

## Additions to the knowledge of *Tiphiidae* (Hymenoptera: Vespoidea) from Northeastern India

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### Abstract

Few recently collected samples of Tiphiidae from north eastern India is studied. Based on the present study, the checklist of Tiphiidae from North eastern India is updated here.

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**Key Words:** Tiphiidae,  
new record, Northeastern  
India, checklist.

### 1. Introduction

Northeastern India is the easternmost region of India representing both geographic and political administrative division of the country. It comprises eight states: Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura.

The family Tiphiidae belongs to the superfamily Vespoidea and includes solitary, fossorial aculeate wasps. Anthoboscinae, Myzininae, Methochinae, Tiphiinae, Brachycistidinae, Thynninae, and Diamminae are the seven subfamilies of the family Tiphiidae, which contains over 2,000 species in 200 genera worldwide (Allen, 1975; Krombein, 1982; Hanima Raveendran *et al.*, 2022). Among these, 31 species are known from Northeastern India (Hanima Raveendran & Girish Kumar, 2020; Hanima Raveendran *et al.*, 2022). Members of the family Tiphiidae act as biological control agents for beetle larvae, particularly those of the Scarabaeidae family, which inflict serious damage to agricultural crops (Ramoutar & Legrand, 2007).

The present study reveals new distribution records of tephid wasps from various states of northeastern India.

### 2. Materials and Methods

The specimens were collected from different localities of the

northeastern states of Manipur, Mizoram, Nagaland and Tripura. A total of 35 wasp specimens belongs to the family Tiphiidae were examined here. The specimens were mounted, studied and examined under Leica M205A stereo microscope and imaged using attached Leica DFC 450 digital camera. All the studied specimens were registered and deposited at the Western Ghat Regional Centre, Zoological Survey of India, Kozhikode, India (ZSIK).

The following abbreviations are used for the museums in the text: **MCNM**: Museo Civico di Storia Naturale, Genova, Italy; **NHMUK**: The Natural History Museum, London, England; **OUM**: Oxford University Museum, Oxford, England; **RNHM**: Rijksmuseum van Natuurlijke Historie (National Museum of Natural History), Leiden, Netherlands; **ZSIK**: Western Ghat Regional Centre, Zoological Survey of India, Kozhikode, India.

### 3. Results and Discussion

#### 3.1. Systematic Account

##### Superfamily Vespoidea

##### Family Tiphiidae

##### Subfamily Tiphiinae

##### Genus *Tiphia* Fabricius, 1775

1. *Tiphia* (*Tiphia*) *cinchonae* Allen, 1975 (Fig. 1)



*Tiphia (Tiphia) cinchonae* Allen, 1975: 55–56. Holotype, male, Anamalai Hills, Southern India (RNHM).

**Material examined:** India: **Mizoram**, Aizawl district, Mizoram University Guest House (23°44'00.479"N, 92°39'32.115"E, Alt. 909 m), 2♂, 17.x.2022, Coll. A. Ramesh Kumar & Party, ZSIK Regd. Nos. ZSI/WGRC/IR/INV.22946–22947.

**Distribution:** India: Jammu & Kashmir, Karnataka, Kerala, Mizoram (**new state record**), Tamil Nadu. *Elsewhere:* Thailand (Hanima Raveendran *et al.*, 2022).

## 2. *Tiphia (Tiphia) fuscinervis*

**Cameron, 1897** (Fig. 2)

*Tiphia fuscinervis* Cameron, 1897: 48. Lectoholotype, male, Mussooree, India (OUM); Bingham, 1897: 58, 63; Allen & Jaynes, 1930: 99.

*Tiphia (Tiphia) fuscinervis*; Allen, 1969: 395.

**Material examined:** India: **Mizoram**, Aizawl district, Mizoram University, Social Science department (23°44'00.479"N, 92°40'30.077"E, Alt. 818 m), 1♂, 18.x.2022, Coll. A. Ramesh Kumar & Party, ZSIK Regd. No. ZSI/WGRC/IR/INV.22948; Aizawl district, Mizoram University Guest House (23°44'00.479"N, 92°39'32.115"E, Alt. 909 m), 1♂, 22.x.2022, Coll. A. Ramesh Kumar & Party, ZSIK Regd. No. ZSI/WGRC/IR/INV.22986.

