sites are enclosure units (basically hut and livestock enclosures), terraces used for agricultural purposes, and stone-walled tracks between the terraces from the outside of the settlement to the enclosure units. Sites are all on sloping ground on the sides of valleys. While a number of these sites were visited, particular attention was paid to a settlement on the farm Badfontein. This is a large village site covering ca. 3 sq. mi. on the banks of the Crocodile River, approximately 17 mi. south of Lydenburg. Two enclosure units, 44/71 and 45/71, were excavated, and both provided information about household arrangements, material culture, and probable cultural affinities.

Pottery resembles both the material recovered by Ladler and modern Pedi pottery. The principal type is a short-necked pot with a row of punctuation marks just below the rim, a large chevron or arcade motif on the shoulder, and differential colour burnishing, usually graphite and red ochre. Shoulder decoration and burnishing do not always occur. A number of pots have strong affinities with some from the Eastern Transvaal lowveld.

Evidence for agriculture is seen in the terracing and in the finding of a hoe, much worn down by sharpening. Many of the stones among the terraces have evidence for use as sharpening stones for metal tools. Pastoralism is shown by bones of cattle and sheep/goats, as well as the tracks and cattle kraals.

Associated with some settlements are refuge sites, usually caves (as at Sudwala and Ngodwana) but in two cases isolated cliff-bound heights (Mapochstad [Mason 1962] and Marapani's Rock). Refuge sites and the presence of trade beads of recent type suggest a date in the late 18th and 19th centuries, when Ndebele and Swazi invaded the area, shortly followed by the first European settlers. Refuge sites were used as late as the 1870s by Pedi people during the Sekhukhunwe wars (Aylward 1881).

Evidence for metal working is lacking at Badfontein, though slag has been found at a site in the Lydenburg Municipal grounds, scheduled for excavation in the near future.

The sites show strong cultural affinities with modern Pedi settlements. One of the sites excavated at Badfontein has been compared with the layout of a modern Pedi kgoro (Mönning 1967), and the resemblance is striking. That, with the strong resemblances in settlement layout and pottery and the fact that in the late 18th and 19th centuries the Pedi are known to have had an extensive empire that included the Lydenburg region (Hunt 1931), suggests conclusively that late Iron Age settlement in the escarpment area of the Eastern Transvaal can be attributed to Pedi people.

A study of the Iron Age of Vinyanga, Rhodesia, shows the only point of comparison between Vinyanga and the Eastern Transvaal to be the layout of settlements with terraces, tracks, and enclosure units. Details of the enclosure units and other features of the material culture are very different in the two areas.

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Russian Use of Amanita muscaria: A Footnote to Wasson's Soma

by Ethel Dunn

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In Soma, a book which has attracted worldwide attention, Wasson (1968) documents his conviction that Soma, the god and the plant celebrated in the Vedic hymns, was a mushroom, Amanita muscaria, or fly agaric. Furthermore, he shows that this red-capped, white-spotted mushroom had and continues to have an important place in the folklore and folk life of a number of peoples, from the small peoples of the Soviet North to the Slavs. In March 1971, Wasson wrote to me, asking what I knew of the present use of A. muscaria among the small peoples of the Soviet North. My husband and I have done considerable research on culture change among the small peoples, and, in addition, we translated Okladnikov's Yakutia (1970). Our only reference to A. muscaria at that time was a statement (Gurvich and Kuzakov 1960:171, translation mine) that "some Kor-yaks—representatives of the older generation—collect Amanita muscaria mushrooms, dry them, and then use them as narcotics." I agreed to do some research on the topic for Wasson, because I wanted very much to know whether the Russians ever used A. muscaria ritually. Siberia has been settled by Russians since the mid-17th century. Russian religious dissidents made up a significant percentage of these settlers. According to the Russian literature, these secktarians indulged in a number of practices designed to facilitate the descent of the Holy Spirit. Such descriptions as I have read (and in the great majority they have been written by hostile observers) seem to be describing a basically shamanistic activity. Would such people, in the normal course of events, have employed A. muscaria?

Although every conceivable charge has been leveled against Russian sectarians, the use of A. muscaria has never been one of them. On the other hand, Russian and Soviet sources admit that Russians in Siberia do make use of native shamans and that there have been Russian shamans (Borgoraz 1899:120; Manzhigeev 1962; Vorob'ev 1926). Furthermore, the Soviet commentary on Wasson's work (Elizarenkova and Toporov 1970; Dikov 1971:24-26) clearly indicates that the ritual use of A. muscaria by any given people is viewed as an indication of the antiquity, nature, and extent of shamanism over a wide area. The exchange of letters between Wasson and myself for more than a year suggests that he has a lively interest in certain aspects of folklore (snakes, one-legged and one-eyed beings or gods, and world trees) which will eventually broaden and deepen the work sketched in Soma and in Mushrooms, Russia and History (Wasson and Wasson 1957).

\[1\] This report is an expanded version of a paper presented to the Kroeber Anthropological Society, Berkeley, Calif., on May 21, 1972.

\[2\] I have discovered that the Nivkhi (Gil-yaks) once wore a charm to prevent or cure illness which was armless and legless, essentially a head with a long smooth body. This charm, when worn on the breast, was called pangakh (Shrenk 1903:110; pl. LIII, LIV show somewhat similar idols among the Goldy [Nanai]). Wasson connects this...
It very quickly became apparent that among the Russians, the use of *A. muscaria* was twofold: as a medicinal ingredient, and as a substitute for alcohol. Since comparatively little has appeared in English on this topic, I will describe these uses in some detail, taking the substitute for alcohol first.

