David G. Rice
Department of Anthropology and Sociology
University of Idaho
Moscow, Idaho

A Potential Early Man Locality in South-Central Washington

Recent archaeological finds have focused on the problem of early man in the Pacific Northwest. Archaeological discoveries at Marmes Rockshelter on the Palouse River in 1968, for instance, are notable not only for human skeletal material which dates as far back as 9,000-10,000 years or more, but also for a carefully documented record of the sequence of cultural and geological materials which duplicate that time span and represent a large part of what we know about the relationship between cultural and environmental events in the southern Columbia Plateau over the last 10,000-12,000 years (Fryxell and Daugherty, 1963; Fryxell, 1963). Additional archaeological evidence for early man in the Northwest has recently been obtained from the Wildcat Canyon site, Oregon, where an 11,000 year cultural sequence has been established in the now inundated reservoir area of the John Day Dam on the Columbia River (Cole, 1965; personal communication), and from the Five-Mile Rapids site, Oregon, near the Long Narrows of the Columbia which also produced a cultural sequence dating back 11,000 years (Cressman and Others, 1960). In view of evidence of this sort, the recent paleontological fieldwork conducted by W. E. Fry in the Horse Heaven Hills, discussed in the following paper, points out one of the more promising localities having potential for early man sites in Washington State, one in which associated finds of artifacts and extinct faunal remains will almost certainly be revealed. It is the archaeological material recovered by Mr. Fry in his explorations that is relevant to the problem of early man and therefore under discussion here.

The Locality

The Horse Heaven Hills are a low lying, east-west trending range of hills that lie between the lower Yakima Valley to the north and the Columbia River Valley to the south (Fig. 1). The specific area under discussion lies on the southern flanks of the Horse Heaven Hills between Kennewick, Washington, and Umatilla, Oregon. The paleontological explorations of Mr. Fry include most of the upper course of Fourmile Canyon, including its northern tributary canyons.

The surface geology of the Horse Heaven Hills region is characterized by eolian deposits with buff to light-brown, massive, homogeneous, unconsolidated loessial silt, with some water-laid material locally (Huntting and Others, 1961). These are thought to be late Pleistocene and Recent deposits. In addition, volcanic ash deposits from both the Mt. Mazama and Glacier Peak eruptions, 6,700-6,900 and 11,000-12,000 years old respectively, are exposed in most of the canyon walls and provide very useful horizon markers for evaluating the chronological position of artifacts and fossils alike.

