

Social Distancing of Trees and Other Tree-Facts for Avoiding Diseases

Gautam Kumar Das[†]

The advent of social distancing is a great and pleasant surprise to lovers of nature. Almost all the trees may social distance to avoid diseases. In the forests, the canopy stretches for vast distances. Despite overlapping tree branches, canopy trees rarely interlock or even touch. They are separated from one another by a few feet. Researchers still keep up working on why the branches of these trees do not touch which is still a mystery, but it is thought that it might help the trees as protection from the attack of tree-eating caterpillars and other diseases including mangroves maintain mysterious gaps, called crown shyness that could serve trees share resources and help staying healthy.

Social distancing of trees is first observed by the biologist Francis Jack Putz who after hours of field work, once detained into a knotty black mangroves forest for taking rest a little bit from the heat in the afternoon after taking his lunch. After lying down upon the forest land, Francis Putz gazed at the skyward and noticed that the wind stirred the tops of the black mangroves canopy driving the branches of trees towards each other, but stopped touching the outermost leaves and branches with a continuity of a zigzag gap. Simply the tops of the trees so often refuse to touch and this phenomenon is called crown shyness. The boundaries carved by bouts between branches may improve the plant's access to resources, such as light, helping photosynthesis in the lower stories of the trees. Gaps in the tree tops and reciprocal pruning of the outermost branches and leaves of the trees, thereon, serve protection of a number of diseases and spread of leaf-munching insects, parasitic vines, or infectious diseases. Such gaps in the tree tops i.e.

crown shyness is the arboreal version of social distancing - said the eminent biologist, Meg Lowman. The minute someone starts keeping plants from physically touching each other, that increases productivity and that is the beauty of isolation and the tree is really safeguarding its own health. Not only keeping away from diseases through such social distancing, trees helps healing human diseases too through other processes such as hugging trees is really good for health particularly in the time of global corona viruses pandemic.

People are emotional beings and it is important for them, especially at times of fear, times of stress, to feel connected to someone, to feel comforted by someone. In this situation, hugging a tree is a solution- suggested by the Icelandic Forestry Service. Five minutes for hugging a tree is really good, if someone can give five minutes of a day to hug, that is definitely enough. It is really nice to close eyes while hugging a tree that feel the warmth and current flowing from the tree into the hugger. It starts warmth in toes, runs up legs and through the body into the brain. Someone gets such a good relaxing feeling that is ready for a new day and new challenges. The result of hugging trees is a simply biological treatment. The hormone oxytocin and its measurement and significance of its presence are complex like hugging partner that boosts the production of oxytocin. So, the act of hugging may be the stimulant for hormone production and such hugging trees is good for health as hugging a tree increases levels of hormone oxytocin. This hormone, oxytocin is responsible for feeling calm and emotional bonding. When hugging a tree, hormones serotonin and dopamine

[†]Email: gkdas7@gmail.com

ORCID: Gautam Kumar Das: <https://orcid.org/0000-0001-5648-5500>

make the tree-huggers feel happier. But aside of novelty of idea, there's plenty of science to back it up such as practicing of forest bathing by the Japanese for years sending the message of spending time in nature has numerous physical and mental benefits. Forest bathing is a kind of nature therapy or ecotherapy specifically with an individual's presence within nature or outdoor surroundings. Visitors, in reach, in the natural world of forest experience the essence of nature. Forests engage an individual with its soil, grass and trees in the natural environment.

In the forest atmosphere, chemicals emitted by the trees called Phytoncides and a non-pathogenic soil bacteria called *Mycobacterium vaccae* are proved to be health benefits derived from these chemicals emitted by the trees and soil-bacteria. Forest is the easy access to the visitors (in the Protected and Open Forests, but except the Reserved Forests) and generally the visitors are allowed to touch leaves, branches, stems, flower and fruits of the trees. The trees in the forest, when touched or injured somehow, they emit essential oil Phytoncides. Even some trees bring out excessive Phytoncides to prevent insects that attack the plants. These tree-emitted Phytoncides can lessen stress hormonal levels and helps declining blood pressure of the forest visitors. Phytoncides also increase immune system

of the body and enhance the anti-cancer proteins production of the human body. Further, the soil-bacteria, *Mycobacterium vaccae* strengthen serotonin in the prefrontal cortex that reduces anxiety particularly when the visitors come in touch with the exposure of forest-soil.

Plants and soils of the forests look alike, but are different in essence. Not only for taking essence of Phytoncides from the plants and come with the contact of *Mycobacterium vaccae* soil-bacteria, but for absorbing every essence of the forests, the forest visitors must engage their five sense organs - eyes, nose, ears, tongue and touch (skin). They will see the scenic beauties of the forests, hear clear call and loud calls of the birds and the crickets, get fragrance of the plants, touch leaves branches stems flower fruits and seeds, taste edible wild fruits or other foods from the forests. Researchers alert the forest visitors not to do any sorts of exercise during forest bathing, but get tired by walking, moving in and around in the natural environment of the forests. It's better to say that love to the forest bathing in its essence is spiritual fire. So the hugging of trees and forest bathing are beneficial to the human beings concerned to their physical and mental health and this is due to the social distancing maintained by the trees in their canopy.
