# THE CHAGA STORY (Continued)

## Ron Spinosa

*"He could not imagine any greater joy than to go away into the woods for months on end, to break off this chaga, crumble it, boil it up on a campfire, drink it and get well like an animal. To walk through the forest for months, to know no other care than to get better! Just as a dog goes to search for some mysterious grass that will save him ..."*

-From "Cancer Ward" by Aleksandr Solzhenitsyn

Very few westerners had heard of "chaga" before Solzhenitsyn introduced it in his 1968 novel, *The Cancer Ward*. In that novel the protagonist, Oleg Kostoglotov, is a political prisoner, who has been released from a prison camp, only to find that he has developed cancer. He is assigned to a clinic for the treatment available at the time (primarily high dose radiation), knowing that his prognosis is next to hopeless. In the chapter titled, "The Cancer of the Birch Tree," Oleg tells his fellow cancer sufferers on Ward 13 a tale about "the birch fungus." He has their rapt attention since

*"... all longed to find some miracle doctor or some medicine that the doctors here didn't know about ... or a herbalist or some old witch of a woman somewhere, whom you only had to find and get that medicine from to be saved."*

Kostoglotov in fact claimed to know such a doctor, with whom he was in correspondence—Dr. Sergei Maslennikov. He is an old country doctor from a remote region near Moscow.

*"He'd worked dozens of years in the same hospital ... and he noticed that although more and more was being written about cancer in medical literature, there was no cancer among the peasants who came to him ... so he began to investigate and he discovered a strange thing: that the peasants in his district saved money on their tea, and instead of tea brewed up a thing called "chaga," or in other words, birch fungus. Actually it's not even a mushroom but ... a peculiar growth on old birch trees ... like spines, black on top and dark brown inside ... Anyway Sergei Nikitich Maslennikov had an idea. Mightn't it be that same "chaga" that had cured the Russian peasants of cancer for centuries without their even knowing it?"*

Solzhenitsyn's novel is largely autobiographical. After years in a Stalinist labor camp, he was finally released, but remained in exile. Shortly thereafter he too developed a malignant tumor and was a patient on a cancer ward in a clinic in Takshent, Uzbekistan.

Did Solzhenitsyn use chaga to treat his cancer? It certainly seems likely. Did it cure him? Who knows—he did get plenty of radiation too. In any case, he regarded his recovery miraculous, and it was a turning point in his life.

***Chaga has been used in Russian folk medicine since at least the 16th century.***

Chaga in fact had been used in Russian folk medicine since at least the 16th century. Among The Khanty, an indigenous reindeer herding people in Siberia, chaga was an integral part of their daily lives. Chaga was used not only as a tea, for general internal cleansing, heart disease, and liver disease; it was also smoked to treat respiratory ailments and for disease prevention. Another use was as "soap water." The alkaline ash from burnt chaga was mixed with water and used as a cleansing and disinfecting agent. In addition "soap water" was used in ritual washing and cleaning performed after menstruation, and sometimes a new-born child was subjected to this rite (Saar, 1991). The use of chaga subsequently spread to mainstream Russians who used it to treat "consumption" and cancers, often stomach and lung cancers. It was likewise considered useful for other common stomach and intestinal ailments such as gastritis, ulcers, colitis, as well as general pain. In 1955 a refined extract

of the chaga fungus (called "Befungin"), was developed by Botanical Institute of Russian Academy of Sciences, and it continues to be included in the official state pharmacopeia.

I recently learned first hand about current chaga use in Russia. The Minnesota Mycological Society had a fungus exhibit at The Science Museum of Minnesota. There was a big chunk of chaga on the table. One of the visitors was a Russian physician. She immediately recognized it, and enthusiastically told us about how it is used in her country. The chaga is used as a very concentrated alcohol tincture. The prescription: give three times daily one drop of tincture for each year of the patient's age. That would be 69 drops for me.

Later in Solzhenitsyn's chapter, "The Cancer of the Birch Tree," one of the characters learns that there are black market "suppliers" of chaga, who command *многие* rubles for their product. After the requisite condemnation of this capitalistic enterprise, he objects to the high price. Kostoglotov replies, "Do you think you can just go into the woods and get it? You have to walk about in the forest with a sack and an ax. And in the winter you need skis" (p. 48).

