

**ARCHAEOLOGICAL TEST EXCAVATIONS
IN FRYINGPAN ROCKSHELTER,
MOUNT RAINIER NATIONAL PARK**

by

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LABORATORY OF ANTHROPOLOGY
REPORT OF INVESTIGATIONS NO. 33

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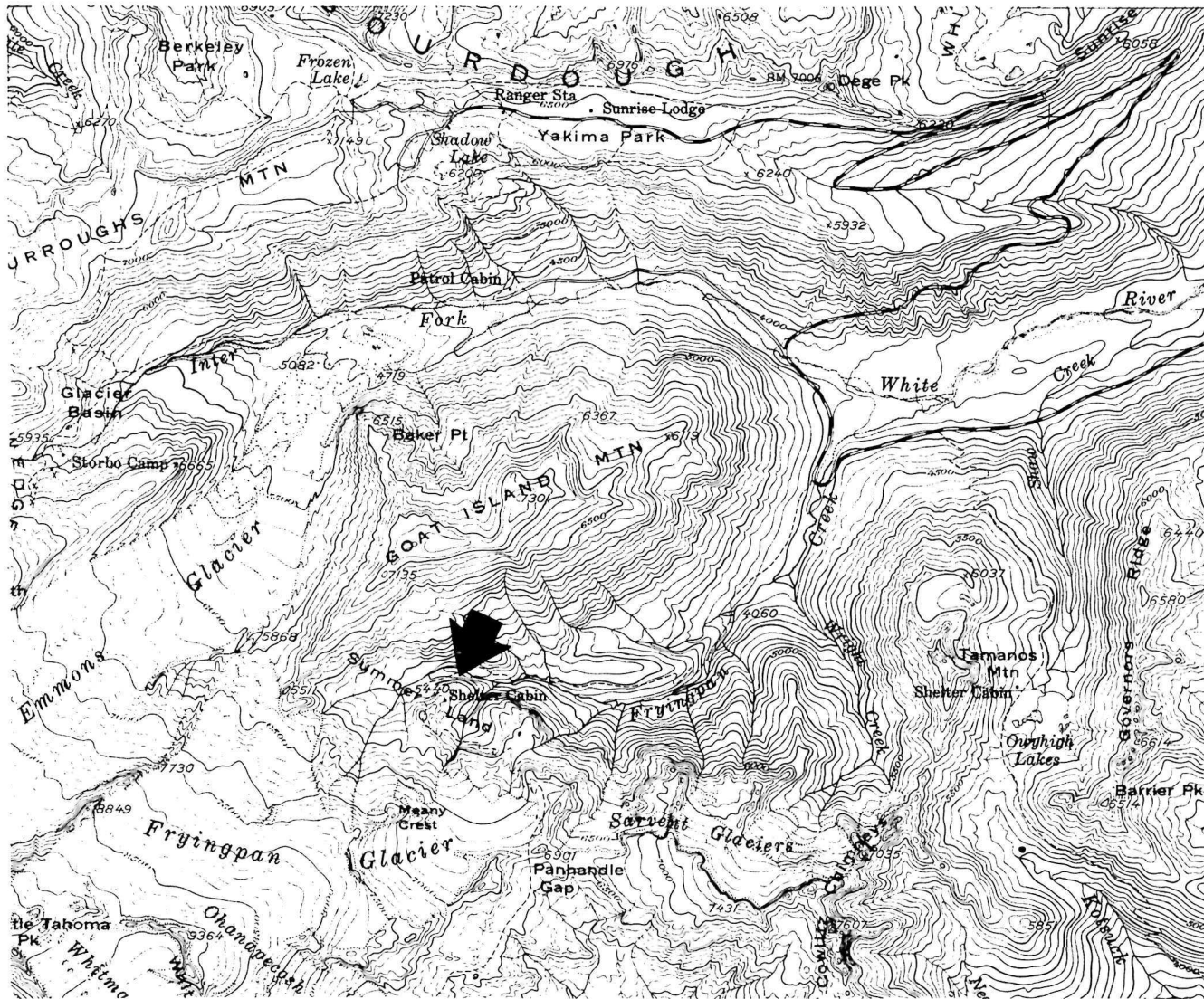
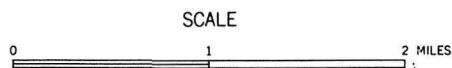


Figure 1. Map of Mount Rainier National Park, Northeast Sector, illustrating the location of 45PI43.