**Distribution:** India: Mizoram (**new state record**), Uttarakhand (Hanima Raveendran *et al.*, 2022).

## 3. *Tiphia (Tiphia) khasiana* Cameron, 1902 (Fig. 3)

*Tiphia khasiana* Cameron, 1902: 86. Lectotype, female, Khasia Hills, Assam [presently Khasia hills in Meghalaya] (OUM); Allen & Jaynes, 1930: 101; Hanima Raveendran *et al.*, 2019: 133 (description of male).

**Material examined:** India: **Mizoram**, Aizawl district, Mizoram University, Social Science department (23°44'00.479"N, 92°40'30.077"E, Alt. 818 m), 1♀, 18.x.2022, Coll. A. Ramesh Kumar & Party, ZSIK Regd. No. ZSI/WGRC/IR/INV.22949; Aizawl district,

Tanhril, (23°46'04.296"N, 92°40'30.077"E, Alt. 975 m), 1♀, 19.x.2022, Coll. A. Ramesh Kumar & Party, ZSIK Regd. No. ZSI/WGRC/IR/INV.22950; **Manipur**, Senapati district, Zilphai village (25°2'45.96"N, 94°2'6.72"E, Alt. 1033 m), 1♀, 27.xii.2021, Coll. A. Ramesh Kumar & Party, ZSIK Regd. No. ZSI/WGRC/IR/INV.22951; **Nagaland**, Kohima district, Khonoma Basa (25°38'40.355"N, 94°01'15.887"E, Alt. 1520 m), 1♂, 4.xi.2021, Coll. A. Ramesh Kumar & Party, ZSIK Regd. No. ZSI/WGRC/IR/INV.22970.

**Distribution:** India: Jammu & Kashmir, Karnataka, Kerala, Manipur (**new state record**), Meghalaya, Mizoram (**new state record**), Nagaland (**new state record**), Sikkim, Tamil Nadu, Uttarakhand (Hanima Raveendran *et al.*, 2022).

## 4. *Tiphia (Tiphia) lyrata* Magretti, 1892 (Fig. 4)

*Tiphia lyrata* Magretti, 1892: 252. Type, female, Burma [Myanmar] (MCNM); Bingham, 1897: 57; Allen & Jaynes, 1930: 46.

**Material examined:** India: **Nagaland**, Kohima district, Khuzama, TB Hospital Campus (25°31'35.471"N, 93°07'56.249"E, Alt. 1616 m), 2♀, 6.xi.2021, Coll. A. Ramesh Kumar & Party, ZSIK Regd. Nos. ZSI/WGRC/IR/INV.22952 & 22980.

**Distribution:** India: Karnataka, Kerala, Nagaland (**new state record**), Tamil Nadu, Uttarakhand. *Elsewhere:* Myanmar (Hanima Raveendran *et al.*, 2022).

## 5. *Tiphia (Tiphia) nathani* Allen, 1975 (Fig. 5)

*Tiphia (Tiphia) nathani* Allen, 1975: 52–54. Holotype, male, Kadamparai, Anamalai Hills, Tamil Nadu (RNHM).

**Material examined:** India: **Mizoram**, Aizawl district, Mizoram University Guest House (23°44'00.479"N, 92°39'32.115"E, Alt. 909 m), 4♀, 22.x.2022, Coll. A. Ramesh Kumar & Party, ZSIK Regd. Nos. ZSI/WGRC/IR/INV.22953–22956.

**Distribution:** India: Andaman & Nicobar Islands, Karnataka, Kerala, Maharashtra, Mizoram (**new state record**), Tamil



Nadu, Uttarakhand. *Elsewhere*: Thailand (Hanima Raveendran *et al.*, 2022).

**6. *Tiphia (Tiphia) nilgirensis* Allen, 1975 (Fig. 6)**

*Tiphia (Tiphia) nilgirensis* Allen, 1975: 72–73, Holotype, female, Nilgiri Hills, Coimbatore, South India (RNHM).

**Material examined:** India: **Mizoram**, Aizawl district, Mizoram University, Social Science department (23°44'00.479"N, 92°40'30.077"E, Alt. 818 m), 1♀, 18.x.2022, Coll. A. Ramesh Kumar & Party, ZSIK Regd. No. ZSI/WGRC/IR/INV.22957.

**Distribution:** India: Karnataka, Kerala, Mizoram (**new state record**), Tamil Nadu. *Elsewhere*: Sri Lanka, Thailand (Hanima Raveendran *et al.*, 2022).

