Here is a handful of the black obsidian nodules picked up from the ground at the base of the cliffs where they are weathering out of the rock.

Near Superior, Arizona, John Hilton found great quantities of black pebbles weathering out of an ancient lava flow. Hilton identifies them as glassy obsidian nodules, sometimes sold under the name of "smoky topaz." According to Indian legend, however, they are "tears of stone" shed by sympathetic Mother Nature when an Apache Indian maiden met a tragic death near this spot. Here's a story that will be interesting to gem collectors and students of Indian lore.

'Apache Tears'

By JOHN W. HILTON

ACCORDING to the story the small band of Apaches in which her lover and her relatives were traveling had been ambushed by a war party of enemy tribesmen who far outnumbered them. They fought valiantly, climbing toward the fastnesses of the crags above as they retreated. By the time the summit was reached their spears were broken and their arrows spent.

Capture meant torture and death—and when suddenly they found further retreat cut off by a yawning abyss, they turned one by one and plunged to the rocks below.

The story goes on to relate that the grief of the young Apache girl was so profound it affected all nature about her. Even the mountain was said to have wept at her tragic death. In support of this statement, the Indians point to the count-

LEGEND OF "APACHE LEAP"

Sitting at the edge of a cliff high among the rugged peaks of the land we now know as Arizona, an Indian maiden sat with bowed head. The stillness of the evening was broken only by convulsive sobs that came from the heart of the brown-skinned girl.

The tips of the surrounding crags were painted with the ruddy glow of the sinking sun. In the distance "Weaver's Needle" pierced the sky like a sword of gold, its base hidden amid the pinnacles and rocky massifs of the Superstition range. Far below, the tawny browns of the desert floor were giving way to the bluish haze of night.

But the beauty of this landscape meant nothing to the Apache girl, for at the base of this precipice lay the broken bodies of her father, her brothers and the lover she was to have married on the following day.

Since dawn she had huddled in this spot, oblivious to the heat of midday sun, unmindful of thirst or discomfort, aware only of the fact of her tragedy and of the emptiness of the life that lay before her.

Now the sun was sinking behind the distant range. She arose and for a moment her figure was silhouetted against the flaming sky. Then she plunged forward into space—to rest in peace with those below.

Thus is told the ancient legend of Apache Leap.

less numbers of round glassy pebbles that lie scattered about the base of the mountain.

These "tears of stone," as the Indians call them, appear to be black until they are held up to the light, and then they become surprisingly clear, but tinged with a fine smoky grey.

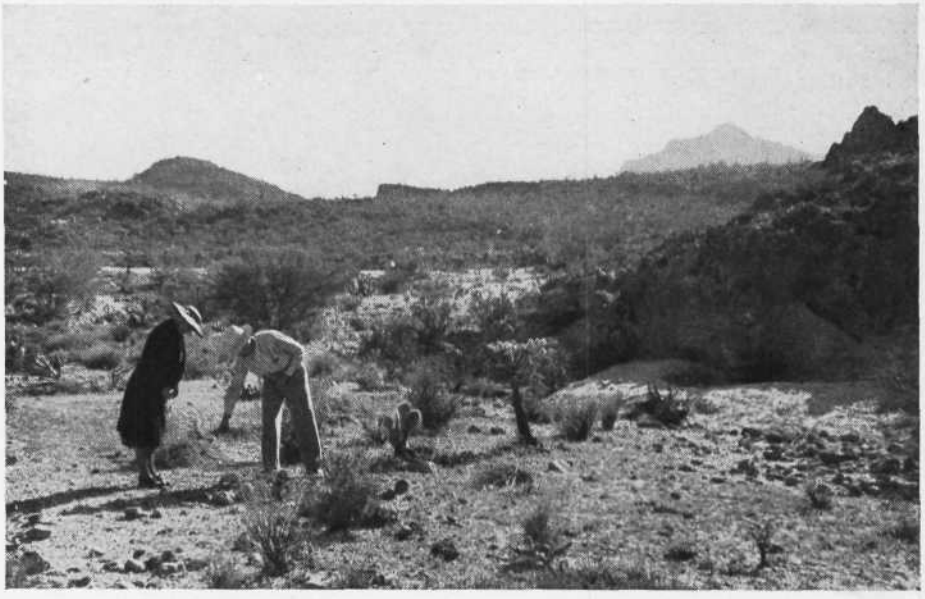
My first sight of "Apache Leap" was early in the morning. A light wind had drifted the smelter smoke from Superior so that the entire mountain was enveloped in a swirling mass of silver fog. Such a sight on the desert is as beautiful as it is unusual. The morning sun shining through this smoke gave it a peculiarly luminous quality that served to accentuate the height and ruggedness of the pinnacles above.

We passed the Boyce Thompson Arboretum where so many secrets of desert plant life are being studied and solved. Its setting in a rugged canyon at the base of the mountain is indeed beautiful and fitting.

As we came within sight of Superior, we took the dirt road turnoff on the right of the highway. From the paving it was a mile to the Underwood ranch where we parked our cars to look for the gem stones we had been told were here.

