

An Ethnohistorical Perspective on Plains Indian Textile Arts

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INTRODUCTION

The Plains geographical and cultural region is a vast grassland that covers much of mid-continental Canada and the United States. In historic times the Plains were home to a number of cultures, some of which made their living as nomadic hunter-gatherers, while others lived as semi-sedentary horticulturalists, deriving only part of their diet from hunting. Intensive study of Plains Indians over the last 125 years has, until recently, contributed to popular images of Plains Indians that emphasize post-horse adaptations like equestrian-based bison hunting and organized warfare epitomized by the flamboyant warrior (Bol 1985). Such a picture is congruous with an elaboration of hideworking and a preponderance of rawhide containers. However, there is another side to Plains Indian life and culture that has received little attention, one correlated with plant fiber-based industries.

The corpus of plant fiber-based objects from the prehistoric and historic Plains has largely been ignored. An examination of extant literature and a sample of museum specimens shows that Plains Indian textile arts like baskets, flexible bags, mats, and fish traps or weirs operated with a circumscribed but significant role in the material culture suite of Plains Indians. With a focus on ethnographic coiled gambling baskets, this paper offers a brief survey of Plains Indian textile arts and suggests a tentative model for the origin, development, and distribution of particular basketry types on the Plains in light of attribute-oriented basketry analyses and ethnohistorical information.

DESCRIPTIVE TERMINOLOGY

In the present context the term “textile” is used in its broadest sense to encompass several distinct types of items, including the more classic “flexible cloth with continuous-plane surfaces produced on frames or heddle looms (i.e., textiles proper)” (Adovasio 1996), as well as rigid and semi-rigid constructions, such as baskets and mats. As Driver (1961:159) has observed, matting includes objects that are virtually two-dimensional or flat, while baskets are three-dimensional; bags may be considered an intermediate form as they are essentially two-dimensional when empty and three-dimensional when filled. Herein, basketry denotes three major subclasses of weave that are typically mutually exclusive: twining, coiling, and plaiting. Descriptive terminology employed here follows Adovasio (1977) and Emery (1995).

PLAINS INDIAN TEXTILES

Although the historic Plains Indian textile repertoire is comparatively small, considerable diversity in both technique and form is represented. Twined mats of rush (*Scirpus* sp.) or cattail (*Typha* sp.) served a variety of functions, being most commonly used as seats, containers, and floor or roof coverings (Gilmore 1919; Grinnell 1962; Howard 1965; Weltfish 1965; Wilson 1934). Among the Osage for example, mats were sometimes sewn up along three edges and used as containers for storing household or ceremonial items (La Flesche 1918, 1921, 1930).

Flexible fiber bags were made by a number of the eastern prairie tribes for storing food and other household or ceremonial items (Douglas et al. 1969; Forelli 1973; Harrington 1913; Howard 1965, 1984; Skinner 1926; Wissler 1910, 1912). Employing a wide range of twining techniques these bags were principally made from nettle (*Urtica* sp.), basswood (*Tilia* sp.), cedar (*Juniperus* sp.), buffalo hair, and unraveled blanket wool (Whiteford 1977a, 1977b, 1978).

Simple and twill plaited fiber bags have also been collected, though they are much less common (Hatt 1941; Whiteford 1978).

Fish traps and weirs were open twined constructions known to the horticultural tribes (Bowers 1950, 1965; Gilmore 1924; Grinnell 1962; Wedel and Frison 2001) and perhaps several other groups bordering the western Great Lakes (DeMallie 2001; Peers 1994; Pond 1986). Vertical willow (*Salix* sp.) with warps were secured with wefts of sinew, rawhide, or commercial twine (Bowers 1950; Gilmore 1924; Grinnell 1962).