**7. *Tiphia (Tiphia) palmi* Krombein, 1938 (Fig. 7)**

*Tiphia rufipes* Smith, 1855: 83, Lectotype, female, Northern India (NHMUK); Magretti, 1892: 249 [female; Burma [Myanmar]; misidentified?]; Bingham, 1897: 61, 62 [female; brief description]; Turner, 1908: 120 [female; Ceylon; misidentified]; Allen & Jaynes, 1930: 100 [brief note]; Hedicke, 1936: 23 [listed].

*Tiphia palmi* Krombein, 1938: 187 [new name for *T. rufipes* Smith, not Latreille, 1797]; Krombein, 1982: 40–42.

**Material examined:** India: **Manipur**, Thoubal district, Waithou Chiru, (24°40'33.804"N, 93°58'24.491"E, Alt. 829 m), 5♀, 10.xi.2021, Coll. A. Ramesh Kumar & Party, ZSIK Regd. Nos. ZSI/WGRC/IR/INV.22981–22985;

**Mizoram**, Aizawl district, Mizoram University Guest House (23°44'00.479"N, 92°39'32.115"E, Alt. 909 m), 4♀, 2♂, 17.x.2022, Coll. A. Ramesh Kumar & Party, ZSIK Regd. Nos. ZSI/WGRC/IR/INV.22958–22963; Aizawl district, Mizoram University, Social Science department (23°44'00.479"N, 92°40'30.077"E, Alt. 818 m), 1♀, 18.x.2022, Coll. A. Ramesh Kumar & Party, ZSIK Regd. No. ZSI/WGRC/IR/INV.22964; Serchhip district, Thenzawl road (23°18'49.32"N, 92°47'47.04"E, Alt. 784 m), 1♀, 20.x.2022,

Coll. A. Ramesh Kumar & Party, ZSIK Regd. No. ZSI/WGRC/IR/INV.22965; **Nagaland**, Kohima district, Khuzama, TB Hospital Campus (25°44'54.341"N, 93°51'45.600"E, Alt. 1616 m), 1♀, 2.xi.2021, Coll. A. Ramesh Kumar & Party, ZSIK Regd. No.

ZSI/WGRC/IR/INV.22987; Kohima district, Khonoma Basa (25°38'40.355"N, 94°01'15.887"E, Alt. 1520 m), 2♀, 4.xi.2021, Coll. A. Ramesh Kumar & Party, ZSIK Regd. Nos. ZSI/WGRC/IR/INV.22988–22989;

**Tripura**, West Tripura district, Meghliband (24°4'26.4"N, 91°24'50.4"E, Alt. 57 m), 1♀, 28.x.2022, Coll. A. Ramesh Kumar & Party, ZSIK Regd. No. ZSI/WGRC/IR/INV.22966.

**Distribution:** India: Himachal Pradesh, Karnataka, Kerala, Maharashtra, Manipur (**new state record**), Mizoram (**new state record**), Nagaland (**new state record**), Tamil Nadu, Tripura (**new state record**), Uttarakhand, West Bengal. *Elsewhere*: Myanmar, Sri Lanka, Thailand (Hanima Raveendran *et al.*, 2022).

**Subfamily Myzininae**

***Mesa* Saussure, 1892**

**8. *Mesa petiolata* (Smith, 1855) (Fig. 8)**

*Mesa petiolata* Smith, 1855: 72, Holotype, male, India (OUM).

**Material examined:** India: **Tripura**, West Tripura district, Tripura University Campus (23°45'36"N, 91°15'43.2"E, Alt. 38 m), 1♀, 29.x.2022, Coll. A. Ramesh Kumar & Party, ZSIK Regd. No. ZSI/WGRC/IR/INV.22967; **Nagaland**, Dimapur district, CIH Campus (25°44'54.341"N, 93°51'45.600"E, Alt. 465 m, 1♂, 2.xi.2021, Coll. A. Ramesh Kumar & Party, ZSIK Regd. No. ZSI/WGRC/IR/INV.22968; Kohima district, Khuzama, TB Hospital Campus (25°44'54.341"N, 93°51'45.600"E, Alt. 1616 m), 1♂, 2.xi.2021, Coll. A. Ramesh Kumar & Party, ZSIK Regd. No. ZSI/WGRC/IR/INV.22969.

**Distribution:** India: Bihar, Kerala, Maharashtra, Nagaland (**new state record**), Pondicherry, Tamil Nadu, Tripura (**new state record**), West Bengal. *Elsewhere*: Sri Lanka; Thailand (Hanima Raveendran *et al.*, 2022).



