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Two new species of *Diptilomiopus* Nalepa (Acari: Eriophyoidea) from India

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Original research

**ABSTRACT**

Two new species, *Diptilomiopus indogangeticus* n. sp., infesting *Ficus tinctoria* subsp. *gibbosa* (Blume) Corner (Moraceae), and *Diptilomiopus mohanasundarami* n. sp., infesting *Mangifera indica* L. (Anacardiaceae), are described from West Bengal, India. *Diptilomiopus holoptelus* Chakrabarti and Mondal and *Diptilomiopus strebli* (Boczek) are possible junior synonyms of *Diptilomiopus integrifoliae* Mohanasundaram and *Diptilomiopus asperis* Ghosh and Chakrabarti, respectively.

**Keywords**  Eriophyoid mites; Diptilomiopidae; *Diptilomiopus indogangeticus*; *Diptilomiopus mohanasundarami*; dye fig; mango

**Zoobank**  http://zoobank.org/465F8BB9-9D65-4138-B433-D0D12331EF04

**Introduction**

During periodical samplings of eriophyoid mites from different host plants in West Bengal, India, two *Diptilomiopus* species on dye fig, *Ficus tinctoria* subsp. *gibbosa* (Blume) Corner (Moraceae) and mango, *Mangifera indica* L. (Anacardiaceae) were collected. In general, mites in the *Diptilomiopus* Nalepa (1916) are mostly distributed in the Oriental region. Newkirk and Keifer (1975) set *Sectipes* Keifer (1962) as a junior synonym of *Diptilomiopus*. Similarly, Hong and Zhang (1997) set *Vilaia* Chandrapatya and Boczek (1991) as a junior synonym of *Diptilomiopus*. Craemer et al. (2005) confirmed this synonymy and transferred all additional 16 species described in *Vilaia* to *Diptilomiopus*. At present, 102 valid species of *Diptilomiopus* are known (Craemer et al., 2017; Sur et al., 2018; Amrine 2019, personal communication). So far 9 species of *Diptilomiopus* have been described on plants of the family Moraceae and 5 species on Anacardiaceae (Table 1). In this account, descriptions of two further *Diptilomiopus* species and keys for separating these from closely related species are provided. A note has been provided on *Diptilomiopus strebli* (Boczek, 1992 in Boczek and Chandrapatya 1992) infesting *Streblus asperis* Lour. (Type locality- Dusit zoo, Bangkok, Thailand) and *Diptilomiopus holoptelus* Chakrabarti and Mondal, 1983 infesting *Holoptelea integrifolia* Planch (Type locality- Kalyani, Nadia, India) suspecting their possible synonymies with *D. asperis* Ghosh and Chakrabarti, 1989 and *D. integrifoliae* Mohanasundaram, 1981, respectively.

**Material and methods**

Eriophyoid mites were collected and mounted as described by Chakrabarti et al. (2017) and Hoyer’s medium was used for mounting the specimens. The terminology and classification given by Lindquist (1996) and Amrine et al. (2003), respectively, are followed here. The specimens were examined with a phase contrast microscope Leica DM3000 and photographs
Table 1  List of Diptilomiopus species found on plants of the families Moraceae and Anacardiaceae.