CONTOUR INTERVAL 100 FEET

ARCHAEOLOGICAL TEST EXCAVATIONS IN FRYINGPAN

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Introduction

Mount Rainier National Park is one of the most naturally diversified sectors of the Pacific Northwest. Several handbooks and pamphlets have been written describing with considerable detail the flora (Schmoe 1925), the fauna (Potts and Grater 1949), and the geology (Fiske et al. 1963) of the park area. However, one resource which relates to all of these has never been investigated. Never before has a scientific study been conducted which deals with the relationship of the environment to prehistoric man within the confines of the park area. Indeed, it has been the belief of many that prehistoric man did not inhabit the park area. Now, for the first time, an archaeological site of some depth has been located and tested.

During August of 1963, Washington State University sent a field crew into the park for the purpose of locating archaeological materials. The site herein reported was located at that time. In September of 1964, a two-man team consisting of David G. Rice and Charles M. Nelson conducted test excavations at that site under the general direction of Dr. Richard D. Daugherty, Professor of Anthropology at Washington State University, Pullman, Washington.

Evidence from this site indicates that the resources offered by Mount Rainier and vicinity have been utilized for several centuries. Also, it is now evident that Indian utilization of the park was a normal and established activity in the total way of life of several aboriginal peoples in the Pacific Northwest. What follows is a report of findings at 45-PI-43, the highest known archaeological site in the state of Washington--a full 5,300 feet above sea level.

Location

Fryingpan Rockshelter, 45-PI-43, lies circa 3.4 miles up the Summer Land Trail from where the road to Sunrise crosses Fryingpan Creek (see map, Fig. 1). The site is minimally an hour's hike from the latter point (lower left center of Fig. 2), and it lies 1,400 feet higher. Looking southwest from Sunrise Vista (Fig. 2), 45-PI-43 lies just left of the summit of Goat Island Mountain and is hidden by it.

Fryingpan Rockshelter rests at the mouth of a northeast-southwest oriented valley of parkland character. At the head of

the valley (the southwest end) lies Fryingpan Glacier, the source of Fryingpan Creek. At this point the valley is approximately 0.6 miles across. The mouth of the valley (the northeast end) lies circa 0.7 miles down stream and pinches out between a buttress of Goat Island Mountain and the steep rock outcroppings of Summer Land. Looking south from the horse ford at Fryingpan Creek, situated at the mouth of the valley, one can plainly see the rockshelter (see right center of Fig. 3) as a dark, triangular-shaped spot set into a steep-faced rock formation. A large coniferous tree projects out of the shelter (see Fig. 4).

Setting

Fryingpan Rockshelter geologically lies in the Ohanapecosh Formation which is Eocene in age. The formation in the vicinity of 45-PI-43 is characterized by "local thick accumulations of basaltic andesite flows and coarse mud flows" (Fiske et al. 1963: Plate 1).

Apart from the basic geological framework just described, there is another significant geological feature. Half a dozen distinct deposits of volcanic ash and pumice have been located within the park area (Crandell et al. 1962: 64-68). Distributional studies have been conducted revealing that at least four of these layers blanketed the area of Fryingpan Rockshelter. Of the six known pyroclastic layers in the park, five of these can be traced to their origins with reasonable certainty. These sources include Mt. Mazama (Crater Lake, Oregon), Mt. St. Helens, and Mt. Rainier.

The Sunrise sector of the park appears not to be subject to extremes in weather as other sectors of the park:

Topographic features account for variation in precipitation and, in general, windward slopes receive a greater amount of moisture than do leeward exposures. For this reason, although it is 900 feet higher, the Yakima Park (Sunrise) section of Mount Rainier National Park receives considerable less snowfall than does the Paradise Valley area, for the former is on the leeward side of Mount Rainier (Brockman 1947: 2).

Further, Brockman suggests that there is a wider variety of plant life in the Sunrise sector (Ibid.: 5). Both of these related features are factors affecting Indian use of the park area.