We saw some of them on the ground almost as soon as we stepped from our automobiles, and as we walked toward the hills the supply became more plentiful. In some places it was impossible to walk without stepping on them.

For years these obsidian nodules have been gathered and sold by curio dealers under the name of Arizona smoky topaz. This name is as unfortunate as it is misleading for these lovely pebbles of obsidian are in no way related to topaz. Topaz has a hardness of eight and is a crystalline mineral, whereas these stones have a hardness of from five to six and are an amorphous volcanic glass.

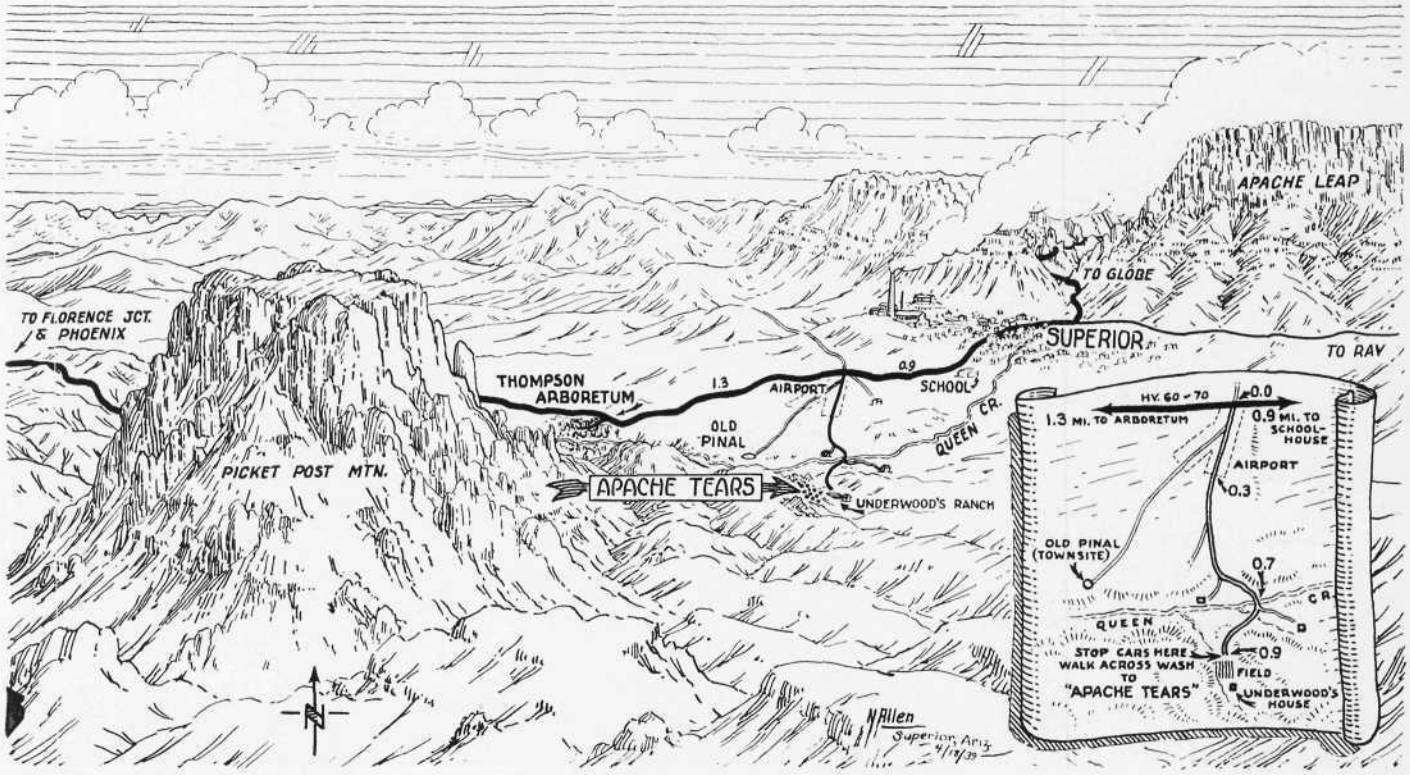


Norton Allen, staff artist for the Desert Magazine, visited the "Apache Tear" field and took this picture of his parents, Mr. and Mrs. Ernest G. Allen, as they gathered specimens on the desert near where the obsidian nodules are weathering out of the cliffs.

It might be well here to clear up some of the misunderstanding that exists regarding the gem called "smoky topaz." Most of the faceted material sold on the market today under this name is actually a dark colored form of quartz crystal. It has been sold as "topaz" for so long a time, however, that the trade generally has accepted that name for it.

The smoky obsidian we found at this point is too soft for facet cutting, but takes a high polish and makes a rather pleasing gem in a cabochon cut. Topaz itself is seldom if ever found in a dark smoky color and is rarely cut into gems. Personally, I have never seen a true topaz "smoky" enough to deserve the name.

