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Species composition, diversity, habitat ecology of termites in selected habitats of senthurai taluk, ariyalur district, Tamil Nadu, India

Salahudeen M[1], Rajasekar P[1*], Julie E[2], Arshad Shan[1], Mohammed Salim[1]
[1] Department of Zoology, Jamal Mohamed College, Tamil Nadu, India
[2] Providence Womens College, Calicut, Kerala, India
Corresponding Author: Rajasekar P

Abstract
A survey of termite diversity was conducted in selected habitats of Senthurai Taluk, Ariyalur District, Tamil Nadu, India, from January to March 2025 using a 20 m × 20 m quadrat method across three sampling sites. Three termite species, belonging to the family Termitidae were recorded: *Odontotermes obesus* (Rambur), *Odontotermes feae* (Wasmann) and *Trinervitermes fletcheri* (Snyder). *Odontotermes obesus* was the dominant species, accounting for 42.1% of the total colonies recorded, followed by *T. fletcheri* (41.0%) and *O. feae* (17.0%). One-way ANOVA revealed significant differences in colony abundance across the three sampling sites for all three species ($p < 0.05$), with Site 3 consistently recording the lowest abundance across species. Shannon–Wiener diversity index (H') ranged from 1.0082 to 1.0492 and Pielou's evenness index (J') from 0.9177 to 0.9550 across sites, indicating a moderately diverse and fairly even community. The three species showed distinct habitat and feeding preferences: *T. fletcheri* was predominantly subterranean and grass-associated, *O. obesus* was both mound-building and subterranean with polyphagous feeding habits, and *O. feae* was exclusively subterranean and dependent on dead wood. Host plant associations were recorded for *O. obesus* across 14 plant species including economically important species such as *Azadirachta indica*, *Mangifera indica*, *Tectona grandis* and *Cocos nucifera*, indicating significant pest implications for agriculture and plantation forestry in Ariyalur District. This study constitutes the first documented record of termite community composition from Senthurai Taluk and contributes to the biodiversity record of Tamil Nadu.

Keywords: Termite diversity, Isoptera, Termitidae, species composition, habitat ecology

Introduction
Biodiversity encompasses all life forms, ecosystems and ecological processes and is the very basis of human survival and economic well-being (McNeely *et al.*, 1990). Due to pollution, destruction, deforestation and over-exploitation, loss of biodiversity is occurring at an alarming rate, which may lead to the mass extinction of many organisms. The current estimates of the total number of species on earth vary from 5 million to more than 50 million, with a more conservative figure of 13.6 million species (May, 1988; Hawksworth *et al.*, 1995). Vadivalagan *et al.*, (2012) [9, 16, 25] reported more than hundreds of insect mortality within one-year period due to vehicular collision. In the different types of forest shows minimum numbers of Ant species due to the climatic variations (Mohana *et al.*, 2013) [7]. Avifauna plays an important role in ecological maintenance in a forest and natural habitats. Not only in the forest and protected areas, urbanization also plays role in minimizing species populations from the previous studies (Salahudeen *et al.*, (2013) and Pavithra *et al.*, (2013) [24]. Faunal surveys at the local and regional level are therefore essential, not only for building academic records but also for conservation planning and biodiversity management.

Termites are social insects comprising the order Isoptera, living in highly organized and integrated colonies that consist of functional reproductives, workers, soldiers and immature individuals (Krishna and Weesner, 1969) [12]. They are dominant soil animals in tropical terrestrial ecosystems, with biomass values approaching 10 g m^{-2} in humid forests, making them one of the most abundant animal groups on earth (Abe and Matsumoto, 1979) [1]. One of the principal foods of termites is wood cellulose, and several species also attack the bark, wood and roots of living plants; they are involved in increasing soil fertility by disintegrating wood and thereby enhance plant growth (Roonwal, 1970) [21]. *Mastotermes darwiniensis*, the most primitive termite alive today, is polyphagous and eats dung and plant litter as well as wood, reflecting the broad decomposer role of termites in tropical ecosystems (Brian, 1983) [5]. Three different feeding guilds are distinguished: soil feeders, wood feeders and fungus-growing termites. Fungus-growing termites maintain symbiotic fungal gardens within their nests (Bignell and Eggleton, 1995) [3].