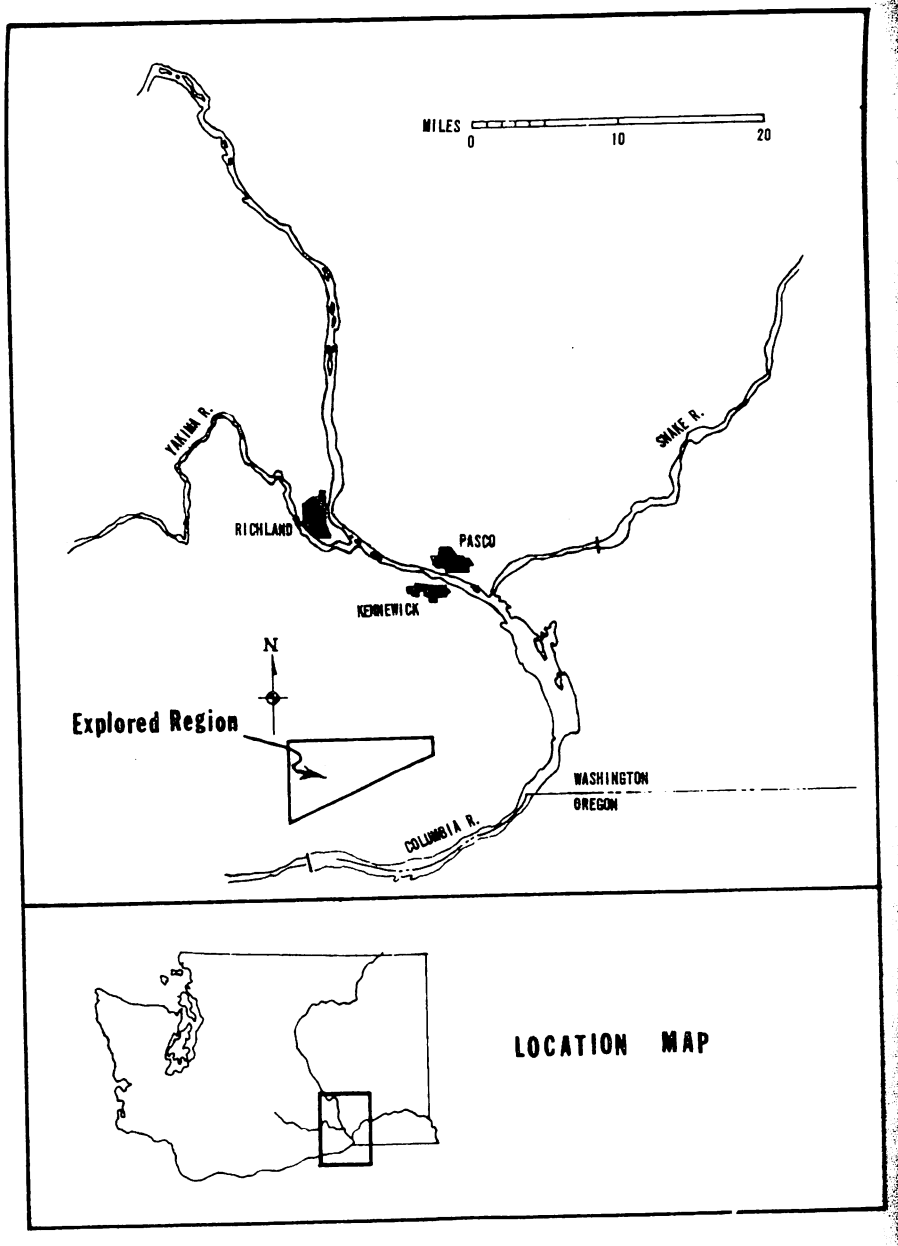


Figure 1. Map showing the location of region of exploration.

The Probability of Finding an Early Man Site

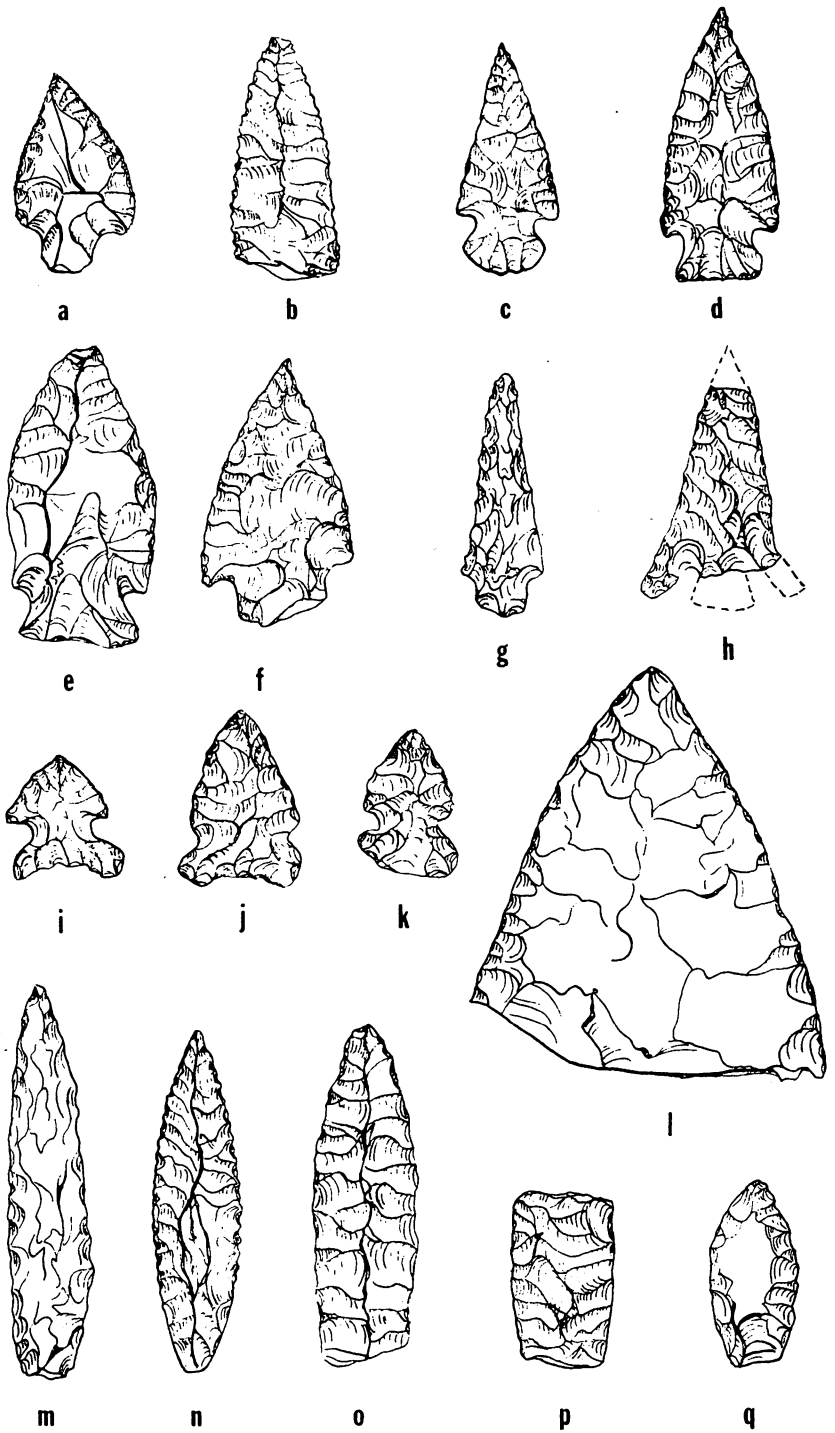
There are a number of factors that increase the probability of finding an association between extinct fauna and artifacts in this locality. First, the Horse Heaven Hills are bounded on three sides by major river valleys which have proven to have evidence of early hunters dating as far back as 10,000-12,000 years. It is certain that these hunters did not restrict their activities to the river basins, and it is equally certain that they must have utilized the increased game resources that appear to have abounded during the cooler and moister climatic conditions of the late Pleistocene. More important in the argument for antiquity, however, is the fact that sites in the Horse Heaven Hills having an elevation in excess of about 1,200 feet, unlike those in the river basins, were not subject to destruction or disturbance by the catastrophic floods during the late Pleistocene (Richmond and Others, 1965; Brown, 1968). Sites at lower elevations, yet well above the present river elevation, would have been subject to fewer floods and less severe eroding currents than sites near the bottom of the channel. Therefore, early man sites in the Horse Heaven Hills very probably exist by virtue of their likely preservation from the floods associated with the draining of various glacial lakes. Further, there is the possibility that a high river level of extended duration, created by abundant glacial melt water during the late Pleistocene, was attractive to the fauna of the area, and that early hunters took advantage of hunting opportunities along the shore facies. Finally, there are sites in other parts of the state which lie outside of the river basins and which show great antiquity. Perhaps the most prominent of these is the Lind Coulee site near Warden, Washington, where chipped stone projectiles and other tools were found in association with bison bones in geological deposits radiocarbon dated at 8,700 $\pm$ 400 years in age (Daugherty, 1956). Lind Coulee is now thought to date between 11,000 and 13,000 years old on geological grounds, making it the oldest known archaeological site in the state of Washington (R. D. Daugherty, personal communication).