Plaited basketry was primarily restricted to tribes inhabiting the northern Plains. Twill plaited burden baskets were produced by the horticultural tribes and were made of interlaced strips of boxelder (*Acer negundo*) and peeled black willow bark (*Salix nigra* Marsh) over a willow frame (Douglas and Reynolds 1969; Gilmore 1925; Turnbaugh and Turnbaugh 1986; Wilson 1912). Among the Plains Ojibwa (Chippewa) plaited utilitarian baskets, made from ash (*Fraxinus* sp.) and willow (*Salix lucida*), came in a variety of forms (Schlick 1983; SIMCC 1990; Wyckoff 2001).

Small shallow coiled wares, characterized by their coarse workmanship, are typically found in the form of dice gambling baskets, or in far rarer instances, ceremonial basket trays. Ethnographic literature states that during the historic period these items were vigorously traded and only a few women among the Arikara, Cheyenne, Hidatsa, Mandan, and Pawnee were capable of making them (Jolie 2001b; Weltfish 1930a). Technologically, nearly all documented coiled work is rigid and close coiled, in rare cases exhibiting simple decoration. Basket walls vary from vertical to very oblique, with an occasional flare outward at the rim (Jolie 2001b; Weltfish 1930a). Animal hide or cloth pads are also commonly sewn to the base and rim for protection during gameplay. In terms of diagnostic technical attributes, variation is considerable and space or time preclude a detailed discussion here. However, it is informative to note that the two most common foundation types are a single whole rod or two whole rods vertically stacked (The reader is referred to Jolie [2001b] for a more detailed account of gambling basket technical attributes). Raw materials used in coiled basket manufacture commonly include willow bark (*Salix* sp.) or split yucca (*Yucca* sp.) leaf stitches sewn on a willow foundation (Jolie 2001b).

COILED GAMBLING BASKETS

Coiled gambling baskets were employed as a container into which dice were cast or shaken. Played principally by elderly women, the dice for this gambling basket game were made out of a variety of objects, including buffalo (*Bison bison*) ribs and long bones, wood, and most commonly, wild fruit pits (seeds) (*Prunus* sp.) (Culin 1907). Dice were incised or burned with a variety of symbolic or individualized decorations and wagers were commonly placed on the predicted outcome of one's throw. Scoring was determined by the number and arrangement of resulting dice symbols and scored with tallies of willow (*Salix* sp.) twigs (Culin 1907).

It is important to note here that the distinction between coiled gambling baskets and their ceremonial counterparts is vague. In some cases a gambling basket and ceremonial basket are one in the same (Libby 1906; SHSND n.d.), while in others they appear to have been two separate, but technologically indistinct baskets, the single exception being that they were sometimes produced under ritual restrictions (Murie 1981; Weltfish 1965).

Coiled gambling baskets of the type discussed here have been collected from the Arapaho, Arikara, Cheyenne, Comanche, Hidatsa, Kiowa, Mandan, Pawnee, and several Sioux

groups, particularly the Oglala (Jolie 2001b; Weltfish 1930a). The single ceremonial basket known to exist was collected from the Hidatsa (Schneider 1990:Plate 16).

BASKETRY, ETHNOHISTORY AND PLAINS PREHISTORY

It has long been held that textile arts like basketry are among the most “sensitive” classes of material culture available for study. Indeed, textiles and basketry survive their makers as invaluable documents of complex human behavior, representing in every case a series of complex decision-making steps (Adovasio 1977, 2000; Adovasio and Pedler 1994; Baumhoff 1957; Mason 1904; Weltfish 1932). In this vein, basketry endures the passing of time as an invaluable window into past cultures, in many cases elucidating both territorial boundaries and cultural identity across time and space (Adovasio 1986a; Adovasio and Hyland 1997; Adovasio and Pedler 1994; Adovasio et al. 2001; Hays-Gilpin et al. 1998; Maslowski 1984; Petersen et al. 2001; Weltfish 1930b). Considering this, the collection of attribute-oriented data for over 80 Plains Indian gambling baskets (Jolie 2000, 2001a, 2001b) has yielded results that, when considered in conjunction with available ethnohistorical data, allow for some speculation about the origin, development and distribution of particular basketry types on the prehistoric Plains.

