

## Does the Magical Himalayan Herb “Sanjeevani Booti” really exist in Nature?

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**Abstract:** For the past 1000 years or so in India, Asia and other parts of the world where the Hinduism is followed, the generations have been brought up listening and learning to the grand Hindu Epic “*The Ramayana*.” In the Ramayana, there is a description of a ‘magical herb’ called as “*Sanjeevani Booti*” or “*Life giving herb*” found in Indian Himalayas. It is believed that this magical herb has a unique property of ‘bioluminescence’ for its easy identification and is a “*panacea*” against all known and unknown diseases, which can give life even to a dying or dead person. I personally think that when the belief about a plant is so strong that it is worshiped for centuries in any part of the world then it becomes the duty of a botanist to find out the truth about the very existence of the herb itself and let people know the reality from scientific point of view. In this paper, I have tried to explain the botanical existence and the medicinal properties of this wonder herb from the Indian Himalayas. [The Journal of American Science. 2008;4(3):65-67]. (ISSN: 1545-1003).

**Key Words:** Sanjeevani Booti, Heterosporous Fern, Drought Resistant Plants, Himalayan Medicinal Herbs and Panacea.

**Introduction:** From time immemorial, generations in India and other countries have grown up hearing the grand Hindu Epic *Ramayana*. In this world famous epic of Hindi poet *Tulsidas*, there is also a description of a wonder herb called as *Sanjeevani booti (Life giving herb)*, which according to the popular belief had given life to the dying Laxmana, the younger brother of Lord Shree Rama.

Since then, the question of existence of such life-giving herb has been floating in the minds of people. According to the Ramayana, the *Sanjeevani booti* is found in the Indian Himalayas and has the unique property of **bioluminescence**, which helps in its easy identification. In Hindu mythology, Sanjeevani is a magical herb which has the power to cure every known and unknown malady. It is believed that medicines prepared from this herb can even revive a dead person also. This herb is mentioned in the Ramayana when, during the battle with Ravana (the King of Demons), Lakshmana was wounded and was nearly killed by Ravana's son Meghnaad. Hanuman was called upon to fetch this herb from the Dronagiri mountain in the Himalayas (Currently in Uttarakhand State of India). Upon reaching Mount Meru, Hanuman was unable to identify the herb and decided to lift the entire mountain and brought it to the battlefield.

**Botanical Analysis:** Now the real scientific question arises: **Is there really a wonder herb called *Sanjeevani booti* in the Indian Himalayas, with the property of bioluminescence?**

In fact according to the botanical science, this is not exactly the same plant described in the Ramayana, **but yes**- there is a plant from Indian Himalayas, with certain medicinal properties and high drought resistance, which has been given the name “*Sanjeevani booti*” by the local people and scientists. The *Sanjeevani booti* is actually a **heterosporous Indian Himalayan Pteridophyte**, which in botanical language known as *Selaginella bryopteris*. However it is a fern plant, a ‘Pteridophyte or vascular cryptogams’, and not a flower bearing ‘Angiosperm’ plant. Moreover it also does not have the power of bioluminescence, as described in the Ramayana.

**Table 1. Classification: Sanjeevani booti (*Selaginella bryopteris*) -a fern plant.**

	<b>Kingdom: Planatae</b>
	<b>Division: Lycopodiophyta</b>
<b>Class:</b>	<b>Lycopsida</b>
<b>Order:</b>	<b>Selaginallales</b>
<b>Family:</b>	<b>Selaginellaceae</b>
<b>Genus:</b>	<b><i>Selaginella</i></b>
<b>Species:</b>	<b><i>bryopteris</i></b>



**Fig 1. Sanjeevani Booti “*Selaginella bryopteris*”**

**Special Features/Future Prospects:** *Sanjeevani booti* (*Selaginella bryopteris*) has been reported to have the highest degrees of drought resistance. It is observed that this fern can withstand years of drought very effectively, and still there is no adverse effect in its vigor. The cause for this special power lies in its **drought resistant gene**. Amazed by this unique property of this fern, the scientists of NBRI (**National Botanical Research Institute**), Lucknow, India are working to isolate its special drought resistant *gene*, and they further plan to make **transgenic agricultural crops**, with the help of biotechnology by incorporating **its gene in the genomes of agricultural crops**, such as **wheat, paddy, legumes** etc. So that even in an event of monsoon failure, the agricultural crops do not suffer and can overcome the adverse condition due to **Sanjeevani’s gene**. As it is well known that India is an agricultural country, but lacks good irrigation system and the success of its agriculture depends upon the timely arrival of **monsoon** (monsoon is a local wind system in southern Asia and Africa, which produces copious amount of rain in this part of the world).