The Achaeological Evidence

The following paragraphs describe and discuss 20 archaeological specimens found by Mr. Fry during his paleontological explorations in the Horse Heaven Hills. While many of these artifacts were found in close proximity to the fossilized remains of extinct fauna, the artifacts were surface finds and cannot be directly related to the fossil material.

Specimen: T-124. Projectile point. (Fig. 2-a). Cryptocrystalline silica. Length 3.7 cm. width 2.5 cm., thickness 0.7 cm. This point is of triangular form and is stemmed and shouldered. It has been pressure flaked around the edges to give it form, but otherwise amounts to little more than the flake upon which it is based. The piece cannot be properly placed in time.

Specimen: T-111. Projectile point tip. (Fig. 2-b). Cryptocrystalline silica. Length 4.8 cm., width 2.0 cm., thickness 0.6 cm. This is the tip of a point which probably was notched at the base. It has been evenly serrated along both edges. The piece has been produced by pressure flaking and appears to have been worked at two different times as there are older, more weathered flake scars on both faces of the point. This specimen cannot be placed properly in time, but probably dates from the last 2,000 years.



Specimen: T-103. Projectile point. (Fig. 2-C). Cryptocrystalline silica. Length 4.4 cm., width 2.0 cm., thickness 0.7 cm. This is a triangular corner removed point with a convex base. The point has been evenly shaped using pressure flaking techniques, and exhibits short basal thinning scars. This point could date anywhere in the last 2,500 years.

Specimen: T-110. Projectile point. (Fig. 2-d). Cryptocrystalline silica. Length 5.3 cm., width 2.4 cm., thickness 0.7 cm. This is a triangular corner removed point with a straight base. The piece has been completely formed by pressure flaking. This point style is not well placed in time, but probably dates 2,000-4,000 years old.