In 1930 Gene Weltfish (1930a) proposed an explanation for the distribution and technical non-standardization characteristic of Plains gambling baskets. After examining seventeen gambling baskets in the National Museum of the American Indian collections, Weltfish suggested that the non-standardization of gambling baskets, based on such attributes as direction of work, stitch type, and foundation, was likely the result of the unique historical factors of the Plains region. In this regard, the high incidence of migration and tribal division which occurred on the Plains in both historic and prehistoric times clouds the issue of Plains plant fiber-based industries. However, Weltfish did identify what she thought were two types of gambling baskets: 1) A Pawnee type, identified by a left to right direction of work, and 2) a Shoshone type, characterized by a right to left direction of work.

Although Weltfish did not examine her proposal in detail, the results of the current study suggest several clues as to the potential historical factors that contributed to the distribution and technological diversity that characterizes the Plains Indian coiled gambling basket technical complex. These findings suggest that coiled gambling baskets represent one facet of a convergence of various prehistoric and historic population migrations and bifurcations. Herein, two technological types of gambling baskets, a Plains type and Shoshone type, met on the Plains as a result of different culture-historical and technological trajectories. In terms of technological distinction, the Shoshone variety exhibits a larger diameter, more uniform profile, right to left direction of work, and stitches that are exclusively non-interlocking on a two-rod vertically stacked foundation. Conversely, Weltfish’s so-called Pawnee type is less conventionalized than originally thought, exhibiting a high degree of diversity within the same suite of technical attributes (Jolie 2001b). Recast as a more generalized Plains type, it is potentially divisible into Northern and Southern Plains subtypes on the basis of raw material and frequency of split stitches.

A consideration of the distribution of prehistoric coiling in eastern North America yields interesting clues as to the historical factors which may have resulted in the distribution and technological non-standardization of ethnographic gambling baskets. The current study suggests that technical differentiation characteristic of the Southern Plains gambling basket subtype,

evidenced by stitch type and a preference for yucca sewing thread, belies an origin further south. The relatively high frequency of split stitches on Arapaho and Cheyenne baskets is notable when it is observed that Trans Pecos, Texas, and adjacent regions of Mexico have produced numerous specimens of prehistoric coiled basketry that exhibit high frequencies of split stitches on one or both surfaces (Adovasio 1980a, 1980b; McGregor 1992; Smith 1935). Additionally, technical similarities between coiling recovered from Trans Pecos, Texas, and the Ozark Bluff shelters of Arkansas have been noted with historic Plains Indian coiled gambling baskets (Adovasio 1974, 1980b; Andrews and Adovasio 1996:43–4; Scholtz 1975:44; Weltfish 1932:117). Given the Ozark Bluff shelters' location along the eastern border of the Plains it would make an ideal route for the arrival of particular varieties of basketry from the south onto the Plains during the late Archaic (4000–1000 B.C.) (Andrews and Adovasio 1996).

The unusual technical diversity evidenced by Plains gambling baskets is what one would expect if coiling diffused northward from Mexico and Texas, as well as through the Ozark Bluff corridor. It is a distinct possibility that these typically highly conservative technical attributes, upon arriving onto the Plains, became mixed and further amalgamated through intricate trading networks. This basketry tradition was possibly carried further north on the Plains by groups who may have been Siouan and Caddoan speakers ancestral to the Mandan and Hidatsa, and Arikara and Pawnee, respectively. As these populations progressed farther north on the Plains they undoubtedly met with increased inter-tribal marriage, trade, technological diffusion, and the introduction of hideworking. Together these factors further diluted what was once a distinct basketry tradition. The more conservative technical attributes of Shoshone gambling baskets may be explained as owing to their more recent arrival on the eastern Great Basin around A.D. 1000 (Adovasio 1986b; Adovasio with Illingworth 2000; Fowler and Dawson 1986; Shimkin 1986) and transient Plains occupations.