| Species names | Host plants | Type localities |
|---------------|-------------|-----------------|
| On Moraceae   |             |                 |
| 1. D. artocarpae Mohanasundaram, 1981 | Artocarpus heterophyllus Lam | Musiri, Trichy District, Tamil Nadu, India |
| 2. D. asperis Ghosh and Chakrabarti, 1989 | Streblus asperis Lour. | Raghunathbari, Midnapur, West Bengal, India |
| 3. D. benjaminiae (Boczek and Chandrapatya, 2002) | Ficus benjamina L. | Amphor Siracha, Chon-Buri Province, Thailand |
| 4. D. cumingis Huang, 2001 | Ficus cumingii Müq. | Taitung, Lanyu, Taiwan, China |
| 5. D. ficifolius (Boczek and Oleczek, 1988) | Ficus sur Forsk., originally listed as its synonym F. capensis Thunb. | Abeokuta, Nigeria |
| 6. D. ficus Attiah, 1967 | Ficus carica L. | Sabahia, Egypt |
| 7. D. ficus Chakrabarti and Mondal, 1983 | Ficus hispida L. | Kalyani, Nidia, West Bengal, India |
| 8. D. indicus Chakrabarti and Pandit, 1996 | Ficus sp. | Natawat, Jalpaiguri, West Bengal, India |
| 9. D. racemosae (Chandrapatya and Boczek, 2001) | Ficus racemosa L. | Amphor Muang, Trank Province, Thailand |
| On Anacardiaceae |             |                 |
| 1. D. alagarmaliensis Mohanasundaram, 1986 | Spondias pinnata (L.) Kurz, originally listed as its synonym S. mangifera Wild. | Madurai, Alagarmalai, Tamil Nadu, India |
| 2. D. boueae (Chandrapatya and Boczek, 2002) | Bouea macrophylla Griff. | Amphor Muang, Prachim Buri Province, Thailand |
| 3. D. cythereae (Chandrapatya, 1991 in Chandrapatya and Boczek 1991) | Spondias dulcis Parkinson, originally listed as its synonym S. cytherea Sonnerat | Nakon Pathom, Thailand |
| 4. D. integrifoliae Mohanasundaram, 1981 | Buchanania latifolia Roxb., originally described from Holoptelea integrifolia Planch. (Ulmaceae) | Coimbatore, Tamil Nadu, India |
| 5. D. panithus (Boczek, 1989 in Boczek and Chandrapatya 1989) | Mangifera indica L. | Kasetsart University Campus, Bangkok, Thailand |

were taken with Leica DFC295 camera. All measurements were made following Amrine and Manson (1996) and de Lillo et al. (2010) and are given in micrometres (µm). Measurements and means are rounded off to the nearest integer and refer to the length of the morphological characters unless specified otherwise. Drawings were made following de Lillo et al. (2010) and Amrine et al. (2003). In the text, measurements of the holotype are followed by the range of measurements of the paratypes plus holotype given in parentheses. Original descriptions and measurements of D. strebli (Boczek, 1992 in Boczek and Chandrapatya 1992) and D. holoptelus Chakrabarti and Mondal, 1983 were compared with D. asperis Ghosh and Chakrabarti, 1989 and D. integrifoliae Mohanasundaram, 1981 suspecting their possible synonymies. All type specimens are now deposited in the collection of the Post-Graduate Department of Zoology, Vidyasagar College, Kolkata-700006, India. After publication, holotypes and paratypes will be deposited in public institutions: one slide with paratypes of each species will be deposited in the National Pusa Collection, Indian Agricultural Research Institute, New Delhi; the holotypes and the remnant paratypes will be deposited in the National Zoological Collection, Zoological Survey of India, Kolkata.

Results

Family: Diptilomiopidae Keifer, 1944

Subfamily: Diptilomiopinae Keifer, 1944

Diptilomiopus indogangeticus n. sp.

(Figures 1, 2)

Diptilomiopus ficivorus Sarkar, 2011: 120. Invalid name, a thesis name.
Description