The site is situated in the Hudsonian biotic zone which ranges from about 5,000 to 6,500 feet above sea level. This life zone includes most of the popular parklands in the park. Sub-alpine meadows with clusters of Alpine fir, mountain hemlock, and white-bark pine characterize the Hudsonian (Ibid.: 5).

Year around wild life in the Hudsonian includes the Holister chipmunk, marmot, pika, Rainier meadow mouse, and Rainier

pocket gopher. Deer tracks were ubiquitous along Fryingpan Creek and deer bones were recovered from the archaeological deposits. Bear were also observed near the site.

Description

The rockshelter measures approximately 35 feet wide, 20 feet high, and 15 feet deep. It is set into a rock face which is of a basaltic andesite. The ground surface of the rockshelter tilts slightly to the southwest. The shelter faces north, hence it never receives direct sunlight, as the moss-covered clefts of the walls of the rockshelter testify. A large coniferous tree probably close to 200 years old grows in the center of the rockshelter. A single test pit, Test Pit 1, was excavated in the southwest portion of the shelter (to the right of the tree in Fig. 4).

Test Pit 1 measures 1.25 x 1.85 meters. Due to the lack of any discernible stratigraphy, two 15-cm. levels were troweled out. Cultural material was encountered from the surface and was continuous to a depth of 25 to 30 cm. Since our primary objective was to determine whether or not there was an archaeological site at this location, having satisfied ourselves that there was one, and having reached the bottom of the cultural deposits, we ceased excavation at 30 cm. where a sterile stratum of rockfall and colluvium was encountered. The excavation penetrated 10 cm. deeper, to a total depth of 40 cm.

Recent disturbances are discernible in both sides of the rockshelter, but they are superficial, penetrating only about 5 cm. into the deposits. The surface is lightly covered with moss and small plants. Beneath this ground cover the soil is dark brown and quite loose, containing ash, small to medium-sized pieces of angular andesite rubble, fine pieces of tree bark, abundant charcoal, and two wood shavings. In places, the soil is oxidized from old campfires.

Between 10 to 15 cm. a dozen pumice lapilli were encountered. They range from 15 mm. to 27 mm. in diameter and apparently form part of the matrix at the site. Of the known pyroclastic layers which are found in the immediate vicinity of the site, only one matches the description of the lapilli found. On the basis of particle size, coarseness, composition, and known distribution, the pumice fragments from 45-PI-43 appear to correspond with Pumice Layer C, as reported by Crandell et al. (1962: 67). A cursory check of the optical properties of the pumice glass recovered at 45-PI-43 was made by Miss Virginia Steen of the Laboratory of Anthropology at Washington State University. The refractive index of the pumice was found to be roughly 1.52. This figure falls within the range for Pumice Layer C specified by Crandell et al. as 1.50-1.53. The source of Pumice Layer C is ascribed to Mount Rainier. Crandell et al. note the following about the antiquity of Pumice Layer C:

. . . its age is bracketed by dates of about 300 and 3,200 years. No pumice was seen on a terrace in the White River valley about half a mile down stream from the position of the terminus of the Emmons Glacier in 1910. This terrace is inferred to have been forested for at least 1,000 years (Sigafos and Hendricks 1961); thus, Layer C presumably is older than 1,000 years (Ibid.).

The lapilli appear to form a natural layer in the site and it is therefore concluded that the cultural deposits date from the last millennium. It is possible that the lapilli were transported into the site by human agency, but this is not likely, since there is little to set their physical appearance apart from other lithic materials in the area.

At a depth of 15 to 30 cm. the soil retains the same characteristics as above, but is more compact. Fine pieces of bark, ash, and charcoal are still plentiful, and rubble size tended to increase; no pumice was encountered.

Cultural material was not found below 30 cm.; however, considering that the antiquity of man in the Northwest is known to be greater than 10,000 years (Daugherty 1962; personal communication), there is the possibility that there are still other cultural components present in the site. During the period from ca. 6,000 to 2,500 B.C., the Altithermal climatic period in the Intermontane West, Daugherty (1962) notes:

The changing character of vegetation, the decline in numbers of game animals, and the reduction in water resources culminating in the Thermal Maximum [the Altithermal] appear to have resulted in a sparser population in the more arid regions, concentration of populations in river valley areas, and a shift in economic emphasis (Ibid.: 145).

