N O T E

# Occurrence of Termite Species in Tea Plantations of Northeast India[1]

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Termites (order Blattodea) are eusocial insects that are primarily known as being structural pests, but the majority of termite species consume a variety of degraded plant material. Termites also have been reported as pests of young and mature tea plants in tea plantations of northeast India, including the states Assam, West Bengal, and Tripura, causing significant economic crop losses of 20–25% (Debnath et al. 2012, Two Bud 59: 35–38) and 30–90% (Singha et al. 2012, Int. J. Tea Sci. 8: 3–9). *Microtermes pakistanicus* (Ahmad) and *Microcerotermes* sp. were previously reported consuming and damaging live tea wood in a few regions of tea plantations across northeast India when the scavenging (e.g., consume dead wood) termite species *Odontotermes assamensis* (Holmgren), *Odontotermes feae* (Wasmann), and *Odontotermes parvidens* (Holmgren) also were reported (Anonymous 1994, Memorandum 27, Tea Research Association, Tocklai Experimental Station, Jorhat, Assam, India). Recently, Roy et al. (2020, Int. J. Trop. Insect Sci. 40: 435–440) observed an increase in termite infestations in these tea-producing regions that led us to survey these infestations to identify the species involved and their distribution in infested sections of tea gardens.

During 2020–2022, we surveyed 43 tea estates in total, with 25 of those tea estates in Assam (5 in the north bank region, 10 in the south bank region, 5 in upper Assam, and 5 in Cachar district), 10 tea estates in the Dooars and Terai region of North Bengal, and 8 tea estates in Tripura. The maximum number of gardens surveyed in each region was 10 and the minimum was 5. When sampling for termites, we used a 5-point "W" pattern of observations and collections in two or three different sections of each tea estate. Termite soldiers were collected in 70% alcohol for morphological identification.

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**Fig. 1. Dorsal view of termite soldiers identified from surveys of tea estates in northeast India: *Microtermes obesi* (A), *Ancistrotermes pakistanicus* (B), *Odontotermes feae* (C), and *Odontotermes parvidens* (D).**

Of the 42 tea estates sampled, 34 were infested with termites. Six termite species were identified from the 80 termite soldier specimens collected: *Microtermes obesi* (Holmgren), *Ancistrotermes pakistanicus* (Ahmad), *O. parvidens*, *Odontotermes obesus* (Rambur), *O. feae*, and *Odontotermes giriensis* (Roonwal and Chhotani) (Fig. 1). The most frequently collected species was *M. obesi* with 61 specimens, followed by *A. pakistanicus* (6), *O. feae* (4), *O. giriensis* (3), *O. parvidens* (3), and *O. obesus* (3) (Table 1). Hence, among these species, *M. obesi* is the most predominant termite pest. Damage to tea plantations is caused by all the six termite species, but major economic damage is caused by the live wood-eating termite *M. obesi*. All of the tea estates

**Table 1. Termite species recorded from different tea-growing regions of Northeast India.**

| Species | No. collected | Location Collected* |
|---|---|---|
| *Microtermes obesi* | 61 | SBA, NBA, CAC, UA, TRP, DT |
| *Ancistrotermes pakistanicus* | 6 | NBA, UA, SBA |
| *Odontotermes feae* | 4 | TRP, SBA |
| *Odontotermes giriensis* | 3 | TRP, UA, SBA |
| *Odontotermes parvidens* | 3 | NBA, DT |
| *Odontotermes obesus* | 3 | SBA, DT |

*SBA, South Bank of Assam; NBA, North Bank of Assam; CAC, Cachar; UA, Upper Assam; TRP, Tripura; DT, Dooars and Terai.

surveyed in the Cachar district of Assam, the north bank of Assam, and Tripura were infested with termites.

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