**Female (n=15)** — Live colour brown. Body fusiform, 145 (140–151), 67 (66–67) wide. Gnathosoma: 39 (38–39), abruptly curved down, palp setae d 6 (5–6), palp setae ep 3 (2–3). Prodorsal shield: 22 (22–24), 44 (44–46) wide, with complete network of cells composed of one central cell and a row of 12 cells on the anterior margin, a row of 7 cells on the posterior margin and in between these two rows another 6 cells; scapular tubercles 2 (2–3) and located ahead of shield margin; scapular setae sc absent. Leg I: 23 (23–24), femur 17 (16–17), femoral setae bv absent; genu absent; tibia 6 (5–6), tibial setae l′ absent; tarsus 6 (5–6), tarsal setae ft′ 30 (29–30), tarsal setae ft″ 29 (29–31), setae u′ 2 (2–3); empodium em 10 (10–11), deeply divided, each branch 6-rayed, solenidion ω 9 (9–10), knobbed. Leg II: 21 (20–21), femur 13 (13–14), femoral setae bv absent; genu absent; tibia 4 (4–5), tibial setae l′ absent; tarsus 5 (5–6), tarsal setae ft′ 25 (25–27), tarsal setae ft″ absent, setae u′ 2 (2–3); empodium em 10 (10–11), deeply divided, each branch 6-rayed, solenidion ω 9 (9–10), knobbed. Coxae I: 14 (14–15), with granules, sternal line present; setae 1b absent; setae 1a 21 (21–22) and 8 (8–9) apart; coxae II: 14 (14–15), with granules as in coxae I, setae 2a 31 (30–31) and 15 (15–16) apart, setae 1a located little ahead of 2a. Opisthosoma: Dorsal annuli 64 (64–66) with two pairs of lateral ridges; ventral annuli 62 (60–63), with small, roundish microtubercles, last 8 (7–8) ventral annuli with elongated and linear microtubercules; setae c2 absent; setae d 12 (10–12) on ventral annulus 20; setae e 15 (14–15) on ventral annulus 32; setae f 19 (19–21) on ventral annulus 49; setae h1 absent, setae h2 32 (30–32). Genital coverflap: 16 (16–17), 22 (22–23) wide, with granules present on the basal part, setae 3a 7 (7–8). Internal genitalia: Apodeme short, spermathecae rounded with short funnel-like spermathecal tubes.

**Male** — Not found.

**Etymology** — The specific epithet is masculine in gender and ‘indogangeticus’ is derived from the locality of collections of infesting plants occurring Indo-Gangetic plane on the southern side of the River Ganges in Murshidabad district, West Bengal.

**Type material** — Holotype (circled): female (slide no. 1825/98/2016), 07 Aug. 2016, Chunakhali (24˚07′44″N, 88˚17′40″E, alt. 20 m a.s.l.), Murshidabad, West Bengal, India, from *Ficus tinctoria* subsp. gibbosa (Blume) Corner (Moraceae), coll. S. Sur. Paratypes: 2 females and 4 nymphs in the slide bearing the holotype and 15 females (slide no. 1826-1828/98/2016), collection data as in the holotype.

Additional specimens: 7 females and 9 nymphs (slide no. 1392/72/2006), 14 Oct. 2006, Amriti (24˚20′38″N, 87˚05′29″E, alt. 30 m a.s.l.), Malda, West Bengal from the same host plant, coll. S. Sarkar.

**Relation to the host plant** — Mites are vagrant on lower surface of leaves showing no apparent damage symptoms.

**Differential diagnosis** — *Diptilomiopus indogangeticus* n. sp. shows many similarities with *D. cayratus* Cheng et al., 2012; *D. euscaphiae* Wang et al., 2009; *D. lithocarpi* Wang et al., 2009; *D. ligustri* Wang et al., 2009 and *D. terstroemiae* Wang et al., 2009 in having reticulated cellular network on prodorsal shield along with scapular tubercules and presence of palp setae d and ep. However, *D. indogangeticus* n. sp. can be separated from the above mentioned species by the absence of h1 setae and having 6-rayed empodium. The above *Diptilomiopus* species are very close and can be separated by the following key.

**Remarks** — The name *Diptilomiopus ficivorus* appeared previously in the Ph.D thesis by Sarkar (2011) for this species.