Therefore, one might expect to find a preponderance of sites of Altithermal age in the higher mountain areas of the Cascades, including Mount Rainier.

Artifact Inventory

The following is the catalogue of 15 artifacts from Test Pit 1. These together with the level data recorded in Table 1 comprise the whole of cultural materials collected at 45-PI-43.

45-PI-43/1

Knife fragment. This specimen, found 4 cm. below the surface, is the tip of what would have been a medium-sized, triangular-shaped knife. It is chalcedony, and measures 3.0 x 2.0 x 0.9 cm.

45-PI-43/2

Knife fragment. One end of what may have been a broad, crescentic-shaped knife was recovered at a depth of 10 cm. from the surface. The specimen is opal, measuring 1.9 x 2.3 x 0.7 cm.

45-PI-43/3

Projectile point. A triangular-shaped point with a lenticular cross section, a basal notch, and rounded barbs was obtained 6 cm. below the surface. The barbs were probably pointed in the original, but have been fragmented, forming rounded edges. This piece is opal, and measures 1.5 x 1.9 x 0.3 cm.

45-PI-43/4

End scraper. This implement was found at a depth of 6 cm. below the surface. The piece is parallel-sided, and has one convex end, the other end having been fragmented. The convex end is unifacially flaked and was probably used as an end scraper. The sides are bifacially flaked and would probably have come together to form a point. Such a point would have facilitated hafting. The specimen is chalcedony, measuring 2.1 x 1.5 x 0.5 cm.

45-PI-43/5

Castellated 5/16-inch S.A.E. nut. This piece obviously reflects recent introduction into the archaeological deposit. It was found at a depth of 2 cm. below the surface. Such nuts were first used extensively in the 1920's; they are still in use. This piece is probably less than 10 years old since the threads are not yet badly rusted. It is steel, measuring 1.5 x 1.7 x 1.1 cm.

45-PI-43/6

Black rubber strip. This probably is a strip cut from an old inner tube. Since rubber decomposes at a variable rate depending on moisture, temperature, etc., it is hard to say how old the strip may be. It still retains some elasticity. The specimen was found at a depth of 2 cm. below the surface and measures 11.2 x 3.8 x 0.1 cm.

45-PI-43/7

Projectile point. This example of a Columbia Plateau corner-notched point was recovered at a depth of 2 cm. below the surface. Edges are straight to slightly concave. Shoulders are

barbed but short, the corner notches being more basally than laterally articulated. The stem is slightly expanded with a straight base. The specimen is chalcedony and measures 2.3 x 1.3 x 0.3 cm.

45-PI-43/8

Core-scraper. This chalcedony specimen is shield-shaped with a cross section ranging from lenticular to plano-convex. The top end of the shield is flat and forms a striking platform from which there are three or four blade scars, each ca. 2 mm. wide. These scars run lengthwise halfway down the convex face of the shield. Both lateral edges of the shield have been utilized. The specimen measures 2.1 x 1.9 x 0.7 cm. It was found between 5 and 15 cm. below the surface.

45-PI-43/9

Knife fragment. A knife base was recovered between 15 and 25 cm. Its base has been battered and forms a striking platform. There are no evident blade scars. The fragment is diamond-shaped, one side forming the knife's cutting edge, and an adjoining side comprising the base. The piece is chalcedony, and measures 1.7 x 1.7 x 0.8 cm.

45-PI-43/10

Utilized flake. This piece is unifacially flaked and forms a point, both sides of which have been utilized. It is jasper, and was recovered between 15 and 25 cm. below the surface. The specimen measures 0.7 x 0.7 x 0.2 cm.

45-PI-43/11

Knife or point fragment. This bifacially flaked specimen was found between 15 and 25 cm. below the surface. It is chalcedony and measures 1.1 x 0.7 x 0.5 cm.

45-PI-43/12

Utilized flake. This piece was recovered at a depth of 2 to 15 cm. It is chalcedony, measuring 1.3 x 1.1 x 0.4 cm.

45-PI-43/13

Utilized flake. A chalcedony utilized flake was found between 2 and 15 cm. below the surface. It measures 1.1 x 1.1 x 0.4 cm.