This suggestion inspired my mushroom club, the Minnesota Mycological Society to launch its first "Great Chaga Expedition" in March of 2005. Who would think of going on a foray with a dense cover of snow on the ground! Well, our MMS group headed up to the northern part of our state with sacks, hatchets, and cross-country skis. With a good snow cover and leafless trees we could cover lots of ground and scan many birch trees, looking for big black bumps on a white background. After surveying way more than 15,000 trees, the Great Chaga Expedition returned with a haul of about 25 pounds of precious fungus. MMS has continued this tradition for the past seven years, and we have many a colorful story to recount, as documented in the MMS newsletter *The Toadstool Review*. As far as I know we were the pioneers in this exciting winter mushroom activity. I have heard that other clubs have followed our lead.

## The Science of Chaga

I know most *Fungi Magazine* readers already know the mycological identity of chaga. It is the polypore *Inonotus obliquus*. It is a northern species that grows on birch, alder, and beech trees; however, only the specimens growing on birch are considered suitable for medicinal purposes. In its usual form, it is hardly recognizable as a mushroom. One of its common names, the "clinker polypore" is a good descriptor. It looks liked a tumor with a charred gnarled surface wedged in the trunks of birches. Even though it is a polypore, you will not see any pores as on the underside of shelf-like polypores. It is considered a "sterile conk." The black outer surface is hard, cracked and quite irregular. When you chop it off the tree trunk with your hatchet, you will find a yellow-brown interior that has a cork-like consistency and is marbled with cream-colored veins. If you are lucky you can find your chaga growing within reaching distance on the birch trunks; however, the conks often grow at a height of 10 to 30 feet, which poses a quite challenge for collecting. I've heard a rumor that the MMS foray leader, uses a shotgun to blast them loose. Another MMS member, who is a fire fighter, can shinny up a birch tree like a Polynesian up a coconut tree for the really high ones, otherwise unobtainable. I am sure our Russian comrades, who harvest tons of chaga each year in Siberia, now go out with chain saws. Some of those high altitude prizes may weigh over 10 lbs. The ideal chaga conk is 25 years old. Now consider this: according to one chaga product site, only one birch tree in 15,000 bears chaga.

The hardcore mycological types among you may be interested to know that *Inonotus obliquus* is a white rot fungus in the family Hymenochaetaceae. It is monomitic, having only generative hyphae and no clamp connections. If you want to know what all that means, there is no better resource than Tom Volk's Polypore Primer, which you can visit at: http://botit.botany.wisc.edu/toms_fungi/polypore.html.

When I started researching chaga eight years ago, I learned that there were hundreds of scientific studies relating to the potential health benefits of chaga, ranging from tumor suppression, antibacterial and antiviral activity (including HIV), immune enhancement, hepatoprotection, blood sugar moderation, and more. Pioneering books by Paul Stamets and Christopher Hobbs contain extensive listings of the early scientific articles on chaga (see references below). If you peruse those articles, you will note that most of those promising studies were done in *vitro* on various carcinoma cell lines or on animals and that they were published in Asian journals.

Despite the considerable number of chaga studies at that time, western scientists tended to ignore them, as those studies did not meet their gold standard of randomized double-blind placebo controlled clinical trials. Indeed it is only in recent years that clinical trials using the rigorous double-blind mode have been performed on medicinal mushrooms. For example Turkey tail (*Trametes versicolor*) and Maitake (*Grifola frondosa*) are currently under investigation in clinical trials for treatment of various cancers. ( Deng et al., 2009; Torkenson et al., 2002)

Hundreds more chaga studies have accumulated since my initial explorations in 2005, again mostly done *in vitro* or in animal studies. You will find more on the science of chaga in this issue of *Fungi Magazine*. I would recommend Robert Rogers excellent new book, *The Fungal Pharmacy*, for an update on some of the more recent scientific work on chaga (also see Marley, 2009). In Roger's book you will also find information about the use of chaga among Native American tribes as well as various methods of chaga preparation for medicinal use.

## The Great Chaga Gold Rush

Back in 2005 my internet search for chaga products yielded a fair number of hits, most of them from eastern European, Japanese, and Korean sites, where there has been a market for many years. That is when I became infatuated by my "Chaga Poster Girl"—the one in the photo cradling the beautiful chunk of chaga among birch trees. A Russian friend told me the caption said, "Irina invites you to join her for a cup of chaga tea." Then I thought I would check out chaga on Ebay. I found only one chaga product there, and yes, the label was in Cyrillic script.