There are numerous examples of biotechnologists evolving “**plants of desire**” through **gene transfer techniques**. The examples of **Bt Cotton**, **Bt Tobacco** and other such transgenic crops can be taken, where the unique **cry gene** of the bacteria *Bacillus thuringiensis* (**Bt**) is incorporated in the genomes of normal **Cotton** (*Gossypium sp.* **Family- Malvaceae**) and **Tobacco** (*Nicotiana rustica*. **Family- Solanaceae**) to make them transgenic crops. These transgenic crops are now not affected by the attack of **Bollworm** (a insect harmful to these crops). Because the protein “**delta endotoxin**”, produced by the bacteria’s **cry gene** is now being produced by these transgenic crops and the attacking **bollworms are killed due to starvation** as the toxin dissolves the alimentary canal or gut lining of these harmful bollworms.

**Medicinal Properties:** Pharmacognosy is the branch of science, related to the study of medicinal plants and their use in curing of diseases. There are numerous drug-yielding plants distributed in all the possible habitats of plants. The Indian Himalaya also has a very rich species diversity of such medicinal plants, which are used to cure various diseases. The particular medicinal property of a plant is basically due to certain phytochemicals such as an alkaloid or its derivatives, which has a definite physiological action on the human body.

The Sanjeevani booti or *Selaginella bryopteris* also has many **therapeutic properties** and is in use by local people for centuries. Traditionally the plant has certain specific properties and is used for-

**(1) Relief from heat stroke and the burning sensation during urination-** *Selaginella bryopteris* is extensively used in **curing the heat strokes**, which is a very common complaint of humans working outside in the extremely hot hours in the month of May- June in the tropical part of the country.

**(2) Restoring menstrual irregularities to normal-**The cycle of reproductive activity shown by most sexually mature non-pregnant female mammals except most primates is called as the menstrual cycle/oestrous cycle/sexual cycle. The menstrual cycle is the periodic vaginal discharges in human and other mammals and the discharge is made up of blood and cells shed from the inner lining of uterus. *Selaginella bryopteris* is also used to cure the irregularities in the oestrous cycle or menstrual cycle.

**(3) Helping in easy delivery of pregnant women in minimizing the labor pain-**The female mammal hormone "**relaxin**" (released from ovaries) makes the delivery of the baby easy through the narrow passage of vaginal walls, by expanding its muscles. If this hormone is not produced in the adequate quantity by the body, then the labour pain (delivery pain) becomes unbearable. *Selaginella bryopteris* also has the power to help in easy delivery of pregnant women in minimizing the labor pain.

**(4) In the treatment of Jaundice-**Jaundice is the physiological disorder of human body in which the liver is affected by certain bacteria and becomes unable to perform its normal function i.e. to breakdown the harmful nitrogenous wastes and to make the internal environment clean and secure. Liver also secretes a greenish-yellow alkaline fluid called as '**Bile**', which help in the digestion and absorption of fats. Bile is stored in the gall bladder. Bile also contains the bile pigments- **Bilirubin and Biliverdin**, which is produced by the breakdown of blood pigment- haemoglobin.

In jaundice **excess bile pigments** –'bilirubin' starts gathering in the bloodstream and tissues giving a yellow to orange and even greenish colour to the skin, the white parts of the eyes and the mucous membrane. Jaundice may also be due to the blockage of bile flow start gathering in the blood, which ultimately impart yellow colour to the body and make the blood impure **Sanjeevani Booti or Selaginella bryopteris** is also used by traditional Indian people to cure the deadly disease i.e. Jaundice.

**Conclusion:** Well, we have seen the genesis of the world Sanjeevani (Life giving herb) from the Indian Himalayas, mentioned in the grand old Hindu Epic "The Ramayana." We have also explored the plant botanically and can conclude that this is exactly not the similar plant as described in the Ramayana but interestingly it's a fern plant that has been used by local peoples from centuries and has earned the name Sanjeevani for itself. It is above board that this particular plant locally known as Sanjeevani, finds a place in the group of Heterosporous Pteridophytes of Indian Himalayas, when studied from botanical point of view. Scientifically it is known as *Selaginella bryopteris*. There is no doubt that this plant has several important medicinal properties and has been worshipped among local people as a magical herb owing to its medicinal properties. But a more important aspect is the existence of a drought resistance gene inside the cells of this fern and it's sure that soon it will become a true Sanjeevani (Life giving herb) to the world agricultural crops, even in the event of absence of water!

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