45-PI-43/14

Flake scraper. A flake scraper possessing a battered head and a bulb of percussion was recovered between 15 and 30 cm. below the surface. It is jasper, measuring 1.9 x 1.7 x 1.1 cm.

45-PI-43/15

Scraper. This scraper was found between 15 and 30 cm. below the surface. It appears to be fragmentary. The piece is chalcedony, and measures 2.5 x 2.1 x 0.8 cm.

45-PI-43/16

Associated materials found from 0 to 15 cm. below the surface. (See Table 1.)

45-PI-43/17

Associated materials found from 0 to 30 cm. below the surface. (See Table 1.)

45-PI-43/18

Pumicite pipe. This artifact was found in a cleft in the wall of the shelter during the survey in August, 1963.

TABLE 1

LEVEL DATA ON ASSOCIATED MATERIALS RECOVERED FROM TEST PIT 1^a

Level	Chipped Stone Detritus			C ^b	O ^b	J ^b	Mammal Bone		Teeth
	Small (<5 mm.)	Medium (5-10 mm.)	Large (≥10 mm.)				Un- burned	Burned	
0-15 cm.	19	24	16	8	15	36	8	34	4
15-30 cm.	--	21	20	12	23	6	17	37	--
Subtotal	19	45	36	--	--	--	--	--	--
TOTAL	100			20	38	42	25	71	4

^aMeasurements were taken on maximum dimensions and in all cases the flakes appeared to be complete. All identifiable bones are deer.

^bMaterial Key: C = Chalcedony; O = Opal; J = Jasper.

Discussion

Site 45-PI-43 was not inhabited the year round. Rather, it reflects the seasonal round of life characteristic of Indians of the Northwest (cf. Spier and Sapir 1930; Haeberlin and Gunther 1930). The association of charcoal and ash, plus deer bones, added to such utilitarian artifacts as points, knives, and scrapers, reflects the specialized economic activity of hunting--only one facet in a total way of life.

Although the northeast sector of the park was claimed by both the Puyallup and the Muckleshoot of western Washington (Spier 1936), Indian groups from eastern Washington, predominantly the Yakima, passed over the passes of the Cascade Divide during the summer months in order to hunt, fish, and gather vegetal resources (cf. Rice 1964). That this pattern of life has been in operation for several hundred years is demonstrated by the presence of cultural material at Fryingpan Rockshelter. It should be noted that this site is usually free from snow only between July 4 and November 1 (Brockman 1947: 5). Considering such short visitations, it is not difficult to see how a site with a probable antiquity of from 300 to 1,000 years can be represented in only 30 cm. of cultural fill.

The cultural affinities at the site appear to lean toward the Plateau, the east side of the Cascades. This view may be supported by examination of the stone materials recorded in Table 1. On the whole, they are characteristic of the Columbia River Basin and most likely have their origin there. Such materials could have been traded, but they more likely were brought directly from eastern Washington.

The artifact assemblage, although very small, contains two diagnostic projectile points (45-PI-43/3 and 45-PI-43/7). Typologically, these points--one a small triangular point, the other a corner-notched point--appear to be linked with eastern rather than western Washington. Points similar to these have been reported from Wenas Creek, a stratified open site about 6 miles north of Yakima, Washington (Warren 1957). Horizon 3 at Wenas Creek is distinguished by large numbers of triangular and corner-notched points. The suggested chronology for Horizon 3 at Wenas Creek is post-1,300 A.D. The specimens recovered at Fryingpan Rockshelter could well represent a western manifestation of the material present at Wenas Creek. At least the artifacts from Mount Rainier are in accord both typologically and chronologically, making this interpretation plausible.

Two artifacts--a steel castellated nut (45-PI-43/5), and a strip of rubber (45-PI-43/6)--were recovered at a depth below the surface of 2 cm. Considering that the surface of Test Pit 1 had been disturbed at the point where these specimens were discovered, there is little doubt that they have no association with the chipped stone pieces whatever. They must have been introduced to the site by tourists some time during the last quarter century.

Conclusions and Recommendations

Although it is usually hazardous to derive conclusions from such limited data, it is felt in this case that three conclusions can be safely drawn:

1. Fryingpan Rockshelter is a site that was occupied only for brief periods during late summer. It reflects a way of life in which seasonal movements in association with economic activities have been established and normal for several hundred years.
2. Site 45-PI-43 is a single component, late period site, possibly ranging in age from 1,000 A.D. to historic times.
3. Cultural materials appear to be linked closely with the Plateau. However, a larger artifact inventory must be obtained if the site is to be of any significant comparative value to archaeologists.