Now fast-forward to 2012. The world of chaga is erupting furiously; there is currently a gold rush out there! (And as you might guess, there is in fact a product called Chaga Gold™ produced by Aloha Medicinals, Inc.)

Take a look at chaga products on

Amazon today. You will be amazed! There are over 70 different products. Of course you've got your nutritional supplements in capsules, but there is a lot more: tinctures, elixirs, skin creams and foot balms, chaga teas and chaga coffee immune boosters, chaga colas and bottled beverages (only $12 for an 8 oz bottle); or how about a "GOT CHAGA" T-shirt. Some of the product names will really grab you, like Chaga Max™, ChagaBlack™, Chag-O-Power™, Chaga-O-Charge™, Chaganol™, and a chaga beverage from Sayan Health with the slogan, "Chuga Chaga Lately?" Choose your flavor: original, raspberry, or apple. The ad continues,"We are excited to bring you what's been called 'King of Herbs,' 'Nature's Silver Bullet,' or more simply put Sayan™Chaga."

**Unfortunately the chaga rush is starting to leave its mark.**

Let's revisit Ebay. Besides many of the products just mentioned, you will find scads of folks selling raw chaga by the pound, some of them from northern Minnesota, where my mushroom club goes on forays. The going rate for bulk chaga on Ebay is now $20 per pound. It's not unusual to harvest 25 pounds in the right area—not a bad profit for a hike in the woods! Unfortunately the chaga rush is starting to leave its mark. Our club's last chaga foray to the north shore of Lake Superior ran into many a birch tree with a gaping wound, where chaga had already been harvested.

The plethora of chaga products are accompanied by some fabulous claims. These products are being touted as not only possible cancer cures, but also good for almost anything that ails you. Take chaga and you just might find yourself losing weight, feeling increased vigor and energy, sleeping better and thinking more clearly. You might become free of arthritic pain, eczema, high blood sugar, high cholesterol; then there is the prospect of increased sexual potency and increased longevity—and testimonials abound! If that's not enough, you might even be protected from the upcoming Bird Flu pandemic. Here is a statement from chagamushroom.com, "An adaptogen similar to chaga prevented "Bird Flu" in Native Americans during the Great 1918 Flu epidemic." But continue further down the page for the inevitable disclaimer:

*This site provides information only. In the USA there are no studies showing that Chaga cures anything. It is classified as a food only with a G.R.A.S. (Generally Referred As Safe) FDA rating. If you have a serious illness or disease it is imperative you do not rely upon this information and seek out a licensed health professional. Regardless of how our products are used in other countries, or anything that you may have heard or read, under FDA law in the United States, it is illegal for a manufacturer to make any medical claims for health supplements. ChagaMushroom.com is not a medical practitioner or healthcare provider and cannot make recommendations regarding the use of herbs or medicines to treat your specific health conditions or ailments. But we can tell you what herbs or medicines have been researched for specific conditions.*

Minnesota Mycological Society Chaga Foray 2008

## Antioxidant Power

Antioxidants are currently all the rage. We are eating blueberries, pomegranates and açaí berries by the bucketfuls. But why bother when, according to www.chagatrade.ru and the blog article titled "Chaga—Mushroom of the Gods" (http://bg.wrytestuff.com/swa409220.htm):

*"Testing of Siberian chaga has shown that chaga has the highest ORAC score (ORAC=Oxygen Radical Absorbance Capacity) recorded in any natural food: 1,104 ORAC units per gram. This is more than 6 times as powerful as açaí berries, more than 10 times the antioxidant power of pomegranate and 46 times higher than blueberries. This means that Siberian chaga has far greater capacity to wipe out free radicals in your system."*

The now defunct Eastern Synergy, a chaga marketer from Singapore, once claimed that their ORAC scores indicated that:

*"Chaga is 20-25 times more potent than mushrooms (sic) like Agaricus and Ganoderma Lucidum.*