### 3.2. Checklist of Tiphidae from Northeastern India

1. *Hylomesa longiceps* (Turner, 1918) – India: Assam. *Elsewhere*: Malaysia; Myanmar; Philippines; Sri Lanka.
2. *Mesa petiolata* (Smith), 1855 – India: Nagaland (new state record), Tripura (new state record). *Elsewhere*: Bihar, Kerala, Maharashtra, Pondicherry, Tamil Nadu, West Bengal; Sri Lanka; Thailand.
3. *Mesa rothney* (Cameron, 1902) – India: Meghalaya. *Elsewhere*: Thailand.
4. *Methocha violaceipennis* (Cameron, 1899) – India: Meghalaya.
5. *Tiphia (Tiphia) assamensis* Allen & Jaynes, 1930 – India: Meghalaya.
6. *Tiphia (Tiphia) brevistigma* Allen & Jaynes, 1930 – India: Meghalaya. *Elsewhere*: Kerala.
7. *Tiphia (Tiphia) canaliculata* Cameron, 1902 – India: Meghalaya. *Elsewhere*: Uttarakhand.
8. *Tiphia (Tiphia) capillata* Allen & Jaynes, 1930 – India: Meghalaya. *Elsewhere*: Karnataka, Kerala.
9. *Tiphia (Tiphia) cinchonae* Allen, 1975 – India: Mizoram (new state record). *Elsewhere*: Jammu & Kashmir, Karnataka, Kerala, Tamil Nadu; Thailand.
10. *Tiphia (Tiphia) clauseni* Allen & Jaynes, 1930 – India: Meghalaya. *Elsewhere*: Karnataka, Kerala.
11. *Tiphia (Tiphia) clavinerva* Cameron, 1904 – India: Meghalaya.
12. *Tiphia (Tiphia) consueta* Smith, 1879 – India: Sikkim. *Elsewhere*: Himachal Pradesh, Karnataka, Uttarakhand; Sri Lanka.
13. *Tiphia (Tiphia) curvinerva* Cameron, 1902 – India: Arunachal Pradesh, Meghalaya.
14. *Tiphia (Tiphia) dutti* Allen, 1975 – India: Meghalaya.
15. *Tiphia (Tiphia) fuscinervis* Cameron, 1897 – India: Mizoram (new state record). *Elsewhere*: Uttarakhand.
16. *Tiphia (Tiphia) khasiana* Cameron, 1902 – India: Manipur (new state record), Meghalaya, Mizoram (new state record), Nagaland (new state record), Sikkim. *Elsewhere*: Jammu & Kashmir, Karnataka, Kerala, Tamil Nadu, Uttarakhand.
17. *Tiphia (Tiphia) levipunctata* Allen & Jaynes, 1930 – India: Arunachal Pradesh, Meghalaya. *Elsewhere*: Thailand.
18. *Tiphia (Tiphia) lyrata* Magretti, 1892 – India: Nagaland (new state record). *Elsewhere*: Karnataka, Kerala, Tamil Nadu, Uttarakhand; Myanmar.
19. *Tiphia (Tiphia) nathani* Allen, 1975 – India: Mizoram (new state record). *Elsewhere*: Andaman & Nicobar Islands, Karnataka, Kerala, Maharashtra, Tamil Nadu, Uttarakhand. *Elsewhere*: Thailand.
20. *Tiphia (Tiphia) nepa* Allen, 1975 – India: Arunachal Pradesh. *Elsewhere*: Jammu & Kashmir, Uttarakhand; Nepal.
21. *Tiphia (Tiphia) nilgirensis* Allen, 1975 – India: Mizoram (new state record). *Elsewhere*: Karnataka, Kerala, Tamil Nadu; Sri Lanka; Thailand.
22. *Tiphia (Tiphia) orificia* Smith, 1873 – India: Meghalaya.
23. *Tiphia (Tiphia) palmi* Krombein, 1938 – India: Manipur (new state record), Mizoram (new state record), Nagaland (new state record), Tripura (new state record). *Elsewhere*: Himachal Pradesh, Karnataka, Kerala, Maharashtra, Tamil Nadu, Uttarakhand, West Bengal; Myanmar; Sri Lanka; Thailand.
24. *Tiphia (Tiphia) pullivora* Allen and Jaynes, 1930 – India: Meghalaya.
25. *Tiphia (Tiphia) quinquecarinata* Cameron, 1904 – India: Meghalaya. *Elsewhere*: Kerala, Tamil Nadu, Uttarakhand.
26. *Tiphia (Tiphia) robusta* Cameron, 1904 – India: Meghalaya.
27. *Tiphia (Tiphia) rothneyi* Cameron, 1903 – India: Meghalaya.
28. *Tiphia (Tiphia) scutensis* Allen, 1975 – India: Meghalaya.
29. *Tiphia (Tiphia) shillonga* Allen, 1975 – India: Meghalaya. *Elsewhere*: Uttarakhand; Thailand.
30. *Tiphia (Tiphia) simlaensis* Cameron, 1904 – India: Meghalaya. *Elsewhere*: Himachal Pradesh.

