Robert Haag, the Meteorite Man, with the moon fragment found on the fringe of the Gibson Desert.

TIM FULLER

How a valuable bit of the moon that belongs in Australia wound up in the hands of the Meteorite Man in Arizona.

MOONRAKER

IN OCTOBER 1960, A HUGE FIREBALL descended towards the fringe of the Gibson Desert and disappeared into the vastness of the outback. A decade passed before someone noticed a blackened chunk of rock lying incongruously in the reddish dirt at isolated Millbillillie station, near Wiluna, Western Australia. The fragment, although valuable to science, was not remarkable as WA probably ranks second only to Antarctica as a hunting ground for such missiles. But the discovery of the Millbillillie meteorite, as it was named, led to the theft of Australia's only piece of the moon by a fast-talking American.

The Millbillillie meteorite landed in a shower of fragments and, after the first were found, scientists at the Western Australian Museum were alerted. They mounted three official expeditions in the early seventies from which about 25.4kg of the meteorite was recovered. But in 1988-89, collectors and meteorite dealers got their hands on thousands more fragments of the same "fall", amounting to about 300kg. They did it by hiring local people, mainly Aborigines, to fossick for them. Among the fragments was a tiny chip, weighing just 19g and measuring 3cm in diameter. No-one realised it at the time, but this insignificant-looking sliver of rock, which might have landed in WA many years ago, was once a part of the moon.

Only 11 other lunar samples have been found on earth, all of them at the edges of Antarctica, where meteorites can be seen and retrieved more easily than anywhere else on the globe. All are owned by the US and Japanese governments, which have collected more than 12,000 meteorite fragments from Antarctica since 1969. The twelfth piece of the moon is now in the hands of Robert Haag, a dealer from Tucson, Arizona, and it left Australia without a permit and against Australian law.

Haag is reputed to have the world's largest private meteorite collection, comprising hundreds of specimens found in 30 countries. He says he might sell the lunar sample some day and estimates it will fetch $A1.3 million. He says he grossed $650,000 last year selling meteorites.

His customers are collectors and institutions around the world, including some of Australia's museums, although their curators treat the garrulous American dealer with caution.

One of Haag's most strident critics in Australia is Dr Alex Bevan, curator of meteorites at the WA Museum. Bevan, a world authority on meteorites, is a co-author of the *Catalogue Of Meteorites*, a scientific work published by the British Museum of Natural History. The book's 1985 edition carried an entry on the Millbillillie fall which prompted collectors to focus on the Wiluna district.

Although Haag says he has visited Australia three times, he did not find the moon rock himself. He was among those dealers who hired Aborigines to gather Millbillillie fragments, and the lunar chip was sent to his Arizona home, along with a batch of meteorite pieces. He estimates paying just $25 to $40 for the moon sample but says his real costs, including hiring the searchers, amounted to between $65,000 and $80,000.

Haag claims to own only about 10 Australian specimens but he puts out a glossy brochure termed a *Field Guide* to meteorites in which he writes, "I personally purchased hundreds of the Millbillillie stones for distribution to foundations, museums and collectors. I've sold a lot of them."

In his brochure, Haag describes how he was sifting through some of these specimens when he noticed one felt slightly different from the others. Slicing off a tiny section, he recognised it as very similar to a lunar rock sample he once had seen at the Japanese Institute of Polar ▷

BY STEVE BUNK

Shady methods are common among meteorite dealers, according to Bevan, who was once duped into trading with Robert Haag.

STEVE BUNK

Dr Alex Bevan with the 11.5 tonne 'Mundrabilla' meteorite.

◁ Research, in Tokyo. He took it to Dr William Boynton and Dolores Hill at the University of Arizona's Lunar and Planetary Laboratory, where the first lunar meteorite from Antarctica was sent for analysis, as well as many samples taken during the Apollo moon missions. They determined without doubt the rock's lunar origin. In August 1991, they published their findings in the prestigious British scientific journal *Nature*, announcing the name Calcalong Creek for the meteorite.

Dolores Hill calls Haag's meteorite collection "beautiful" and "wonderful" but stops short of referring to him as a colleague. Trying to find words that capture the man, she stumbles, and finally settles for, "he's something else". One American newspaper did a somewhat better job of describing the dealer, who is in his mid-30s, with locks flowing below his shoulders. "Robert Haag looks more like a rock star than a rock collector," the reporter wrote.

Alex Bevan became aware of Haag's moon specimen early last year. In March 1991, Bevan received a fax from Haag which he handed, together with other information, to police. "No permit was sought to export this object, or any of the others, from Australia," says Bevan. Police say an American is being investigated for allegedly stealing a lunar meteorite but will not confirm whether Haag is being investigated.

Haag has fallen foul of the law in the past. He admits spending six days in an Argentinian jail for trying to export a 37-tonne meteorite described by authorities as a national treasure. "I couldn't very easily say, 'What rock?' because it was strapped on top of a truck," he once said.