Beyond their ecological roles, termites also have considerable economic significance, as they attack field and tree crops and forestry trees, especially in the semi-arid and sub-humid tropics, and cause significant yield loss (Harris, 1971) [8]. Some 300 species have been recorded as pests of crops, trees and buildings worldwide (Logan *et al.*, 1990) [14], and among these, *Odontotermes* and *Macrotermes* species are the most commonly reported wood-attacking termites causing economic losses in India (Roonwal, 1979) [22]. The close association of termites with living plants, especially crops, horticultural and forest trees, coconut, coffee and tea plantations, has attracted considerable attention because of the heavy damage caused.

About 253 species and subspecies under 54 genera belonging to seven families are so far known from India, of which 170 species are endemic, with maximum concentration in the Western Ghats (Maiti and Saha, 1998) [15]; however, no documentation has been made of the termite species of Senthurai Taluk, Ariyalur District, Tamil Nadu, leaving a clear gap in the regional biodiversity record.

The present study was therefore undertaken to investigate, identify and record the diversity of termites in selected habitats of Senthurai Taluk; to assess species diversity using standard ecological indices; to define the habitat and niche of the termites; to study termite–host plant interactions and the nature of damage caused; to study the feeding habits and habitat ecology of termites; and to record the natural predators of termites in the study area.

Materials and Methods

1. Study Area

The study was conducted in selected habitats of Senthurai Taluk, Ariyalur District, Tamil Nadu, India. The study sites fall broadly into two categories reflecting different levels of disturbance, namely the Moderately Disturbed Area (MDA) and the Human Altered Habitat (HAH). The total survey area covered approximately 30 acres across both habitat categories.

The study area is characterised by dry deciduous thorn scrub vegetation due to dry weather conditions and high temperature prevailing in the locality. The vegetation includes species adapted to dry and high-temperature conditions such as *Acacia* sp., *Agave* sp., *Cassia auriculata*, *Calotropis* sp., *Vitex negundo*, *Pedilanthus* sp., *Ipomoea* sp., *Cissus* sp., *Anisomeles malabarica*, *Madhuca* sp., *Ficus microcarpa* and planted species including *Cocos nucifera* and *Murraya* sp., among others (Fig. 1).

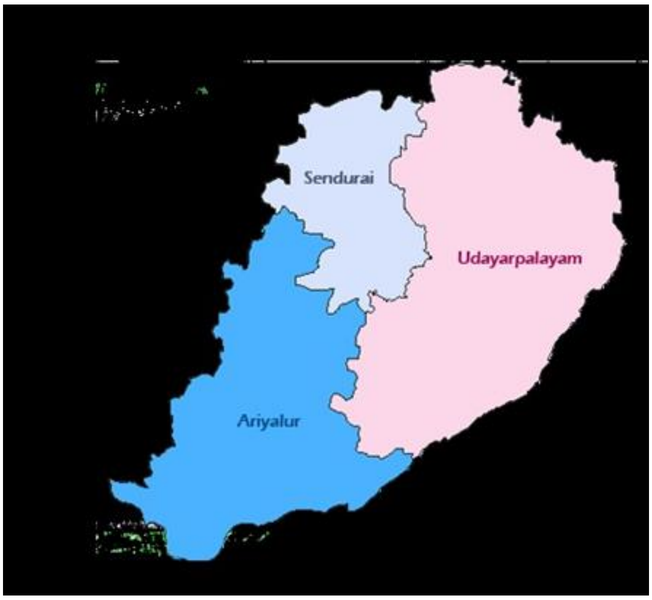

Fig 1: Map of Ariyalur District, Tamil Nadu, showing Senthurai Taluk (labelled Sendurai on map) as the study area. Three sampling sites (Site 1, Site 2 and Site 3) were established within the taluk for the purpose of termite colony abundance estimation

2. Study Period

The study was conducted from January 2025 to March 2025, covering the dry winter season of the locality.