The use of *A. muscaria* in the village of Markovo, in the Anadyr region of the Chukot Peninsula, was described by Baron Gerhard von Maydell (cited in Wasson 1968:254–55) in the 1860s. A more detailed description is contained in a manuscript by D'iahkov (1893:114–18), a resident of Markovo, who was perhaps at a disadvantage because he was simply an observer and not a participant. Nevertheless, the report is of some interest: the local inhabitants, when looking for *A. muscaria*, believed that if they ate the first one they found, they would inexorably be led toward others. If a person took the *A. muscaria* alone, his visions were more terrible than if he consumed it in company. The smallest dose was three; more could be added to intoxication, but not everyone was affected in the same degree. The mushrooms were generally eaten whole, but were sometimes mixed with other food, or boiled in water, which was then drunk. The practice was to sit in a circle eating three or more mushrooms, after which all the participants returned to their houses. However, in some manner, they remained in communication with each other, to the extent that they knew who was intoxicated and who wasn't. Apparently the purpose of getting together at all was to have one person masticate the mushroom and then pass it on to the next, with whispered suggestions about what the person would see. D'iahkov said that a person who knew nothing about shamanism would begin to act like a shaman as soon as he had eaten a *A. muscaria* and that shamans who were asked to heal the sick or "divine some secret matter" often asked for *A. muscaria* beforehand. It is perhaps significant that D'iahkov did not mention religious motivation, although he reported that the intoxicated person said that he had seen heaven and hell, or paradise. We should remember that the 19th-century Russian peasant was far from secularized, and that heaven, paradise, and hell were very much part of his intellectual frame of reference.

When D'iahkov's manuscript was published, his first name and history were unknown, but he was said to have been a Russified Chuvant. The question arises, therefore, whether D'iahkov's observations relate to Russians at all. It seems that inadvertently I stumbled on a very important problem of Russian and Soviet national policy—namely, at what point can a small ethnic group be considered Russian if some element of it at one time was non-Russian? Scattered references in *Peoples of Siberia* (Levin and Potapov 1964) alternately list the Chuvantys as one of the small peoples of the North and place them in a description of Russians in Siberia (p. 113), where they are described as one of the Yukagir tribes, and also pp. 491, 506, 788, 790, 800, 801; but on p. 820 we read that the settled Chuvanty now may be considered Russians, whereas the reindeer Chuvanty have merged with the Chukchi; on p. 830, Chuvanty are coupled with "local Russians". A sketch in *Zooestia* (June 15, 1972) by the latter writer gives a few details to D'iahkov's rather hazy description. D'iahkov was a psalmreader and the first teacher in Markovo; his first name was Afanasii. Markovo was a trading center in the late 18th century, and the inhabitants were Russified Chuvantys who had taken the surnames, language, customs, and songs of the Cossacks who had originally come into the area with Semen Dezhnev. D'iahkov himself knew only a few words of the Chuvan language, having picked them up from his grandfather, who was by no means fluent. On a number of counts, therefore, we can say that the inhabitants of Markovo are Russian now and were when D'iahkov wrote. S. A. Tokarev (personal communication, June 25, 1972) confirms this supposition, writing "this is a small isolated group of Russian old settlers surrounded on all sides by Chukchi and subjected to strong Chukchi influence." Significantly, Tokarev adds that no other use by the Russians of *A. muscaria* is known to him.

Apart from the D'iahkov reference, I found only one other. In a paper by Toren (1970:511) dealing with the use of wild plants in folk medicine, A. F. Gammerman, a specialist in the field, is quoted as having collected data...
to the effect that "hunters in the Ural Mountains take pieces of fly mushroom to get drunk and throw themselves into hallucinations." I wrote to Gammerman asking for further information about the Urals, and in March 1972 I received this reply:

Information on the use of Amanita muscaria in the Urals was given to me by an archeologist who was walking in the woods of the Urals with a local guide of the Zyryan or Komi nationality. In the evenings by the fire, the guide proposed removing fatigue with, instead of vodka, the chewing of small pieces of Amanita muscaria. The archeologist said that a real intoxication was achieved, everything seemed colossal—trees were several times thicker, the fire was up to the sky itself, and all the participants behaved better than from vodka. There were no harmful after-effects.