We had not climbed far up the hillside before we discovered the "tears" are weathering out of a flow of silver grey volcanic rock. A close examination of this rock revealed that it also is volcanic glass. The only essential difference between the nodules and the mother rock



is that the latter is so scaled and fractured that the air imprisoned in its cracks give it a sort of pearly grey appearance. The sun shining on these scales of obsidian reminds one of the luster of sea shells.

The natural conchoidal fracture of the obsidian probably is responsible for the nearly round shape of the nodules. The molten glass appears to have reached the surface under considerable pressure where it suddenly expanded and cooled, leaving a porous mass of fracture scales arranged in whorls, the centers of which nearly always contain solid nodules of obsidian. We noted that in sections of the flow where the fracture pattern is arranged in very small whorls there were no obsidian centers, but where the magma apparently cooled more slowly and the whorls were larger they all contained obsidian pebbles. This slower cooling had allowed pieces of the glass to become solid without breaking.

Many of the weathered stones have a rather fine polish due to action of wind and rain and I could not help thinking what fine necklaces could be made from the stones if they were graduated and drilled like pearls.

Toward noon the wind changed, clearing the smoke away from the mountain and bringing its rugged beauty into full view. Some of its pinnacles would be a serious challenge to the most expert rock climbers. Its scenic beauty will always make this place an inspiration to artists and photographers.

We found a friendly atmosphere in Superior. Restaurants and overnight accommodations were fine and the town itself is an interesting place to visit. It is an odd combination of the old and the new. Almost in the shadow of the giant smoke-plumed chimney of its modern smelter are prospectors at work developing their claims with no better equipment than was used by the first miners who came into this western country.

In the business district the most modern stores and service stations are flanked in some locations by old-fashioned buildings with their high false fronts—a relic of the days when Superior was a roaring silver camp and freight teams plodded along its dusty streets. Old-timers tell of the glory and excitement of the days when their fathers hauled out ore in wagons, freighting it to the Colorado river where it was loaded on barges, floated down to the gulf and shipped by sailing vessel around the Horn to Wales, where it was smelted. Needless to say, it was no low grade ore such as is the backbone of the modern mining camp. It was high grade "wire" or "ruby silver," assaying several dollars to the pound.

A police officer there told me the story of a freight driver who was hauling some of this rich silver ore to the river. He was overtaken by a party of emigrants who, out of curiosity, inquired as to the nature of the ore. For answer, the driver slowly drew a silver dollar from his pocket and flipped it in the air.

"That's what she be, boys! All it needs is the U. S. stamp."

It was sunset when we returned past Apache Leap. Smoke from the smelter hung about it again, but this time it was gold. High up on a lofty peak I thought I could see the figure of a lone Indian girl, poised on the brink of a cliff. But she remained immovable as long as we were in sight—just a trick of the sunlight and shadows, and perhaps a bit of imagination inspired by the legend that had been told to me.

The black nodules are "Apache Tears" as they occur in their matrix of pearl obsidian.

Sez Hard Rock Shorty of . . . Death Valley

By LON GARRISON

"Rheumatics?" asked Hard Rock Shorty. "Naw, I just been out imitatin' this guy Newton what invented aviation by gettin' hit on the head with a green apple. An' by gum I got just what any guy had ought'o get who goes stickin' his nose in other guys' businesses helpin' 'em out!"

He creaked across the porch and lowered himself stiffly and painfully into the rocking chair.

"Jimminy, I'm sore!" he moaned. "Hurts to stand up, lay down, set down, or roll over. An' it's all because I offered to help Jimmy Jenkins get some stuff up to his Gopher Hole mine shaft. He'd some picks, drills, and hammers he wanted histed 20 feet up the face of a cliff, an' it was gonna be hard work luggin' ail that junk up a ladder. So we rigged a pulley up at the tunnel, an' loaded the stuff in a powder box. I was to stay at the bottom an' pull the box up for Jimmy to catch an' unload at the top.

"I started liftin' the first load. It was durn near as heavy as I was, but it went along fine 'til it got clear at the top.

" 'Hold 'er a minute while I clear a place to set it,' yells Jimmy.

"I took a couple o' turns around my wrist with the rope, an' that proved to be a mistake. Jimmy reached for the box, slipped, an' fell right in the blamed thing. Well sir, that was somethin' else again!

"I couldn't let go—I was just yanked up in the air, spun around a dozen times, an' bounced all over the rocks on the way up. As I passed Jimmy he kicked me in the stummick, an' one o' the picks took a yard o' hide off o' my shin. I hit the wall one more good lick just afore I run my hand into the block. I figgered I was stuck, but I didn't know Jimmy.

"When the box hit the ground, Jimmy fell out, the box busted open, an' all the tools slid out too. Then I was heavier'n the box an' I started the return trip in high gear. On the way down I met the remains o' the box goin' up, an' that's when I lost the rest o' the skin off o' my face. I slid over a few more sandpaper rocks, an' then hit the ground so hard I bounced twice. Then durned if that rope didn't jiggle loose off o' my wrist, an' the rest o' the box come back down an' hit me on the head!

"Yup—me an' Newton learn the same way, an' I'll bet you by gum that I stay learned!"