**Key to the closely related species (mentioned in the differential diagnosis) of Diptilomiopus indogangeticus**

1. Empodium 3-rayed; on *Cayratia japonica* (Thunb.) Gagnep (Vitaceae) .................................

   2. Empodium at least 6-rayed ................................. 2

Chakrabarti S. et al. (2019), *Acarologia* 59(3): 383-394; DOI 10.24349/acarologia/20194337
Figure 1 Schematic drawings of *Diptilomiopus indogangeticus* n. sp.: female; LM – lateral view of the mite; AD – dorsal view of prodorsal shield region; CG – coxi-genital region; L1 – leg I; L2 – leg II; Em – empodium; IG – internal genitalia.
2. h1 setae absent; palp setae v lacking; empodium 6-rayed; on Ficus tinctoria subsp. gibbosa (Blume) Corner (Moraceae).  
— h1 setae present; palp setae v present; empodium 7-rayed.  3

3. Ventral annuli 62–64; genital coverflap sculptured with only granules; on Lithocarpus glaber (Thunb.) Nakai (Fagaceae)  
— Ventral annuli at least 77; genital coverflap either with granules and small lines or only sculptured with basal short lines.  4

4. Genital coverflap sculptured with basal short lines, dorsal annuli 60–71; on Ligustrum quihoui Carr. (Oleaceae)  
— Genital coverflap with granules either at base or on whole coverflap region; dorsal annuli either 49–54 or 56–62.  5

5. Prodorsal shield cells arranged in 4 rows and without unpaired central cell; dorsal annuli 49–54; granules present only at basal part of genital coverflap; on Ternstroemia nitida Merr. (Theaceae)  
— Prodorsal shield cells arranged in 3 rows and with an unpaired central cell; dorsal annuli 56–62; granules present on whole genital coverflap; on Euscaphis japonica (Thunb.) Kanitz (Staphyleaceae).  5

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**Figure 2** Light micrographs of Diptilomiopus indogangeticus n. sp.: female: A – prodorsal shield design; B – lateral view of annuli; C – dorsal ridges; D – coxi-genital region.
A further key can separate the Diptilomiopus species associated with plants within the family Moraceae.

**Key to the Diptilomiopus associated with Moraceae**

1. Genital cover flap with longitudinal scorings ........................................ 2
   — Genital cover flap either granulated or smooth .................................. 3

2. Prodorsal shield with median line present on both anterior and posterior 0.25 parts; 7-rayed empodium; on *Ficus hispida* (L.) ..................................... *D. ficus* Chakrabarti and Mondal, 1983
   — Prodorsal shield without median line; 5-rayed empodium; on *Artocarpus heterophyllus* Lam. .......................................................... *D. artocarpace* Mohanasundaram, 1981

3. Accessory setae *h1* present; on *Ficus benjamina* L. .................................. *D. benjaminiae* (Boczek and Chandrapatya, 2002)
   — Accessory setae *h1* absent ........................................................... 4

4. Smooth genital cover flap; both coxae smooth; on *Streblus asperis* Lour. .............. *D. asperis* Ghosh and Chakrabarti, 1989
   — Granulated genital cover flap; at least one coxa ornamented .................. 5

5. Both coxae granulated; prodorsal shield with 25 cells; on *Ficus tinctoria* subsp. *gibbosa* (Blume) Corner ......................................................... *D. indogangeticus* nsp.
   — Either both coxae or at least one coxae smooth; prodorsal shield with less than 25 cells . . . 6

6. Empodium 4-rayed; on *Ficus carica* (L.) ............................................. *D. ficus* Attiah, 1967
   — Empodium at least 6-rayed ............................................................. 7

7. Opisthosoma with smooth dorsal and ventral annuli; on *Ficus cumingii* (L.) .............. *D. cumingis* Huang, 2001
   — Opisthosoma with smooth dorsal and either microtuberculated or microstriated ventral annuli ................................................................. 8