With Gammerman's letter was another, written by a former colleague who had worked for several years in the Far North and Transpolar region of the U.S.S.R. (Ina, Pechora, Vorkuta, Malba, and the settlement of Premyshlenny, Komi A.S.S.R., as well as various settlements of the republic). In the course of his work, which was to collect medicinal plants, he had been given by the Komi a mushroom powder, with the suggestion that he chew it; this he did, ingesting about a tablespoonful over the course of an hour, washed down with birch-fungus tea (Guomutus obliquus [Pers.] Br. f. steriles). After about 10 or 15 minutes he experienced a pleasant euphoria that lasted until the end of his day. He experienced a similar euphoria after taking A. muscaria on several other occasions in the city of Nar'ian-Mar (Nen National Okrug, Arkhangelsk obl) and in settlements along the course of the Pechora River, as well as in the Komi-Perm okrug of Perm oblast and in the city of Salekhard (on the Ob River). He had known about A. muscaria before this time (1946-65) from having seen it in eastern Latvia and western Belarusia and Russia, as well as in Estonia and Lithuania; in these places infusions of A. muscaria are used for rheumatic pain.

The medicinal use of A. muscaria was interesting, because it was more or less current. In my search for similar information, I found rather frequent references to chaga, or birch fungus. There is even a reference on p. 238 of Soma, though Wasson's sources call it shagga, and through a mistranslation Wasson overlooks the fact that it was used as a cure for rheumatic pain. I know from Wasson that birch fungus and A. muscaria are frequently found together, I tried (unsuccessfully) to establish a connection between them. I discovered that 19th-century physicians considered the caps of A. muscaria hallucinogenic and therefore recommended using only the stems in treating a wide variety of diseases: convulsions, paralysis and other nervous disorders, epilepsy, goiter, tuberculosis, congested coughs, scabies and scald-head, rheumatism, intestinal and uro-genital diseases, and various neuroses including, apparently, impotence (Buyalskii 1859-60: 487-92). It was recommended that the A. muscaria be dried in the oven and preserved in a stopped jar in a dry place. A. muscaria was a folk remedy in Novgorod gubernia for rheumatism, swellings, and periostitis (the case of which was thought to be a cold) (Gerassimov 1898:126, translation mine):

They collect mature specimens of the mushroom, breaking them into pieces, putting them in a bottle filled to the top; they stop it up and leave it in a warm place for three days. Under the influence of the heat, one receives a semi-liquid mass, and they rub it with the crust. In one case, known to me, with frequent and severe rubbing of the leg (a very severe Ischia) [sic], a pain caused by gas was thrown out, and pain in the stomach, but the pain in the leg decreased.

A somewhat similar remedy was recorded as in use among the Lithuanians, except that A. muscaria was only one of several remedies used (Petkevich 1911:209). In her letter to me, Gammerman cites a handbook of medicinal plants published in Minsk in 1965. It lists as components of A. muscaria muscarin, muscaradin, and a red antibiotic substance called muscarufin. It is this substance which is thought to act on tumors. The same source notes the use in Belorussian folk medicine of the A. muscaria liquid for rheumatism, but, Gammerman writes, has a prominent place in the folklore of the patients in Alexander Solzhenitsyn's Cancer Ward. On p. 278 of Soma, quoting Bogoraz (1899), there is a Chukchi riddle:

I have a headache. I am bleeding from my nose. Stop my nose bleeding! ... What is it? Answer: Fly agaric. Botorov seems to think that this is because eating A. muscaria causes a violent headache. Other sources do not appear to support this conclusion. Vinogradov, for instance, in his book Chaga was used by the East Siberian Russians as a cure for headache. He also notes that the birch fungus Polyporus sp. was used in a manner which his informant did not wish to discuss. Another remedy (Vinogradov 1915:403, item 36) is a fungus (glyrc) which seems to grow in basements. Its use is the same as that described for A. muscaria for rheumatic pain and swelling of various sorts, except that it is mixed with butter. Wasson (personal communication, June 5, 1972) insists that chaga and A. muscaria are not used for the same purposes, although he also admits that "both are bathed in what anthropologists call mana. . . ." I do not think that the connection between the two substances can be disregarded, although the possibility be excluded that Bogoraz did not know everything there was to know about the use of A. muscaria among the Chukchi. The point, however, is whether there is a certain substance (either ritually or medically) by that (more common, more easily available, more reliable) is ideal. I do not think that the connection can be disregarded, although the possibility be excluded that Bogoraz did not know everything there was to know about the use of A. muscaria among the Chukchi. The point, however, is whether there is a certain substance (either ritually or medically) by that (more common, more easily available, more reliable) is ideal. I do not think that the connection can be disregarded, although the possibility be excluded that Bogoraz did not know everything there was to know about the use of A. muscaria among the Chukchi. 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more research along these lines would tell us something about the nature of religion and the religious experience. I can only agree with Wasson that the reason so little is known about the A. muscaria is that cultural anthropologists have neglected to ask the right questions.

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European peoples, for example the habit of leaving articles of clothing in church after a prayer service or burning or bathing an image of the affected part.