

(II)

CAN A CIGARATTE-BUTT START A FOREST FIRE?

Can a cigarette butt really start a forest fire? The answer can both be a 'yes' or a 'no', depending on where the cigarette-butt lands. Most people put the blame on a carelessly thrown cigarette butt for any forest fire, but when the author tried to replicate the 'butt effect', he got limited success. Only under exceptional conditions of extremely dry, hot and windy conditions did he succeed in actually starting a fire on dry Sal (*Shorea robusta*) or Teak (*Tectona grandis*) leaves but had no such luck with Pirul (dry Pine needles) and had to put in extra effort to actually ignite the fire. This was really surprising as Pirul is notorious all over the Western Himalayas for being the main reason of extensive forest fire that takes place every summer in this region!

But it is not that Pirul has gained its notoriety for nothing; it is indeed highly inflammable as it is steeped in resin. With the advent of summer, the Chir Pine (*Pinus roxburghii*) starts to shed its needles and a thick carpet of dry and highly inflammable material is formed on the forest floor. With the extremely hot and dry conditions that prevail all over the Western Himalayas during summer, even a small spark is enough to ignite a big conflagration and the resulting forest fire spreads over large forest area within no time. Yet, as mentioned above, the author found it difficult to repeat the 'butt effect' on Pirul. So how so many forest fires occur in the Chir Pine forest? Does Pirul self ignite? Not plausible as even extremely inflammable substances like petrol or diesel do not self ignite. So how does fire occur in Pirul zone? Most cases of forest fire in Pirul zone are deliberately ignited to induce good growth of grass. People also set

Pirul on fire to remove it from the forest floor as the thick carpet of Pirul makes it quite difficult and hazardous for both men and his beast to walk through the forest as Pirul is very slippery.

But after having said that most forest fires are deliberate and that Pirul does not self ignite and it is rather impossible to set fire on Pirul through the 'butt effect', yet the author has come across several instances of forest fire where the fire seemed to have started by a cigarette butt or even a bidi carelessly thrown by commuters on the road! How could a carefully conducted experiment fail when 'better' success could be achieved by a careless commuter?

A closer observation of the circumstances, under which the butt had been able to ignite the fire, revealed that a cigarette butt could not actually ignite fire if and when it landed on intact Pirul but if it landed on powdered Pirul, it could readily start fire. It was observed that the Pirul that lay around on the road surface got crushed by the vehicles or people's shoes and the after-draft of a passing vehicle blows the powdered Pirul and a thick layer gets collected on the road side. If a cigarette butt was to land on this layer of powdered Pirul, the powder readily catches fire. What is true for Pirul is equally true for other leaf litter that get crushed by vehicles and the powder gets collected on the road-side after being blown by the after-draft of moving vehicles. And unfortunately the roadside is the very place where a cigarette butt most often lands after being tossed by a careless traveller

Cigarette butt can indeed start a forest fire.

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