Technologically, Plains coiled basketry may have developed out of an extended tradition and innovation of parching tray food procurement strategies (cf. Adovasio 1970, 1974, 1986b). Unique to coiling is its structural ability to more evenly distribute heat. While twined winnowing and parching trays are common in the arid West, coiling represents the ideal technique of manufacture for the parching of highly nutritious seeds and nuts. With this understanding it is suggested that these shallow coiled baskets evolved from parching tray technology that over time lost its functional use among groups whose subsistence pattern may have shifted away from the specialized processing of seeds and nuts.

Interestingly, a relationship between food seeds or nuts and fruit seed dice does not seem out of the question when one considers the shaking motions involved in both parching and winnowing, especially as they compare mechanically to gambling basket play. During play the basket is lifted off the ground and then quickly slammed down, causing the dice to bounce up in the air and then fall back down to rest in the basket. That all fruit seed (pit) dice exhibit burned markings and a completely blackened reverse face is suggestive that they themselves may be descended, at least conceptually, from seeds once parched in a coiled tray. If it is also verifiable that women are traditionally the parchers and winnowers in a given culture, it might help explain why the game is played almost exclusively by women.

To elaborate, it may have been that prehistorically coiled baskets facilitated play of a common dice game at a time when parching was no longer feasible to the prehistoric population whose food procurement strategies were in transition. As prehistoric human populations in the New World moved, their food procurement strategies undoubtedly changed, eventually

alleviating the necessity for coiled parching trays. These shallow coiled receptacles, likely developed initially for parching, were retained as “survivals,” after which point they became accessories to any number of permutations of the dice gambling basket game. Examples of gambling dice are variously documented in the archaeological record (Gabriel 1996) as well. It is exciting to entertain this notion when Culin (1907:330–1) records an ethnographic twined Klamath basket that was used for *both* dice gambling and the drying of seeds. Further, Dr. Catherine S. Fowler (personal communication, 2001) recalls that among certain Shoshone groups, young girls played a similar dice basket game in practice for the motions they would later use in winnowing; in some instances the women had become so good they could manipulate the dice in the basket so that they came up with a desired combination.

The stimulus at the core of this technological shift may have been a transition to agricultural subsistence patterns. I would argue that plant fiber-based objects like basketry facilitated, and were complimentary to, such subsistence choice transitions. This theory appears to be supported, at least in part, by ethnographic evidence recording important ceremonial and agricultural rites that intimately associate corn with coiled and plaited basketry (Beckwith 1938; Bowers 1950, 1965; Gilmore n.d., 1930; Libby 1910; Murie 1981; Schneider 1990; Weltfish 1965; Will and Hyde 1917). Several stories recorded from the Arikara, Hidatsa, Mandan, and Pawnee, share a common feature in how a shallow coiled basket is ceremonially ordained as a symbol of growth and abundance. Indeed, with the potential arrival of new populations through the Southern Plains, and with them basketry and agriculture, it likely took little time before the region became a virtual confluence of plant fiber-based technological innovations. Collectively, ethnohistorical evidence and coiled basketry attribute data suggest a southern origin for coiled and perhaps plaited basketry on the Plains.

CONCLUSIONS

In retrospect, the documentation of a diverse inventory of textile products on the historic Plains dramatically attests to the ubiquity and importance of plant fiber-based technologies. Despite a proliferation of rawhide containers, textile arts clearly operated with a circumscribed but significant role in the material culture make-up and social milieu of historic, and likely prehistoric, Plains Indians.

Given these new questions raised about the origin, development, and distribution of Plains Indian coiled and plaited basketry, it is clear that substantial avenues for additional study exist. Future research should examine the other types of textiles found on the historic Plains, while also making it a primary goal to ask new questions about the role of plant fiber-based industries in Plains prehistory. If, as I have suggested, there is a decided link between developments in Plains plant fiber-based industries and a subsistence choice transition to agriculture (Jolie 2001b), there should be more clues in the archaeological record. It is my hope that the current study stimulates renewed interest in the ethnohistorical method, its potential for extrapolating culture-historical relationships, and making the most of available evidence.