8. Ventral annuli with microstriations; 22 cells on prodorsal shield; on *Ficus racemosa* L. ................................................................. *D. racemosae* (Chandrapatya and Boczek, 2001)
   — Ventral annuli with microtubercles; either 26 or 18 cells on prodorsal shield ........... 9

9. 26 cells on prodorsal shield with a central cell; both coxae smooth; on *Ficus sp.* ................................................................. *D. indicus* Chakrabarti and Pandit, 1996
   — 18 cells on prodorsal shield without central cell; only coxae II smooth; on *Ficus capensis* Thunb. ................................................................. *D. ficifolius* (Boczek and Oleczek, 1988)

**Diptilomiopus mohanasundarami** n. sp.

(Figures 3, 4)

*Diptilomiopus mangiferae* Sarkar, 2011: 125. Invalid name, a thesis name.

Zoobank: http://zoobank.org/act/5FCE349F-A4EE-4EC0-9D12-49A3CAFBD2DA7

**Description**

Female (n=15) — Live colour brown. Body fusiform, 146 (142–157), 74 (74–75) wide. Gnathosoma: 49 (46–49), abruptly curved down, palp setae *d* 7 (7–8), palp setae *ep* 3 (2–3). Prodorsal shield: 31 (31–33), 63 (63–64) wide; prodorsal shield with a central cell and a row
Figure 3 Schematic drawings of Diptilomiopus mohanasundarami n. sp.: female - LM – lateral view of the mite; AD – dorsal view of prodorsal shield region; CG – coxi-genital region; L1 – leg I; L2 – leg II; Em – empodium; IG – internal genitalia.
of 12 cells on the anterior margin, besides, one cell below and one cell lateral to the central cell, other cell architecture on the posterior half of prodorsal shield not distinct; scapular tubercles 2 (2–3) and located ahead of shield margin but scapular setae sc absent. Leg I: femur 16 (16–17), femoral setae bv absent; genu absent; tibia 5 (4–5), tibial setae l′ absent; tarsus 6 (5–6), tarsal setae fl′ 39 (38–39), tarsal setae fl″ 38 (38–40), setae u′ 2 (2–3); empodium em 10 (10–12), deeply divided, each branch 6-rayed, solenidion ω 9 (9–10), knobbed. Leg II: femur 14 (14–15), femoral setae bv absent; genu absent; tibia 4 (3–4), tibial setae l′ absent; tarsus 5 (5–6), tarsal setae fl′ 34 (34–35), tarsal setae fl″ absent, setae u′ 2 (2–3); empodium em 10 (10–12), deeply divided, each branch 6-rayed, solenidion ω 9 (9–10), knobbed. Coxae I: 14 (14–15), jointed at base, with granules, sternal line present; setae 1b absent; setae 1a 25 (24–26) and 5 (5–6) apart; coxae II: 13 (13–14), smooth, setae 2a 49 (48–50) and 13 (13–14) apart, setae 1a located little ahead of 2a. Opisthosoma: dorsal annuli 58 (58–60) and little undulated; ventral annuli 53 (52–55), with small, roundish microtubercles till 46th annuli, last 7 (7–8) ventral annuli with elongated and linear microtubercles; setae c2 absent; setae d 12 (11–12) on ventral annulus 16; setae e 10 (10–11) on ventral annulus 27; setae f 18 (17–18) on ventral annulus 42; setae h1 absent, setae h2 32 (32–33). Genital coverflap: 16 (16–17), 22 (22–23) wide, with very few granules on the basal part, setae 3a 9 (9–10). Internal genitalia: Apodeme short, spermathecae rounded with short funnel-like spermathecal tubes.

**Male** — Not found.

**Etymology** — The specific epithet is masculine in gender and derived after the name of Prof. M. Mohanasundaram, eminent Acarologist from India.