Asked whether he knew the export of meteorites without a permit is illegal in Australia, the self-styled Meteorite Man says: "Who's going to do anything? It's a foolish law. I didn't export anything out of Australia. What do I have to worry about?" Reminded of a 1990 trip to the Nullarbor Plain during which, he claims in his own brochure, he collected meteorites, he changes tack. "I remember saying I had a couple of meteorites in my suitcase," he says, adding that the customs official's response was nonchalant. Haag argues that dealing in these materials helps scientists and institutions to gain access to them. "If anybody's going to make a big federal case out of it, then everybody loses."

The Museum of Victoria's collection manager, Dermot Henry, disagrees: "People like him inflate the prices. That's why meteorites don't get handed over to the Western Australian or South Australian Museums. People think they can make a fortune by selling them to Robert Haag."

The Museum of Victoria has bought a few common types of meteorites from Haag but Henry says the dealer's prices are excessive. "I find it hard to believe there are that many wealthy meteorite collectors out there."

Haag says he has done business with the Australian Museum in Sydney, but its collections manager, Ross Pogson, can find records only of correspondence. With about 700 meteorite samples, the Australian Museum's array is second in this country to that of the WA Museum. "He's a sharp dealer, to be treated with caution," says Pogson.

Dr Allan Pring of the South Australian Museum says, "People like Robert Haag do a lot for meteorites but they do a lot of damage, as well. It's a bit of an equation but sitting here as curator at a museum where they're ripping off our meteorites, the equation isn't really on our side."

South Australia is second to WA as the country's meteorite hunting ground. These also are the only states with laws that claim meteorites as government property and offer rewards for their delivery to the museums. Scientists agree that dealers seem to pay little heed to such regulations, whether state or federal.

A few years ago, Allan Langheinrich, an American dealer, returned large portions of the 100kg Cook meteorite which was taken from South Australia's side of the Nullarbor. "It was brought to my attention that there were some legal problems with ▷

ALEX BEVAN

Meteorite hunters load up a 3.5 tonne find on the Nullarbor plain.

◁ meteorites in Australia, so I stopped dealing in them." Langheinrich has a collection of about 100 meteorites from around the world but when asked if other countries have laws against exporting those materials, he responds, "I don't know. That's a good question." Langheinrich is guarded in his opinion of Haag: "He's a competitor and I won't speak badly of any competitor. We don't do business anymore; that's all I'll say."

At the Lunar and Planetary Laboratory in Arizona, Hill says she wasn't aware that exporting a meteorite from Australia without a permit was illegal. Asked if she and Boynton were concerned where the lunar rock came from or how it came into Haag's hands, she says: "It is of interest mostly because, for any meteorite, the circumstances of the fall or the find must be recorded." Bevan says of illicit trade in meteorites: "I know a few places, like the Smithsonian and the British Museum of Natural History, are acutely aware of what's going on and are very sensitive to the provenance of materials."

Shady methods are common among meteorite dealers, according to Bevan. For example, they sometimes falsely claim that fragments were discovered very far apart, in order to get higher prices by selling them as pieces of different meteorites rather than the same one. He was once duped into trading with Haag. The trade was a fragment of a common Australian meteorite for a more rare US specimen. This legitimate transaction on behalf of the WA Museum was conducted with a man in Sparks, Nevada, named Robert Reeves, but Haag says Reeves was making the exchange for him "because they're afraid of the name Robert Haag, for some reason". Asked why, he says, "Because maybe I'm a ruthless trader. If you don't know what you've got, I'm going to take advantage of you."

Bevan is not surprised by this revelation. "I suspected Haag might be involved with all that but, of course, I was dealing with this other person."

Regardless of who actually sent the moon rock out of Australia, its loss cannot be measured in money. "Meteorites are scientifically extremely important," Bevan says. "They are our only direct tangible source of information about the history of the solar system. You can learn much from astronomy, but then you're looking at it remotely. Meteorites are actual physical objects we can look at, analyse, interpret, and they tell us about the earliest history, the birth of the planets."

The Calcalong Creek meteorite was found to contain a higher concentration than any other lunar meteorite of a chemical component called Kreep, thought to be unique to the moon. In that respect, it is remarkably similar to some samples collected by the Apollo astronauts.

The small specimen can't be dated without destroying it, but if other lunar samples are found and their length of time on earth is established, that could tell how long they travelled in space, which would be significant.

"We could determine when these things were ejected from the moon, we could tell when they fell onto earth," Bevan says, "and that may help to tell us about a whole range of things that happened on the surface of the moon, and how long ago. Was there a recent major bombardment, say, that we don't know about which ejected a lot of this material?"

If there is any consolation for Australia in losing the lunar meteorite, it is that its presence in the desert suggests there could be more such rocks, says Bevan. Working alone and with a limited budget, Bevan is responsible for covering the 2.5 million sq km of WA where more than half of all this country's meteorites have been found. Under those circumstances, he can't predict when the next lunar sample might be unearthed.

"It's a great shame that, quite apart from its scientific importance, this object, in effect, has been taken away from the gaze of Australians. It's as much a part of their heritage as anyone's and they've been deprived of the opportunity to see it." □