Tactical Termites

Maintain their Fungal Crops Infection-Free

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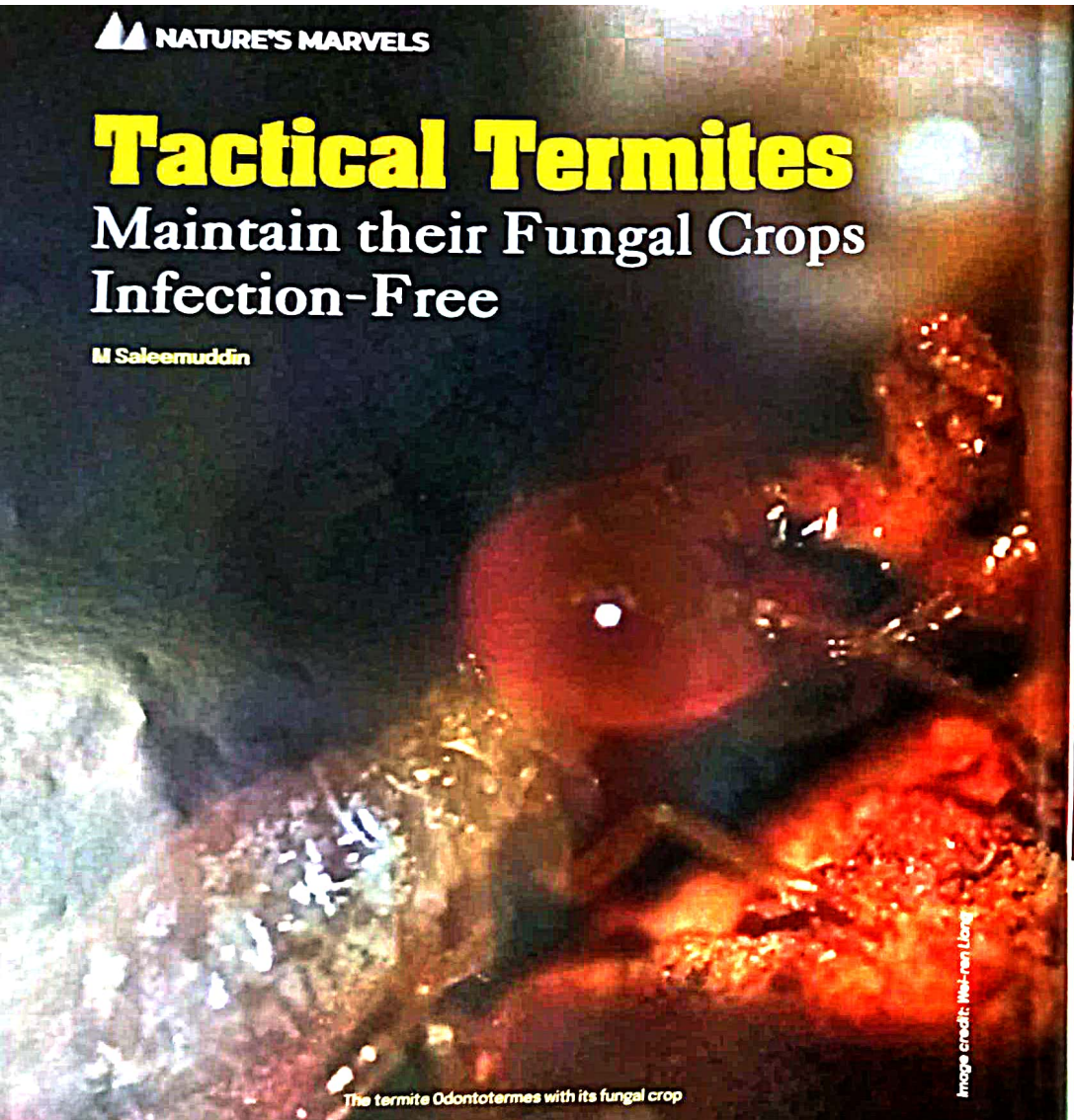

The termite Odontotermes with its fungal crop

Image credit: Wei-ren Liang

AGRICULTURE is the practice of growing crops, and termites evolved agricultural practices that support sustainable food supplies for them over 50 million years ago. This predates the advent of human agriculture, which is only about 10,000 years old. The termite *Odontotermes obesus* (Indian white termite) is native to southwestern Asia and lives in a symbiotic relationship with the fungus *Termitomyces*, which it cultivates as a crop and uses as a primary nutritional source. In return, the termite protects the fungus from infection by the weed-like fungus *Pseudoxylaria* and other pests. Just as humans protect their crops from pests, the fungus farming termites employ clever integrated pest management.

Image credit: Wikimedia Commons

The strategies termites use to protect *Termitomyces* crops from pathogens have not yet been fully clarified. A study, recently published in the journal *Science* (25 September 2025), by Rhitoban Raychoudhary of IISER Mohali and his colleagues has elucidated some sophisticated and "gardener-like" tactics employed by the termite *Odontotermes obesus* to prevent infection of its *Termitomyces* crops by a competing fungus, *Pseudoxylaria*.

Odontotermes obesus has a caste system consisting of workers, soldiers, and the reproductive castes (king and queen). Termite workers chew plant leaves, mix them with faeces, and pack the mixture into their burrow cavities to create fungal fields. The resulting combs form favourable substrates for fungal growth. Since termites feed on the fungus, their faecal matter also has its spores that survive passage through