3. Habitat Description

Two broad habitat types were identified within the study area based on the level of human disturbance. The Moderately Disturbed Area (MDA) represented habitats that were regularly grazed by cattle with some degree of human interference, supporting scrub vegetation with open ground. The Human Altered Habitat (HAH) represented areas modified by human activity including administrative buildings and residential zones with associated vegetation. Three sampling sites (Site 1, Site 2 and Site 3) were established within the study area for the purpose of abundance estimation and ecological comparison.

4. Sampling Design

The study area was divided into sampling segments covering the human altered area and dry deciduous thorn scrub vegetation. A colony survey was conducted using a repeatable quadrat sampling method to estimate the total number of termite colonies in the study area. The study area at each site was divided into sampling segments and the number of colonies of different species was counted in a series of 20 m × 20 m quadrats across the different study sites of Senthurai Taluk. Six such quadrats were surveyed per site and the average number of termite colonies in each quadrat was calculated. The values are expressed as the number of colonies of each species per 400 m^2.

5. Collection and Preservation of Specimens

Termites were collected from nests, dead wood and exposed colonies using forceps and a camel hair brush wetted with alcohol. When termites were exposed on breaking open a piece of infested wood or on cutting through a nest, the individuals were picked out singly with forceps; for convenience, a camel hair brush wetted with alcohol was applied to the termites, which adhered to the brush and were finally transferred to vials. A few representative individuals (5–20 workers and soldiers) from each encountered colony were preserved in 80% ethanol and brought to the laboratory for identification.

6. Identification

Specimens were identified to family, genus and species level following Roonwal and Chhotani (1989) and Chhotani (1997) [6, 23] as the primary references for Indian Termitidae; Hickin (1971) [10] was used as a supplementary reference.

Data Analysis

1. Species Composition

The species composition was determined by recording the number of termite species identified at each site, along with their total colony count and relative abundance expressed as a percentage of the total. The dominant species and the least abundant species were identified based on mean colony counts across all sites.

2. Diversity Indices

Species diversity was assessed using three standard ecological indices calculated for each of the three sampling sites separately.

The Shannon-Wiener diversity index (H') was calculated using the formula:

$$H' = -\Sigma (p_i \times \ln p_i)$$

where p_i is the proportion of species i relative to the total abundance at that site. H' values range from 0 (no diversity) to a maximum of ln(S), where S is the number of species.

Simpson's dominance index was calculated as $D = \Sigma(p_i)^2$ and reported as 1−D, where a value approaching 1 indicates higher diversity and lower dominance by any single species.

Pielou's evenness index (J') was calculated as:

$$J' = H' / \ln(S)$$

where S is species richness. J' ranges from 0 to 1, with values closer to 1 indicating more equal distribution of abundance among species.

3. Inferential Statistics

To determine whether colony abundance of each species differed significantly across the three sampling sites, a one-way analysis of variance (ANOVA) was conducted separately for each species. Each ANOVA compared the mean colony counts from six quadrats across three sites (k = 3 groups, n = 6 replicates per group, N = 18 total observations, df between = 2, df within = 15). A significance level of $p < 0.05$ was used throughout.

4. Post-hoc Test

Where the one-way ANOVA indicated a significant difference ($p < 0.05$), Tukey's Honestly Significant Difference (HSD) post-hoc test was applied to identify which specific pairs of sites differed significantly. The critical value used was q = 3.67 (studentized range statistic for 3 groups and df within = 15 at $p = 0.05$). The HSD threshold was calculated as:

$HSD = q \times \sqrt{(MSW / n)}$

where MSW is the mean square within groups from the ANOVA and n is the number of replicates per group.

Results

1. Species Composition and Relative Abundance

The diversity of termite species was studied during January 2025 to March 2025 in different habitats of Senthurai Taluk. In all three study areas, three termite species were recorded throughout the study period, all belonging to the family Termitidae (Table 1). The identified species and their systematic positions are as follows:

1. ***Odontotermes obesus* (Rambur):** Order Isoptera, Family Termitidae, Subfamily Macrotermitinae. Colony consists of a queen, dimorphic workers and soldiers. This is the most common species of termites in the Indian subcontinent, reported to build mounds of different types and known as a pest of crops, plantation and forestry.

