtowner Holiday Inn. Although the deadline date of March 15 for submission of proposed papers has passed, other inquiries may be addressed to: Robert L. Bettinger, Project Chairman, GBA Conference, Department of Anthropology, University of California, Davis, CA 95616.

FLINTKNAPPER APPOINTMENT. Gene Titmus, Jerome, has been appointed research associate in primitive technology at the Herrett Museum, College of Southern Idaho, Twin Falls.

Museum Director Jim Woods said this non-salaried position will provide the museum with technical assistance in the design and fabrication of exhibits pertaining to ancient stone tools. He said Titmus is recognized worldwide for his expertise in the field of lithic technology. As a colleague of the late Dr. Don Crabtree, Kimberly, Titmus has consulted with archaeologists from Europe, Africa, Australia and Central America.

He recently was an invited lecturer at the Institute of Anthropology and History at Pachuca, Mexico. Titmus lectures at the Washington State University Flintknapping Field School annually. He is also on the editorial board of "Flintknappers' Exchange," an American journal of lithic technology.

His current research involves the replication and analysis of sophisticated stone tools including Danish daggers, Meso-American prismatic blades and American Paleo-Indian projectile points.

For additional information contact Jim Woods at Herrett Museum, 733-9554, Ext. 356.

CALL FOR PAPERS

IDAHO ARCHAEOLOGICAL SOCIETY 1982 MEETING

The Idaho Archaeological Society's 10th Annual Conference is tentatively scheduled for Saturday, October 16, 1982, at either the Boise State University or College of Southern Idaho campus—the exact date and location will be announced as soon as possible.

Volunteered papers should include current research, research findings, methods, experimentation, etc. Ethnohistoric and Native American topics will be considered. All presentations will be limited to 15 to 20 minutes and may include research conducted beyond state or national boundaries. You are also invited to submit ideas for Symposia or Special Sessions.

Please submit titles and suggestions by August 15 to either:

Max G. Pavesic
Program Chair
Dept. Soc., Athro. & CJA
Boise State University
Boise, Idaho 83725
(208) 385-3406

Jim Woods
Program Co-Chair
Herrett Museum
College of Southern Idaho
Twin Falls, Idaho 83301
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