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REFERENCES

- Adovasio, J. M.
1970 The Origin, Development and Distribution of Western Archaic Textiles and Basketry. *Tebiwa* 13(2):1–40.
1974 Prehistoric North American Basketry. In *Collected Papers on Aboriginal Basketry*, edited by D. R. Tuohy and D. L. Rendall, pp. 98–148. Anthropological Papers 16. Nevada State Museum, Carson City.
1977 *Basketry Technology: A Guide to Identification and Analysis*. Aldine Publishing Company, Chicago.
1980a The Evolution of Basketry Manufacture in Northeastern Mexico, Lower and Trans-Pecos Texas. In *Papers on the Prehistory of Northeastern Mexico and Adjacent Texas*, edited by J. F. Epstein, T. R. Hester, and C. Graves, pp. 93–102. Center for Archaeological Research Special Report No. 9. University of Texas at San Antonio, San Antonio, Texas.
1980b Prehistoric Basketry of Western North America and Mexico. In *Early Native Americans: Prehistoric Demography, Economy and Technology*, edited by D. Browman, pp. 341–362. Mouton, The Hague.
1986a Artifacts and Ethnicity: Basketry as an Indicator of Territoriality and Population Movements in the Prehistoric Great Basin (with R. L. Andrews). In *Anthropology of the Desert West: Essays in Honor of Jesse D. Jennings*, edited by C. J. Condie and D. D. Fowler, pp. 43–89. University of Utah Anthropological Papers No. 110. University of Utah Press, Salt Lake City.
1986b Prehistoric Basketry. In *Handbook of North American Indians*, vol. 11, *Great Basin*, edited by W. L. d’Azevedo, pp. 194–205. W. C. Sturtevant, general editor. Smithsonian Institution, Washington, D. C.
1996 Textiles. In *The Oxford Companion to Archaeology*, edited by B. M. Fagan, pp. 709–710. Oxford University Press, New York.

2000 Style, Basketry, and Basket Makers: Agency Concretized in a Perishable Medium. Paper presented at the 33rd Annual Chacmool Conference, Calgary, Canada.

Adovasio, J. M., and D. C. Hyland

1997 Caves and Perishable Artifacts: Unique "Windows" into the Past. Paper presented at the 62nd Annual Meeting of the Society for American Archaeology, Nashville, Tennessee.

Adovasio, J. M., with J. S. Illingworth

2000 The Evolution of Plant Fiber Artifact Manufacture in the Eastern Great Basin: A Turn of the Millennium Perspective. Paper presented at the 27th Great Basin Anthropological Conference, Ogden, Utah.

Adovasio, J. M., and D. R. Pedler

1994 A Tisket, a Tasket: Looking at Numic Speakers Through the "Lens" of a Basket. In *Across the West: Human Population Movement and the Expansion of the Numa*, edited by D. B. Madsen and D. H. Rhode, pp. 114–123. University of Utah Press, Salt Lake City.

Adovasio, J. M., D. R. Pedler, and J. S. Illingworth

2001 Fremont Basketry. Report prepared for the United States Department of the Interior, Bureau of Reclamation-SLC. Ms. on file at Mercyhurst Archaeological Institute, Erie, Pennsylvania.

Andrews, R. L., and J. M. Adovasio

1996 The Origins of Fiber Perishables Production East of the Rockies. In *A Most Indispensable Art: Native Fiber Industries from Eastern North America*, edited by J. B. Petersen, pp. 30–49. University of Tennessee Press, Knoxville.

Baumhoff, M. A.

1957 Introduction. In *Basketry: A Proposed Classification by Hélène Balfét*, University of California Archaeological Survey Reports No. 38. University of California, Berkeley.