Beyond the above conclusions the author recommends complete excavation of the site at Fryingpan Rockshelter. The major objectives of such a program would be as follows:

1. Determine whether or not earlier cultural components lie at greater depths in the rockshelter.
2. Determine the geochronology of the strata represented in the shelter. This would afford an opportunity to obtain further data on the pyroclastics encountered in the deposits.
3. Obtain a greater number of artifacts to aid in making comparative archaeological studies on both sides of the Cascades.

The outcome of such a program could result in the establishment of a permanent display either at Longmire or Sunrise. A display of this kind would certainly benefit the highest known archaeological site in the state of Washington.

Acknowledgments

The author expresses his thanks to Miss Virginia Steen for her aid in studying the pumice glass from Fryingpan Rockshelter. Mr. Charles M. Nelson made helpful suggestions and criticisms of the draft copy of this report. Finally the National Park Service, Mount Rainier National Park, is to be thanked for their fine hospitality and cooperation.

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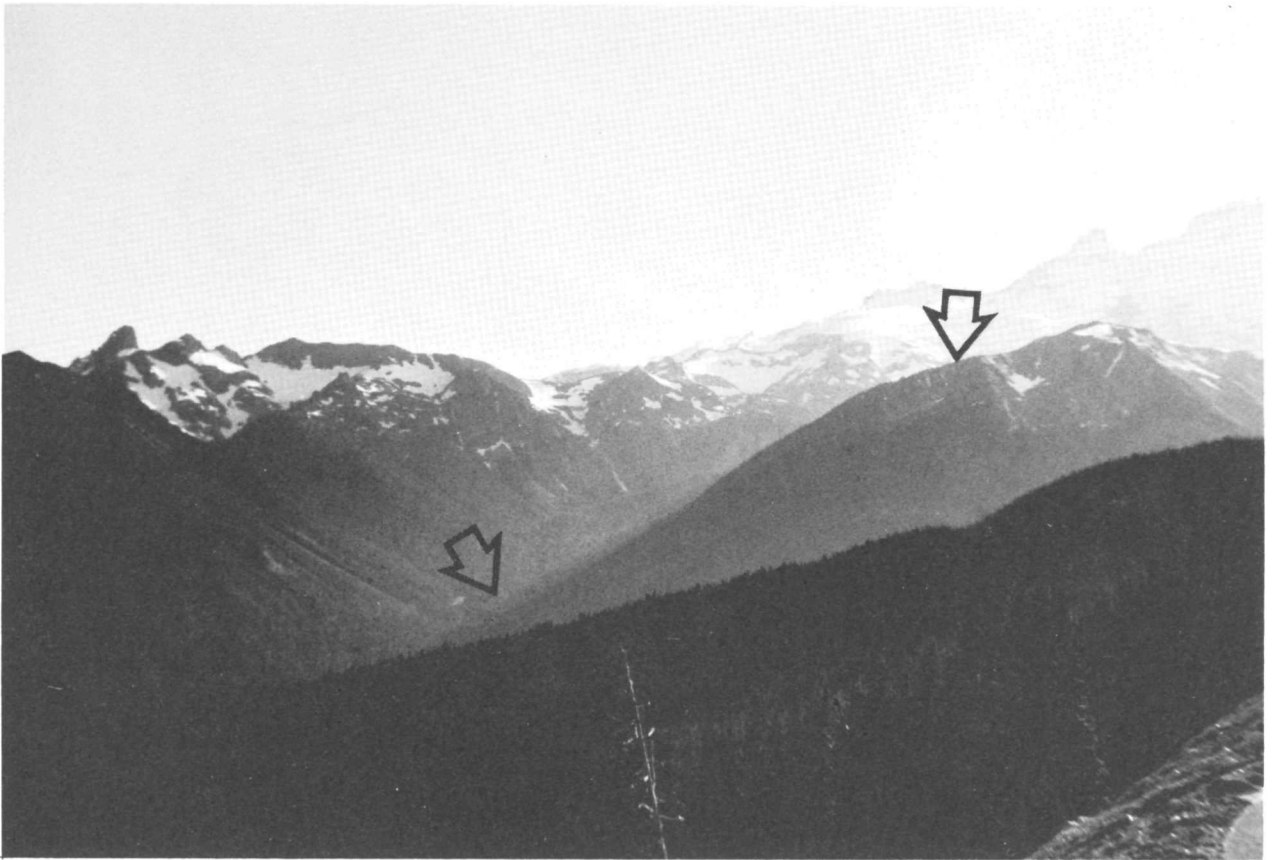