2. ***Odontotermes feae* (Wasmann):** Order Isoptera, Family Termitidae, Subfamily Macrotermitinae. Colony has a queen, soldiers and dimorphic workers. Of economic importance; causes destruction to wood-work in houses and buildings. Nests are generally underground though mounds are sometimes constructed.

3. ***Trinervitermes fletcheri* (Snyder):** Order Isoptera, Family Termitidae, Subfamily Nasutitermitinae. Soldiers are dimorphic (major and minor). Distinguished by a well-developed rostrum in the soldier caste.

Of the three species recorded, *O. obesus was the dominant species, accounting for 42.1% of the total colonies recorded across all sites*, followed by T. *fletcheri* (41.0%) and O. feae as the least abundant species (16.9%).

Table 1: Mean colony abundance (colonies per 400 m²) of termite species at the three sampling sites in Senthurai Taluk, with one-way ANOVA results. * $p < 0.05$ (df = 2, 15). Values are means of six quadrat counts

Species	Site 1 (A1) Mean	Site 2 (A2) Mean	Site 3 (A3) Mean	F value (df 2, 15)	Significance
Trinervitermes fletcheri	26.83	23.67	16.00	20.2111	p < 0.05 *
Odontotermes obesus	27.50	24.00	16.83	11.2588	p < 0.05 *
Odontotermes feae	9.33	11.33	6.83	3.7045	p < 0.05 *

Tukey HSD post-hoc test: For T. fletcheri and O. obesus, Sites 1 and 2 did not differ significantly from each other but both differed significantly from Site 3 ($p < 0.05$). For O. feae, only Sites 2 and 3 differed significantly ($p < 0.05$).

2. Site-wise Abundance and Statistical Analysis

The mean colony abundance of each species per site is presented in Table 1. In Area 1, O. *obesus* was the most abundant species with a mean of 27.50 colonies per 400 m², closely followed by T. *fletcheri* (mean 26.83), while O. feae was markedly less abundant (mean 9.33). In Area 2, O. obesus and T. *fletcheri* showed nearly equal dominance with means of 24.00 and 23.67 respectively, and O. feae remained least abundant (mean 11.33). In Area 3, all three species showed reduced abundance compared to the other two areas, with O. obesus recording a mean of 16.83, T. *fletcheri* 16.00, and O. feae 6.83 (Table 1; Fig. 1, Fig. 2, Fig. 3).

One-way ANOVA revealed significant differences in colony abundance across the three sites for all three species. *O. obesus* showed significant variation across sites ($F = 11.2588$, df = 2,15, $p < 0.05$). *T. fletcheri* also showed significant site-wise variation ($F = 20.2111$, df = 2,15, $p < 0.05$). *O. feae* likewise showed significant variation ($F = 3.7045$, df = 2,15, $p < 0.05$), though the result was marginal.

Tukey's HSD post-hoc test showed that for both *O. obesus* and *T. fletcheri*, Sites 1 and 2 did not differ significantly from each other, but both differed significantly from Site 3 ($p < 0.05$). For *O. feae*, only Sites 2 and 3 differed significantly ($p < 0.05$); Sites 1 and 2, and Sites 1 and 3 did not differ significantly. Site 3 consistently recorded the lowest abundance across all three species.

3. Species Diversity Indices

The diversity indices calculated for each site are presented in Table 2. Species richness (S) was equal across all three sites (S = 3). Shannon-Wiener diversity index (H') was highest at Site 2 (H' = 1.0492), followed by Site 3 (H' = 1.0329) and Site 1 (H' = 1.0082). Simpson's dominance index (1-D) showed a similar pattern, with the highest value at Site 2 (0.6367). Pielou's evenness index (J') ranged from 0.9177 at Site 1 to 0.9550 at Site 2, indicating high evenness at all three sites with no single species showing complete dominance.