Beckwith, M. W.

1938 *Mandan-Hidatsa Myths and Ceremonies*. Memoirs of the American Folk-Lore Society 32. American Folk-Lore Society, J. J. Augustin, New York.

Bol, M. C.

1985 Lakota Women's Artistic Strategies in Support of the Social System. *American Indian Culture and Research Journal* 9(1):33–51.

Bowers, A. W.

1950 *Mandan Social and Ceremonial Organization*. University of Chicago Press, Chicago.

1965 Hidatsa Social and Ceremonial Organization. *Bureau of American Ethnology Bulletin* 194. Government Printing Office, Washington, D. C.

- Culin, S.
 1907 Games of the North American Indians. In *Twenty-Fourth Annual Report of the Bureau of American Ethnology, 1902-'03*, pp. 1–810. Government Printing Office, Washington, D. C.
- DeMallie, R. J.
 2001 Yankton and Yanktonai. In *Handbook of North American Indians*, vol. 13, Part II of II, *Plains*, edited by R. J. DeMallie, pp. 777–793. W. C. Sturtevant, general editor. Smithsonian Institution, Washington, D. C.
- Douglas, F. H., and F. Raynolds
 1969 An Hidatsa Burden Basket. In *Material Culture Notes*, edited by N. Feder, pp. 80–86. Denver Art Museum, Denver.
- Douglas, F. H., F. Raynolds, and N. Feder
 1969 An Osage Yarn Bag. In *Material Culture Notes*, edited by N. Feder, pp. 37–44. Denver Art Museum, Denver.
- Driver, H. E.
 1961 *Indians of North America*. University of Chicago Press, Chicago.
- Emery, I.
 1995 *The Primary Structures of Fabrics: An Illustrated Classification*. Revised 1980. The Textile Museum, Washington, D. C. Reprinted by Watson-Guptil Publications, the Whitney Library of Design, and the Textile Museum, Washington, D. C.
- Forelli, S.
 1973 The Twined Bags of the Indians of the Western Great Lakes. Unpublished MS thesis, University of Wisconsin, Madison.
- Fowler, C. S., and L. E. Dawson
 1986 Ethnographic Basketry. In *Handbook of North American Indians*, vol. 11, *Great Basin*, edited by W. L. d'Azevedo, pp. 705–737. W. C. Sturtevant, general editor. Smithsonian Institution, Washington, D. C.
- Gabriel, K.
 1996 *Gambler Way: Indian Gaming in Mythology, History, and Archaeology in North America*. Johnson Books, Boulder, Colorado.
- Gilmore, M. R.
 n. d. Piraskani Ceremony of the Arikara. George Will Papers, North Dakota State Historical Society.
 1919 Uses of Plants by the Indians of the Missouri River Region. In *33rd Annual Report of the Bureau of American Ethnology, 1911-'12*, pp. 43–154. Government Printing Office, Washington, D. C.

- 1924 Arikara Fish-Trap. *Indian Notes* 1(3):120–134. Museum of the American Indian, Heye Foundation, New York.
- 1925 Arikara Basketry. *Indian Notes* 2(2):89–95. Museum of the American Indian, Heye Foundation, New York.
- 1930 A Harvest Home Ceremony of the Arikara. George Will Papers, North Dakota State Historical Society.

Grinnell, G. B.

- 1962 *The Cheyenne Indians: Their History and Ways of Life*, 2 volumes. Cooper Square Publishers, New York.

Harrington, M. R.

- 1913 A Visit to the Otoe Indians. *The Museum Journal, University of Pennsylvania* 4:107–113.

Hatt, M. R.

- 1941 *Basketry of the North American Indian: With Notes on Michigan Canoes and Pottery*. Exhibition catalog. Cranbrook Institute of Science, Bloomfield Hills, Michigan.