31. *Tiphia (Tiphia) s-prima* Allen, 1975 – India: Meghalaya. Elsewhere: Karnataka.
32. *Tiphia (Tiphia) s-quarta* Allen, 1975 – India: Meghalaya.
33. *Tiphia (Tiphia) s-secunda* Allen, 1975 – India: Meghalaya.
34. *Tiphia (Tiphia) s-sexta* Allen, 1975 – India: Meghalaya.
35. *Tiphia (Tiphia) s-tertia* Allen, 1975 – India: Meghalaya. Elsewhere: Thailand.
36. *Tiphia (Tiphia) tegelonga* Allen, 1975 – India: Meghalaya. Elsewhere: Tamil Nadu; Thailand.
37. *Tiphia (Tiphia) tegulita* Allen, 1975 – India: Meghalaya. Elsewhere: Tamil Nadu, Uttarakhand; Nepal.
38. *Tiphia (Tiphia) tuberculata* Cameron, 1904 – India: Meghalaya.

Plate 1

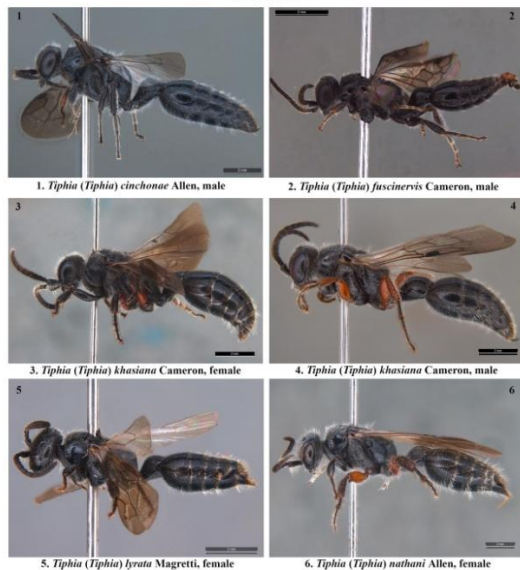
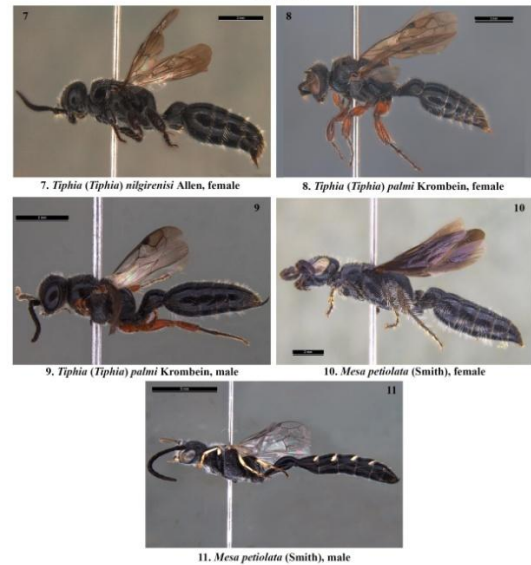


Plate 2



#### 4. Conclusion

Thirty one species are recorded from northeastern India till date (Hanima Raveendran & Girish Kumar, 2020; Hanima Raveendran *et al.*, 2022). In the present study, 7 species, namely, *Tiphia (Tiphia) cinchonae* Allen, *T. (T.) fuscinervis* Cameron, *T. (T.) lyrata* Magretti, *T. (T.) nathani* Allen, *T. (T.) nilgirensis* Allen, *T. (T.) palmi* Krombein, and *Mesa petiolata* (Smith) are recorded for the first time from northeast India.

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