Table 2: Species diversity indices for the termite community at the three sampling sites in Senthurai Taluk. Shannon-Wiener diversity index (H'), Simpson's dominance index (1-D), Pielou's evenness index (J'), species richness (S) and total mean colony abundance (N)

Index	Site 1 (A1)	Site 2 (A2)	Site 3 (A3)	Highest at
Species Richness (S)	3	3	3	Equal
Shannon-Wiener H'	1.0082	1.0492	1.0329	Site 2
Simpson's (1-D)	0.6143	0.6367	0.6275	Site 2
Pielou's Evenness (J')	0.9177	0.9550	0.9402	Site 2
Total mean abundance (N)	63.67	59.00	39.67	Site 1

4. Habitat Ecology and Feeding Behaviour

According to their mode of living, food and host interaction, the habitat preferred by the three-termite species was observed as follows.

Trinervitermes fletcheri is by nature a subterranean dweller; however, they may also be found on grasses. They feed mostly on dry grasses and dead leaves and are predominantly grass associated. *Odontotermes obesus* are both mound-dwellers and subterranean dwellers. These termites sometimes form covered galleries on trees having connection with the ground. They were observed to feed on dead wood, paper, cow dung and sheep dung, and attack the bark and living plant tissue of trees. *Odontotermes feae* is a subterranean dweller, found sometimes in association with *O. obesus*, and feeds primarily on dead wood.

5. Host Plant Associations

Table 3 shows the termite species and their specific host plants. In the present study, only *Odontotermes obesus* was observed to attack trees and cause damage to host plants. Fourteen host plant associations were recorded for this species (Table 3). *O. obesus* was found attacking *Acacia arabica*, *Acacia mellifera*, *Ficus religiosa*, *Prosopis juliflora*, *Eucalyptus tereticornis*, *Ziziphus jujuba*, *Albizia lebbek*, *Cassia siamea*, *Azadirachta indica*, *Mangifera indica*, *Cocos nucifera*, *Tectona grandis*, *Calotropis gigantea* and rubber tree. The nature of damage included bark feeding in mature trees, damage to younger and healthy plants, and moderate to severe attack on bark. Many of the infested trees are of economic and medicinal importance (Table 3).

Table 3: Host plant associations of Odontotermes obesus recorded during the study period in Senthurai Taluk, Ariyalur District, Tamil Nadu. All 14 associations involve O. obesus; T. fletcheri and O. feae were not observed attacking plants

Host Plant Species	Termite Species	Nature of Damage
Acacia arabica	*Odontotermes obesus*	Moderate attack on bark
Acacia mellifera	*Odontotermes obesus*	Moderate attack on bark
Ficus religiosa	*Odontotermes obesus*	Bark feeding; damage to younger plants
Prosopis juliflora	*Odontotermes obesus*	Bark feeding
Eucalyptus tereticornis	*Odontotermes obesus*	Moderate attack on bark
Ziziphus jujuba	*Odontotermes obesus*	Bark feeding
Albizia lebbek	*Odontotermes obesus*	Bark feeding; severe attack
Cassia siamea	*Odontotermes obesus*	Moderate to severe bark damage
Azadirachta indica	*Odontotermes obesus*	Bark feeding; damage to younger and healthy plants
Mangifera indica	*Odontotermes obesus*	Bark feeding; complete infestation of bark in mature trees
Cocos nucifera	*Odontotermes obesus*	Damage to bark and base of stem
Tectona grandis	*Odontotermes obesus*	Bark feeding; moderate damage
Calotropis gigantea	*Odontotermes obesus*	Bark feeding
Hevea brasiliensis	*Odontotermes obesus*	Bark feeding

6. Predators Recorded

Table 4 shows the predators recorded for each termite species during the study. Ants, lizards and birds were observed as predators of *Trinervitermes fletcheri*. *Odontotermes obesus* was attacked mostly by ants and birds. *Odontotermes feae* was preyed upon exclusively by ants.