Hays-Gilpin, K. A., A. C. Deegan, and E. A. Morris

- 1998 *Prehistoric Sandals from Northeastern Arizona: The Earl H. Morris and Ann Axtell Morris Research*. Anthropological Papers of the University of Arizona No. 62. University of Arizona Press, Tucson.

Howard, J. H.

- 1965 The Ponca Tribe. *Bureau of American Ethnology Bulletin* 195. Government Printing Office, Washington, D. C.
- 1984 *The Canadian Sioux*. University of Nebraska Press, Lincoln.

Jolie, E. A.

- 2000 Two Ethnographic Cheyenne Gambling Baskets. Report prepared for D. G. Harding, Carnegie Museum of Natural History, Pittsburgh, Pennsylvania. Ms. on file at the R. L. Andrews Center for Perishables Analysis, Mercyhurst Archaeological Institute, Erie, Pennsylvania.
- 2001a Two Ethnographic Sioux Twined Gambling Baskets. Report prepared for J. Landmann, South Dakota State Historical Society Cultural Heritage Museum, Pierre, South Dakota. Ms. on file at the R. L. Andrews Center for Perishables Analysis, Mercyhurst Archaeological Institute, Erie, Pennsylvania.
- 2001b The Technomechanics of Plains Indian Coiled Gambling Baskets. Ms. on file with the author.

La Flesche, F.

- 1918 Tribal Rites of the Osage Indians. *Smithsonian Miscellaneous Collections* 68(12):84–90.
- 1921 The Osage Tribe: Rites of the Chiefs. In *36th annual Report of the Bureau of American Ethnology, 1914–'15*, pp. 35–598. Government Printing Office, Washington, D. C.

1930 The Osage tribe: Rite of the Wa-xo'-be. In *45th annual Report of the Bureau of American Ethnology, 1927-'28*, pp. 523–682. Government Printing Office, Washington, D. C.

Libby, O. G.

1906 A Mandan Woman's Game. *Collections of the North Dakota Historical Society* 1:444–45.

1910 The Story of Corn Silk, An Ancient Mandan Legend. *Collections of the North Dakota Historical Society* 3:688–707.

Maslowski, R. F.

1984 Cordage Twist and Ethnicity. Paper presented at the 49th Annual Meeting of the Society for American Archaeology, Portland, Oregon.

Mason, O. T.

1904 Aboriginal American Basketry: Studies in a Textile Art Without Machinery. *Annual Report of the U.S. National Museum for 1901–1902*, pp. 171–548. Government Printing Office, Washington, D. C.

McGregor, R.

1992 *Prehistoric Basketry of the Lower Pecos, Texas*. Monographs in World Archaeology No. 6. Prehistory Press, Madison, Wisconsin.

Murie, J. R.

1981 *Ceremonies of the Pawnee, Part I: The Skiri*. Edited by with an introduction by D. R. Parks. Smithsonian Contributions to Anthropology 27. Smithsonian Institution Press, Washington, D. C.

Peers, L. L.

1994 *The Ojibwa of Western Canada, 1780 to 1870*. Minnesota Historical Society Press, St. Paul.

Petersen, J. B., M. J. Heckenberger, and J. A. Wolford

2001 Spin, Twist, and Twine: An Ethnoarchaeological Examination of Group Identity in Native Fiber Industries from Greater Amazonia. In *Fleeting Identities: Perishable Material Culture in Archaeological Research*, edited by P. B. Drooker, pp. 226–253. Occasional Paper No. 28. Center for Archaeological Investigations. Southern Illinois University, Carbondale.

Pond, S. W.

1986 *The Dakota or Sioux in Minnesota: As They Were in 1834*. Minnesota Historical Society Press, St. Paul.

Schlick, M. D.

1983 Ojibwa/Chippewa Basketry: A Search for Basketmakers. *American Indian Basketry* 3(3):15–18.

Schneider, M. J.