Specimen: T-127. Projectile point. (Fig. 2-e). Cryptocrystalline silica. Length 5.9 cm., width 3.0 cm., thickness 1.7 cm. This is a triangular corner removed point with a straight base. The piece has been roughly formed by percussion flaking, and has been notched and partly thinned by pressure flaking. The point probably was never completed. This point style is not well placed in time, but probably dates 2,000-4,000 years old.

Specimen: T-128. Projectile point. (Fig. 2-f). Cryptocrystalline silica. Length 5.2 cm., width 3.1 cm., thickness 0.8 cm. This point is of triangular form and is stemmed and shouldered. It was formed by pressure flaking. The piece cannot be properly placed in time, but probably dates 2,000-4,000 years old.

Specimen: T-91. Projectile point. (Fig. 2-g). Basalt. Length 4.6 cm., width 1.5 cm., thickness 0.5 cm. This piece is of slender triangular form and is stemmed and shouldered. The artifact was constructed using percussion flaking techniques. The form, material, and workmanship is characteristic of finds from several sites along the middle Columbia River which appear to date between 3,000 and 5,000 years old.

Specimen: T-86. Projectile point with fragmented base and tip. (Fig. 2-h). Cryptocrystalline silica. Length 4.1 cm., width 2.7 cm., thickness 0.6 cm. This piece is a large triangular basal notched point which was formed primarily by pressure flaking. The form, material, and workmanship of the point is identical to specimens from a great many sites along the middle Columbia River and the lower Snake which date about 2,000-2,500 years old.

Specimen: T-98. Projectile point. (Fig. 2-i). Obsidian. Length 2.4 cm., width 2.2 cm., thickness 0.7 cm. This is a triangular side notched point with a concave base. The specimen was formed entirely by pressure flaking. Like specimens T-97 and T-99 this piece probably dates between 5,000 and 6,500 years old.

Specimen: T-97. Projectile point. (Fig. 2-j). Obsidian. Length 3.5 cm., width 2.5 cm., thickness 0.8 cm. This is a triangular side notched point with a slightly concave

Figure 2. a. Projectile point, probable age unknown; b. Projectile point tip, probable age <2,000 years; c. Projectile point, probable age <2,500, years; d. Projectile point, probable age 2,000-4,000 years; e. Projectile point, probable age 2,000-4,000 years; f. Projectile point, probable age 2,000-4,000 years; g. Projectile point, probable age 3,000-5,000 years; h. Projectile point with fragmental base and tip, probable age 2,000-2,500 years; i. Projectile point, probable age 5,000-6,500 years; j. Projectile point, probable age 5,000-6,500 years; k. Projectile point, probable age 5,000-6,500 years; l. Knife fragment, probable age approximately 6,000 years; m. Projectile point, probable age 6,500-8,000 years; n. Projectile point, probable age 7,000-8,000 years; o. Projectile point with fragmented base, probable age 11,000-13,000 years; p. Point or knife midsection, probable age 7,000-8,000 years; q. Projectile point with fragmented base, probable age 8,000-9,000 years.

base. The point was shaped primarily by broad, percussion-struck flakes, and then notched using pressure flaking. Points of this form and workmanship are frequently found just above the Mazama volcanic ash in sites along the middle Columbia and Snake Rivers, and date between 5,000 and 6,500 years old.

Specimen: T-99. Projectile point. (Fig. 2-k). Cryptocrystalline silica. Length 2.9 cm., width 1.9 cm., thickness 0.7 cm. This is a triangular side notched point with a straight base. The item was roughly formed by percussion flaking and then notched and pointed by pressure flaking. Like specimens T-97 and T-98 this piece probably dates between 5,000 and 6,500 years old.

Specimen: T-17. Knife fragment. (Fig. 2-l). Basalt. Length 7.8 cm., width 6.9 cm., thickness 0.7 cm. This item was thinned by well controlled percussion flaking and then shaped around the edges with pressure flaking. The piece is notable for being quite thin in relation to its overall size. The chipping technology, material, and provenience of the specimen upon deflated bed of Mazama volcanic ash all suggest that the artifact is about 6,000 years old.

Specimen: T-39. Projectile point. (Fig. 2-m). Basalt. Length 7.7 cm., width 1.7 cm., thickness 0.8 cm. The piece is leaf-shaped in form and retails at its base the striking platform of the flake upon which the point is based. Well-controlled percussion flaking techniques were used in forming the point and there is little evidence to suggest retouching along the edges by pressure flaking. Points of this form and material are commonly found along the Snake and Columbia Rivers and are known to date between 6,500 and 8,000 years old.