*1gm Chaga mushroom*
*= 40 lbs carrots*
*= 4 gal beet juice*
*= 4ml clove oil*

*Free radical is the cause of cancerous cell (ORAC test: Tufts University)"*

Various Chaga web sites give ORAC values all over the map, ranging from 1,104 ORAC units/g (www.chagatrade.ru); 52,452 micromoles TE/Liter (www.mychaga.com); 365,570 no units given (www.easyconsciousliving.com). These sites often includ bar graphs portraying chaga towering above all other food Do these ORAC values mean anything? Well, not much. A lot depends on the units used whether wet weight or dry weights are compared, and on the quantity of the food normally eaten. The Wikiped article on ORAC has this to say (and Wiki articles as a ru have integrity):

*"Numerous health food and beverage companies and marketers have erroneously capitalized on the ORAC rating by promoting products claimed to be "high in ORAC." As most of these ORAC values have not been independently validated or subjected to peer review fo publication in scientific literature, they remain unconfirmed, are not scientific credible, and may mislead consumers."*

All of this does not mean that chaga isn't a good antioxidant. There are, in fact, a number of peer-reviewed scientific articles showing the significa antioxidant activity of *Inonotus obliqu* Some of these are cited below. (Also s further discussion on this topic in Ro *The Fungal Pharmacy*). So is chaga re the most powerful antioxidant known science? You will have to dig deeply ir the scientific literature to find out.

## And now for Something Completely Different

Now let's explore an unexpected twist in the Chaga story. Another common name for *Inonotus obliquus*, in some circles, is the "True Tinder Fungus." While researching chaga on the Internet, I found that chaga is well known in the "primitive skills community." They are folks who enjoy the challenge of starting fires without matches, using methods employed by humans millennia before modern times. One method is the striking together of pieces of flint or iron pyrite to generate a spark, which then falls upon on and ignites the chaga tinder. Masters of this method swear by chaga and have found it to be the best of all tinders. The dried inner portion of the chaga is the part used. Try barely touching a flame to a small piece of chaga. It instantaneously starts to smolder with a red glow, and within minutes it is reduced to a pile of fine white ash. Chaga is sold on survival sites for use in "fire pistons." A fire piston is a marvelous piece of handmade primitive technology that has been in use in Southeast Asia and Pacific Islands since prehistory. It is a hand held wooden piston with a tight fitting rod with knob. Small pieces of chaga are inserted in the bore, then holding the piston in hand and sharply striking the knob the other, the sudden air compression creates a temperature sufficient to ignite the chaga. Another polypore, *Fomes fomentarius*, has a very similar common name, the "true tinder polypore" or simply "tinder polypore" (the common name you will find in most field guides), and "Amadou." (Note also that there is a false tinder polypore / conk, *Phellinus igniarius*; see elsewhere in this issue.) This was the species I was familiar with for use as tinder before I learned about chaga. *Fomes fomentarius*, however, is a much harder fungus than *I. obliquus* and requires more preparation before use. Chaga is superior because it requires no preparation, and it "takes a spark" better. Primitive skills folks have found a method that further enhances the virtues of chaga as a tinder. "... repeated applications of urine (letting it dry in between) makes it much better at taking a spark." (See: http://www.survivalschool.com/products/fire_starting/Tinder.htm and http://www.jackmtn.com/masswildlife.html.)

## A Personal Anecdote

As we have seen here, there is certainly no shortage of extravagant claims or enthusiastic anecdotes about the wonders of chaga. As a result of my club's chaga forays, we have a number of members who have started taking chaga in some form on a daily basis. I am now hearing their anecdotes. There are reports of sleeping better, lowering of high blood pressure, relief from headaches, disappearance of age spots, and more. Some of these folks swear by chaga. As for myself, I began taking it daily since our first chaga foray in 2005. I use a heaping teaspoon of chaga per cup of water and simmer it for half an hour. I make a half gallon of chaga tea at a time and keep it in the refrigerator to drink as iced tea. I started out by adding honey, lemon and ginger, but now I like it simply with a little lime juice. I drink 3-4 cups per day. I now like chaga tea as well as regular iced tea.

Now for my anecdotal evidence: I've been drinking chaga tea for almost 8 years. The main thing I've noticed is fewer colds. I have had only three since I started regular chaga use, and they have tended to be mild and short lived. I was plagued with bowel problems for years, perhaps IBS, and now that has cleared up—but then I've been eating lots of yoghurt too. So was it the chaga or the placebo effect? Actually, I believe in the placebo

effect. I plan to continue my chaga regime and pray to The Supreme Placebo in the sky for health and longevity.

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