Fig. 2.--Looking southwest from Sunrise Vista



Fig. 3.--Looking south toward 45-PI-43
from the horse ford at Fryingpan Creek.

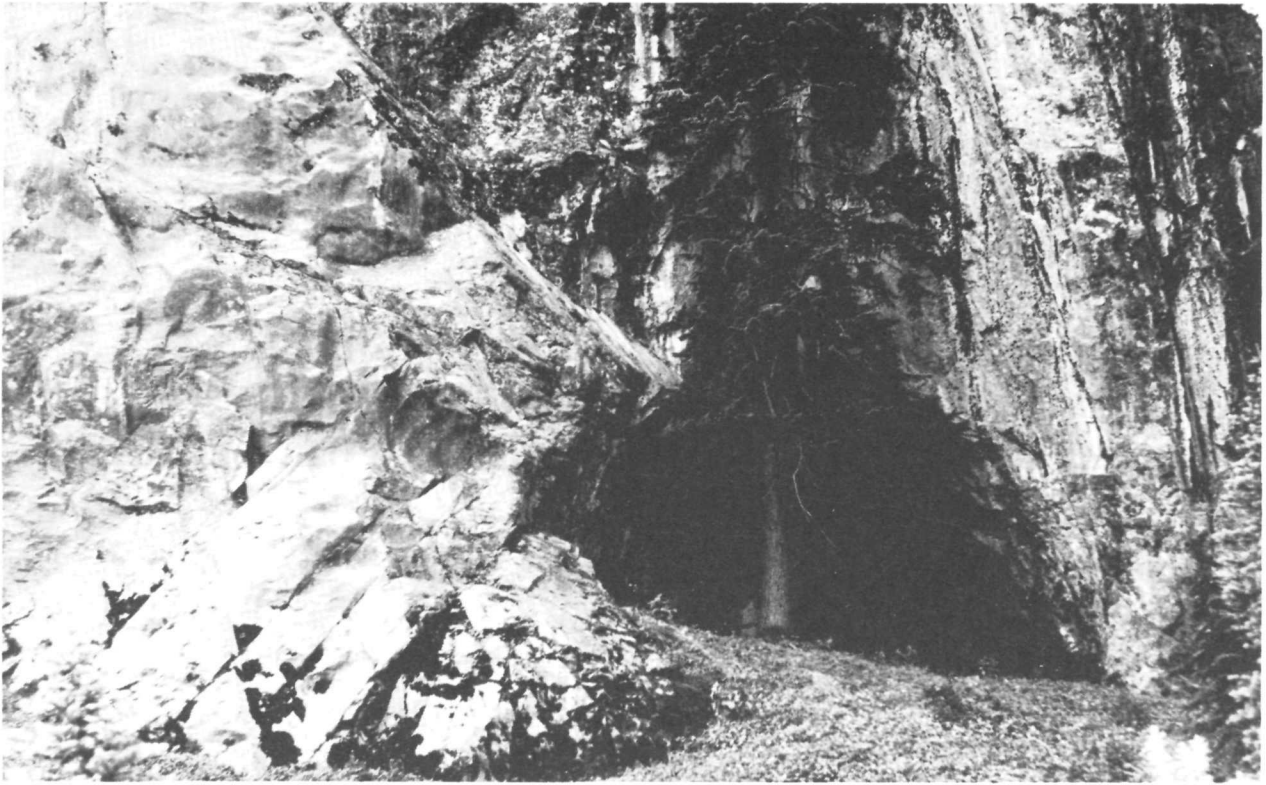


Fig. 4.--Fryingpan Rockshelter



Fig. 5.--Looking southwest toward Mount Rainier from Summer Land.