Table 4: Predators recorded for each termite species during the study period (January–March 2025) in Senthurai Taluk, Ariyalur District, Tamil Nadu

Species	Predator 1	Predator 2	Predator 3
Trinervitermes fletcheri	Ants	Lizards	Birds
Odontotermes obesus	Ants	Birds	—
Odontotermes feae	Ants	—	—

Discussion

The present study recorded three termite species from the family Termitidae across all three sampling sites in Senthurai Taluk. Among these, *Odontotermes obesus* was the dominant species, accounting for 42.1% of the total colonies recorded across all sites, a finding consistent with its wide distribution and ecological adaptability across the Indian subcontinent as documented by Bose (1984) and Roonwal (1979) [4, 22]. The dominance of *O. obesus* across all three sites may be attributed to several factors. This species has a wide choice of food, feeding on dead wood which is abundant in the dry deciduous thorn scrub of the study site, as well as on papers scattered across agricultural land, and on cow and sheep dung available from cattle grazed in the area. Further, *O. obesus* has been observed to attack many vegetation species in the study area, many of which are economically important, thereby making additional plant-derived resources available to its colonies. The Shannon-Wiener diversity index values (H' = 1.0082 to 1.0492 across sites) and Pielou's evenness values (J' = 0.9177 to 0.9550) indicate that while *O. obesus* was numerically dominant, no single species showed complete community dominance, suggesting a moderately balanced termite assemblage in the study area.

Among the three species, *Odontotermes feae* was the least abundant, contributing only 16.9% of the total colonies recorded across all sites. The low abundance of this species appears to be related to its more specialised food requirements and habitat preferences. *O. feae* was found to depend mainly on dead wood, the availability of which is limited in the dry deciduous thorn scrub of Senthurai Taluk compared to grass and dung resources. This species was sometimes found in association with *O. obesus*, suggesting that it may occupy a secondary niche in areas already exploited by the dominant species. A similar observation was made by Krishnan and Siva Ramkrishna (1993) [13] in Karnataka, where *O. feae* was recorded feeding regularly on dead wood and showed comparatively lower abundance than mound-building *Odontotermes* species. The poor habitat condition and limited food availability in the more disturbed Site 3 also appear to have suppressed the abundance of this species further, as reflected in the significantly lower mean colony count at Site 3 compared to Site 2 (Tukey HSD, $p < 0.05$). Previous studies also report habitat fragmentation and patterns significantly affect the survival rate of the organisms (Asaikutti *et al*., 2022 and Elanchezhian *et al.,* 2013) [2, 7]

The feeding habits and habitat ecology of the three species showed clear differences. *Trinervitermes fletcheri* was observed to feed on dry grasses and dead leaves in the present study. The Senthurai Taluk has a high density of grass species and shrub cover, and the food availability to this species therefore appears to be considerable. *T. fletcheri* among the Nasutitermitinae is known to cut grasses at night in the open or by day under soil covers (Ochiau and Wood, 1976) [19], and this nocturnal foraging pattern was consistent with observations in the present study. Raja Gopal (1983) [20] reported 20 species of termites representing 15 genera from southern India, among which the maximum number of species belonged to the genus *Odontotermes*; the dominance of *Odontotermes* in the present study is consistent with this regional pattern. Unlike *T. fletcheri* and *O. feae*, *O. obesus* showed polyphagous feeding behaviour, utilising dead wood, paper, dung and living plant material, which supports its higher abundance and wider habitat tolerance across disturbed and moderately disturbed areas.

The host plant associations recorded in the present study indicate that *Odontotermes obesus* is the principal pest species in the study area, causing damage to 14 plant species including several of economic and medicinal importance such as *Azadirachta indica* (neem), *Mangifera indica* (mango), *Tectona grandis* (teak), *Cocos nucifera* (coconut) and *Eucalyptus tereticornis*. The bark of mature trees and entire younger plants were observed to be completely infested in several cases. Harris (1971) [8] reported that termites cause damage to a wide range of crops and trees in the tropics; the present observation in Senthurai Taluk is consistent with this finding and indicates that *O. obesus* poses a significant threat to agricultural and plantation trees in Ariyalur District. Roonwal (1979) [22] has reported *Odontotermes* species as the most commonly reported wood-attacking termites in India, and the present observation of severe bark damage and infestation of younger plants supports this assessment in the local context of Senthurai Taluk.