1990 Plains Indian Basketry: Techniques and Uses. In *The Art of Native American Basketry: A Living Legacy*, edited by F. W. Porter, pp. 107–134. Greenwood Press, New York

Scholtz, S. C.

1975 *Prehistoric Plies: A Structural and Comparative Analysis of Cordage, Netting, Basketry, and Fabric from Ozark Bluff Shelters*. Arkansas Archaeological Survey Research Series 9. University of Arkansas Museum, Fayetteville.

Shimkin, D. B.

1986 Eastern Shoshone. In *Handbook of North American Indians*, vol. 11, *Great Basin*, edited by W. L. d'Azevedo, pp. 308–335. W. C. Sturtevant, general editor. Smithsonian Institution, Washington, D. C.

Sioux Indian Museum and Crafts Center (SIMCC)

1990 *Baskets: Red Willow and Birchbark*. Exhibition, January 21 to March 22, 1990. Sioux Indian Museum and Crafts Center, Rapid City, South Dakota.

Skinner, A.

1926 Ethnology of the Ioway Indians. *Bulletin of the Public Museum of the City of Milwaukee* 5(4):189–353.

Smith, V. J.

1935 The Split Stitch Basket, A Distinguishing Culture Trait of the Big Bend in Texas. *Bulletin of the Texas Archaeological and Paleontological Society* 7:100–104.

State Historical Society of North Dakota (SHSND)

n.d. Information File Data Sheets for Accession Numbers 161, 558, 559, and 560. Documents on file at the State Historical Society of North Dakota, Bismarck.

Turnbaugh, S. P., and W. A. Turnbaugh

1986 *Indian Baskets*. Schiffer Publishing, Atglen, Pennsylvania.

Wedel, W. R., and G. C. Frison

2001 Environment and Subsistence. In *Handbook of North American Indians*, vol. 13, Part I of II, *Plains*, edited by R. J. DeMallie, pp. 44–60. W. C. Sturtevant, general editor. Smithsonian Institution, Washington, D. C.

Weltfish, G.

1930a Coiled Gambling Baskets of the Pawnee and Other Plains Tribes. *Indian Notes* 7(3):277–295. Museum of the American Indian, Heye Foundation, New York.

1930b Prehistoric North American Basketry Techniques and Modern Distributions. *American Anthropologist* 32:454–495.

- 1932 Problems in the Study of Ancient and Modern Basket Makers. *American Anthropologist* 34:108–117.
- 1965 *The Lost Universe*. Basic Books, New York.

Whiteford, A. H.

- 1977a Fiber Bags of the Great Lakes Indians, Part I. *American Indian Art Magazine* 2(3):52–64, 85.
- 1977b Fiber Bags of the Great Lakes Indians, Part II. *American Indian Art Magazine* 3(1):40–47, 90.
- 1978 Tapestry-Twined Bags, Osage Bags and Others. *American Indian Art Magazine* 3(2):32–39, 92.

Will, G., and G. F. Hyde

- 1917 *Corn Among the Indians of the Upper Missouri*. William H. Miner, New York.

Wilson, F. N.

- 1912 Hidatsa Basket-making. Hidatsa-Mandan Field Report—Fort Berthold Reservation, vol. 12a, pp. 1–27. Gilbert L. Wilson Papers, Minnesota Historical Society.

Wilson, G. L.

- 1934 The Hidatsa Earthlodge. *Anthropological Papers of the American Museum of Natural History* 33(4): 347–420.

Wissler, C.

- 1910 Material Culture of the Blackfoot Indians. *Anthropological Papers of the American Museum of Natural History* 5(1):1–175.
- 1912 Ceremonial Bundles of the Blackfoot Indians. *Anthropological Papers of the American Museum of Natural History* 7(2):65–298.

Wyckoff, L. L.

- 2001 Prairie & Plains. In *Woven Worlds: Basketry from the Clark Field Collection*, edited by L. L. Wyckoff, pp. 139–147. The Philbrook Museum of Art, Tulsa.