Specimen: T-82. Projectile point. (Fig. 2-n). Basalt. Length 6.6 cm., width 1.8 cm., thickness 0.7 cm. This item is leaf-shaped in form and is finely serrated along both edges for two-thirds of its length. The point was roughly formed by percussion flaking and then meticulously refined and shaped with narrow, even pressure flaking. This piece probably dates between 7,000 and 8,000 years old.

Specimen: T-64. Projectile point with fragmented base. (Fig. 2-o). Cryptocrystalline silica. Length 6.6 cm., width 2.1 cm., thickness 0.4 cm. This point is leaf-shaped in form and was produced entirely by percussion flaking technique. The edges are rough and irregular, but the flake scars are mostly broad, even, and colateral, forming a very slight median ridge on both faces of the point. The size, form, material, and workmanship of this point are nearly identical to specimens recovered from the Lind Coulee site which are thought to date between 11,000 and 13,000 years on geological grounds.

Specimen: T-109. Point or knife midsection. (Fig. 2-p). Cryptocrystalline silica. Length 3.4 cm., width 2.1 cm., thickness 0.7 cm. This specimen was probably leaf-shaped in form and was fashioned by both percussion and pressure flaking techniques. The item cannot be properly placed in time, but resembles specimens which date 7,000-8,000 years.

Specimen: T-23. Projectile point with fragmented base. (Fig. 2-q). Cryptocrystalline silica. Length 3.6 cm., width 1.8 cm., thickness 0.5 cm. This piece has a leaf-shaped form and was flaked randomly using pressure flaking techniques. The form, workmanship, and material of the point closely resembles specimens from the lower levels of the Marmes Rockshelter and Windust Cave which are thought to date from 8,000-9,000 years old.

Specimen: T-106. Knife midsection. Cryptocrystalline silica. Length 2.6 cm., width 2.7 cm., thickness 0.8 cm. This fragment was formed by percussion flaking. It is too fragmentary to properly place into a time perspective.

Specimen: T-107. Knife tip? Crystalline. Length 3.3 cm., width 3.3 cm., thickness 0.8 cm. This fragment was formed by percussion flaking. It is too fragmentary to properly place into a time perspective.

Specimen: T-119. Projectile point midsection. Cryptocrystalline silica. Length 2.8 cm., width 1.9 cm., thickness 0.5 cm. This is the midsection of a point which was side or corner notched. It was produced primarily by pressure flaking. The piece cannot be properly placed in time.

Conclusion

The data presented here suggests great potential for early man sites in the Horse Heaven Hills locality. Potential, however, is only useful if it is followed up and examined further. Hopefully, the work of Mr. Fry can serve as a base for more intensive research in paleonthology and archaeology which can realize the potential that exists in this locality and further our knowledge of early man in this part of the Northwest.

Acknowledgements

The writer is indebted to Mr. W. E. Fry, Kennewick, Washington, who brought these finds to the attention of the Laboratory of Anthropology, Washington State University; to Mr. Randall Brown, Battelle-Northwest, for providing field examination of the locality; and to Mrs. Harold R. Twehus, Pasco, for illustrating the artifacts in Figure 2.

Literature Cited

Brown, Randall E. 1968. A study of Reported Faulting in the Pasco Basin. AEC Research and Development Report, BNWL-662. Battelle-Northwest, Richland.

Cole, David L. 1965. Report on Archaeological Research in the John Day Dam Reservoir Area—1964. Report submitted to the National Park Service, Eugene.

Cressman, Luther S. and Others. 1960. Cultural Sequence at The Dalles, Oregon. Transactions of the American Philosophical Society, n.s., Vol. 50, Part 10. Philadelphia.

Daugherty, Richard D. 1956. Archaeology of the Lind Coulee Site, Washington. Proceedings of the American Philosophical Society, Vol. 100. No. 3, pp. 223-78. Philadelphia.

Fryxell, Roald. 1963. Through a Mirror, Darkly. The Record (1963), pp. 1-18. Pullman.

Fryxell, Roald and Richard D. Daugherty. 1963. Late Glacial and Postglacial Geological and Archaeological Chronology of the Columbia Plateau, Washington. Washington State University, Laboratory of Anthropology, Reports of Investigations, No. 23. Pullman.

Huntting, Marshall T. and Others. 1961. Geologic Map of Washington. Washington Department of Conservation, Division of Mines and Geology. Olympia.

Richmond, Gerald M. and Others. 1965. The Cordilleran Ice Sheet of the Northern Rocky Mountains, and Related Quarternary History of the Columbia Plateau. In The Quarternary of the United States, Edited by H. E. Wright, Jr., and D. G. Frey. Princeton.

Accepted for publication April 24, 1969