Termites hold a vital status as primary consumers and contribute in many ways to the tropical ecosystem. They are involved in increasing soil fertility by disintegrating wood in its many forms and thereby enhance plant growth. In the dry deciduous thorn scrub of Senthurai Taluk, the activity of subterranean termite species in breaking down dead wood, grasses and plant litter plays an important role in nutrient cycling and soil conditioning. Thus, while *O. obesus* has significant pest implications for agricultural and plantation trees, the termite community as a whole serves a beneficial ecological function as decomposers and soil engineers in this habitat. Future studies with longer survey duration covering multiple seasons, a greater number of sampling sites across the taluk, and the use of molecular barcoding for species-level confirmation would provide a more comprehensive understanding of the termite diversity of Ariyalur District.

Plate 1: Termite mound and *Azadirachta indica* plant species in Site 1, Senthurai Taluk

Plate 2: Termite mound and *Mangifera indica* plant species in Site 2, Senthurai Taluk

Plate 3: Termite mound and *Prosopis juliflora* plant species in Site 3, Senthurai Taluk

Conclusion

The present study recorded three termite species — *Odontotermes obesus*, *Odontotermes feae* and *Trinervitermes fletcheri* — from selected habitats of Senthurai Taluk, Ariyalur District, Tamil Nadu, all belonging to the family Termitidae. This constitutes the first documented record of termite community composition from this taluk, filling a gap in the regional biodiversity record of Tamil Nadu.

Odontotermes obesus was the dominant species across all three sampling sites, accounting for 42.1% of the total colonies recorded across all sites, owing to its polyphagous feeding habits and tolerance of disturbed habitats. *Trinervitermes fletcheri* was the second most abundant species (41.0%), while *Odontotermes feae* was the least abundant (16.9%), likely limited by its dependence on dead wood as the primary food resource. One-way ANOVA revealed significant differences in colony abundance across sampling sites for all three species ($p < 0.05$), with Site 3 consistently recording the lowest abundance.

The three species showed distinct habitat preferences and feeding behaviour - *T. fletcheri* was predominantly grass-associated and subterranean, *O. obesus* was both mound-building and subterranean with wide food preferences, and *O. feae* was exclusively subterranean and dependent on dead wood. Shannon-Wiener diversity index values (H' = 1.0082 to 1.0492) and Pielou's evenness values (J' = 0.9177 to 0.9550) across the three sites indicate a moderately diverse and fairly even termite community.

Host plant associations were recorded for *O. obesus* across 14 plant species, including economically and medicinally important species such as *Azadirachta indica*, *Mangifera indica*, *Tectona grandis* and *Cocos nucifera*, indicating significant pest implications for agriculture and plantation forestry in Ariyalur District.

While the termite species recorded also serve an important ecological function as decomposers and soil engineers in the dry deciduous thorn scrub of the study area, their pest significance underscores the need for continued monitoring. Longer surveys spanning multiple seasons, broader site coverage across Senthurai Taluk, and molecular confirmation of species identity would further strengthen the biodiversity record of this ecologically important insect group in Ariyalur District.

