

CORRESPONDENCE

Mosquito repellants

There are a number of mosquito repellants in the market sold under various propriety names, starting from cream (Odomus), liquid (Mylol), coils (Tortoise), tablets (Goodknight), and each one of them are in fairly wide use. A recent study by the Vector Control Research Centre at Pondicherry has shown that the insecticide impregnated coils and mats generally contain synthetic pyrethroids like bioallethrin. They have also found that in ordinary rooms, with doors and windows closed, the rate of exchange of air is about ten times an hour, and the air levels arising from the conventional household application of the coils and mats are not exceeding 0.5 mg m^{-3} . Since, on an average, a person inhales 6-8 litres of air per minute, if one sleeps with the mat or coil on, overnight (6 hours), one may inhale about 3 m^3 of air containing 1.5 mg of chemical. This value is much below the LD_{50} value (1500 mg m^{-3} for inhalation toxicity in experimental animals and thereby pose no short term toxicity. However continuous inhalation and long term exposure are known to induce repetitive activity in various parts of the nervous system.

It is also a fact that mosquitos disappear in the daylight and hide themselves in dark places. It is therefore quite likely that the daylight spectrum has certain wavelengths which is not relished by the mosquitos. It will be a good research project for a joint study by a physicist and an entomologist with a view to find out an artificial light source which could simulate the daylight effect on the mosquitos. In that case we can be completely free from the fear of toxicity.

DINESH MOHAN

R-1/19 Rajnagar
Ghaziabad 201 002

GOD and/or Science?

Underlying scientific investigations is the belief that nature is predictable. If logic is the touchstone of science, then God cannot be all powerful. He may have created the universe, but he cannot alter it at will, for if he does, science is out of business. The ultimate pleasure in science is finding a symmetry or an invariance. Symmetry and invariance imply constraints on nature more stringent than those required by mere predictability.

If some day we build the ultimate neural network that works rationally, would it discover everything about the universe that is to be discovered? (Since man is not rational but only rationalising, it is doubtful that he can compete with this ultimate neural network.) Would we, then, in fact, have built God? Is God rational?

Most scientists appear ambivalent about the relationship between God and science. Our innate psychological insecurities make the concept of God very appealing. It led Einstein to believe in God but not in quantum mechanics! Pure reason has never convinced anybody of the existence of God.

Allegiance to God requires belief, and by custom, unquestioned belief, in his omnipresence, omniscience, and omnipotence. Allegiance to science entails another set of beliefs—nature is predictable, nature has a finite (preferably only one) number of governing laws, nature prefers symmetry, and so on. All beliefs are dogmas but catch a scientist calling himself dogmatic! Scientific beliefs surely circumscribe the freedom of God to act. Science, however, prefers loyalty to the scientific method, not to its beliefs.

Scientists have long realised that they can only hope to answer how nature functions, not why it functions the way it does, or even why it needs to exist. To

answer the 'why', there is a strong urge to believe in God. The question of 'why', of course, implies the existence of a purpose. But why should there be a purpose at all? What if the only purpose was the seminal act of creating natural laws so that God could sit back and watch the fun. Or, are the immutable laws of nature God? It would then be omnipresent and omniscient but certainly not omnipotent.

Although the 'why' and the 'how' are related, knowing one does not imply knowing the other. So perhaps God and science are doomed to stay separated.

It is possible that God is omnipotent. Then what we see is only *maya* or illusion. When God wants us to see a different reality, we go mad in the eyes of others, or we die. Perhaps time is granular and we lead multiplexed lives! The other lives being governed by illogic and hence not remembered in this.

Though the following thesis is not new, it has, unparadoxically, never been popular. It is that everything in the universe is governed by immutable natural laws. Thus there is no free will, free action, and so on. Everything is preordained, our beliefs, our actions, our hopes, our despairs, etc. The laws are the essential realities, omnipresent, omniscient, timeless. Everything else follows. There is no purpose. We live, evolve, and die by the laws of nature. There is no logical need for a God, therefore, his existence cannot be proven logically. He is a creation of our minds and therefore a creation of the laws. God did not create laws, laws created God.

You are welcome to refute.

RAJENDRA K. BERA

640 Domlur Layout
Bangalore 560 071