References

1. Abe T, Matsumoto T. Studies on the distribution and ecological role of termites in a lowland rain forest of West Malaysia. 3. Distribution and abundance of termites in Pasoh Forest Reserve. Japanese Journal of Ecology,1979:29:337–351.
2. Asaikutti A, Gunasekaran C, Rajasekar P, Siva T. Annotations and suggestions on elephant proof trenches to reduce human elephant conflicts in Coimbatore forest division South India: Effectiveness of EPT on Human Elephant Conflict. Journal of Advanced Applied Scientific Research, 2022, 4(3).
3. Bignell DE, Eggleton P. On the elevated intestinal pH of higher termites (Isoptera: Termitidae). Insectes Sociaux,1995:42:57–69.
4. Bose G. Termite Fauna of Southern India. Records of the Zoological Survey of India, Occasional Paper No. 49. Zoological Survey of India, Calcutta, 1984, 270.
5. Brian MV. Social Insects: Ecology and Behavioural Biology. Chapman and Hall, London, 1983, 377.
6. Chhotani OB. Fauna of India — Isoptera (Termites), Vol. II. Zoological Survey of India, Calcutta, 1997, 800.
7. Elanchezhian M, Gunasekaran C, Lena M, Shobana G, Mohana P. Diversity of Insects in Kallar Horticulture Farm, Western Ghat, South India. International Journal of Recent Scientific Research,2013:4(4):476–480.
8. Harris WV. Termites: Their Recognition and Control. Second edition. Longmans, London, 1971, 186.
9. Hawksworth DL, Kalin-Arroyo MT. Magnitude and distribution of biodiversity. In: Heywood VH, ed. Global Biodiversity Assessment. Cambridge University Press, Cambridge, 1995, 107–191.
10. Hickin NE. Termites: A World Problem. Hutchinson and Co. Ltd., London, 1971, 232.
11. K Pavithra Shri, Gunasekaran C, Salahudeen M, Asaikkutti A, Agnes Deepa A. Assessment of Response of Elephants to Beehives Placed in a Paddy Field. Gajah,2013:38:42–43.
12. Krishna K, Weesner FM. Biology of Termites, Vol. I. Academic Press, London, 1969, 598.
13. Krishnan RV, Siva Ramakrishnan VR. Occurrence and seasonal wood-destroying activity of Odontotermes species of termites. Myforest,1993:29(1):59–64.
14. Logan JWM, Cowie RH, Wood TG. Termite (Isoptera) control in agriculture and forestry by non-chemical methods: a review. Bulletin of Entomological Research,1990:80:309–330.
15. Maiti PK, Saha N. Faunal diversity in India: Isoptera. In: Alfred JRB, Das AK, Singal AK, eds. Faunal Diversity in India. ENVIS Centre, Zoological Survey of India, Calcutta, 1998, 219–228.
16. May RM. How many species are there on earth? Science,1988:241:1441–1449.
17. McNeely JA, Miller KR, Reid WV, Mittermeier RA, Werner TB. Conserving the World's Biological Diversity. IUCN, Gland, Switzerland, 1990, 193.
18. Mohana Panneer Selvam, Chinnappan Gunasekaran, Madan Elanchezhian, Mohammad Ibrahim Salahudeen. Assessment of habitat and seasonal diversity of ants in Mukurthi National Park: A Preliminary study. African Journal of Science and Research,2013:2(6):14–19.
19. Ochiau CE, Wood TG. A method for measuring the rate of grass-harvesting by Trinervitermes geminatus (Wasmann) (Isoptera, Nasutitermitinae) and observations on its foraging behaviour in Southern Guinea Savanna, Nigeria. Journal of Applied Ecology,1976:13:705–713.
20. Raja Gopal DN. Habit and habitat studies of some termites from Karnataka. Journal of Soil Biology and Ecology,1983:3(2):108–121.
21. Roonwal ML. Termites of the oriental region. In: Krishna K, Weesner FM, eds. Biology of Termites, Vol. II. Academic Press, London, 1970, 315–391.
22. Roonwal ML. Termite Life and Termite Control in Tropical South Asia. Scientific Publishers, Jodhpur, 1979, 177.
23. Roonwal ML, Chhotani OB. The Fauna of India and the Adjacent Countries: Isoptera (Termites), Vol. I. Zoological Survey of India, Calcutta, 1989, 672.
24. Salahudeen M, Saranya E, Gunasekaran C, Vadivalagan C. Studies on the Abundance and Distribution of Birds in Three Different Habitats of Karur District, South India. Journal of Entomology and Zoology Studies,2013:1(3):57–61.
25. Vadivalagan C, Gunasekaran C, Salahudeen I. Molecular phylogeny of recurrent road killed butterflies in Nilgiri biosphere reserve, India, using CO1 gene marker. African Journal of Biotechnology,2012:11(79):14433–14439.
26. Vadivalagan C, Gunasekaran C, Salahudeen M, Heavenlin M, Karthika P. A study based on the survey of Lepidoptera victims on road kills in Coimbatore, (TN) India. International Journal of Recent Scientific Research,2012:3(5):340–342.