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**Figure 4** Light micrographs of *Diptilomiopus mohanasundarami* n. sp.: female: A – prodorsal shield design; B – coxal ornamentation; C – coxi-genital region; D – lateral view of annuli.
Type material — Holotype (circled): female (slide no. 1829/174/2017), 13 Jan. 2017, Kalyani (22°98′56″N, 88°26′44″E, alt. 11 m a.s.l.), Nadia, West Bengal, India, from Mangifera indica (L.) (Anacardiaceae), coll. S. Sur. Paratypes- 1 female and 2 nymphs in the slide bearing the holotype and 13 females and 8 nymphs (slide no. 1830-1833/174/2017), collection data as in the holotype.

Additional specimens: 5 females and 2 nymphs (slide no. 1375/91/2006), 24 Dec. 2006, 30 females and 4 nymphs (slide no. 1376-1380/91/2007), 09 Oct. 2007, Amriti (24°20′38″N, 87°05′29″E, alt. 30 m a.s.l.), Malda, West Bengal from the same host plant, coll. S. Sarkar.

Relation to the host plant — Mites are vagrant on lower surface of leaves showing no apparent damage symptoms.

Differential diagnosis — Diptilomiopus mohanasundarami n. sp. shows most similarities with D. cerberae (Chandrapatya, 1998 in Boczek and Chandrapatya 1998) and D. meliae (Boczek, 1998 in Boczek and Chandrapatya 1998) in having incomplete orientation of cells on posterior half of prodorsal shield and 6-rayed empodium. But D. mohanasundarami n. sp. can be separated from the above species in having a total of 15 cells on prodorsal shield (20 cells in D. cerberae and 17 cells in D. meliae).

Diptilomiopus mohanasundarami n. sp. remains distinct from D. panithus, another species of Diptilomiopus on Mangifera indica (L.) in having the prodorsal shield with 15 cells; only the coxae I are granulated and the opisthosoma is provided with 58 dorsal annuli and 53 ventral annuli (in D. panithus 16 cells are present on prodorsal shield, both coxae are granulated and the opisthosoma is provided with 43 dorsal annuli and 60 ventral annuli). Apart from this, cellular orientations on the prodorsal shield are totally different. Here, a key is given to separate the Diptilomiopus species on Anacardiaceae.

Remarks — The name Diptilomiopus mangiferae appeared previously in the Ph.D thesis by Sarkar (2011) for D. mohanasundarami for this species.

Key to the species of Diptilomiopus associated with Anacardiaceae

1. Dorsal annuli microtuberculated. ................................................................. 2
   — Dorsal annuli smooth .......................................................... 3

2. Both coxae smooth; 11 cells on prodorsal shield; on Spondias pinnata (L.f.) Kurz. ....
   — D. alagarmaliensis Mohanasundaram, 1986
   — Both coxae granulated; 17 cells on prodorsal shield; on Spondias dulcis Parkinson
   ................................................ D. cythereae (Chandrapatya, 1991 in Chandrapatya and Boczek 1991)

3. Prodorsal shield with incomplete network of 15 cells; on Mangifera indica (L.) ........
   — Prodorsal shield with complete network of cells ................................. 4

4. Only coxae I granulated; on Bouea macrophylla Griff. .................................
   — D. boueae (Chandrapatya and Boczek, 2002)
   — Both coxae granulated ................................................................. 5

5. Opisthosoma with 57–67 dorsal and 66–71 ventral annuli; prodorsal shield with 26 cells; on Buchanania latifolia Roxh. ........................................ D. integrifoliae Mohanasundaram, 1981
   — Opisthosoma with 43–45 dorsal and 60–62 ventral annuli; prodorsal shield with 16 cells; on Mangifera indica (L.) ........ D. panithus (Boczek, 1989 in Boczek and Chandrapatya 1989)

Diptilomiopus asperis Ghosh and Chakrabarti, 1989

Diptilomiopus asperis Ghosh and Chakrabarti, 1989, Indian Journal of Acarology, 11 (1-2): 71.
Visalia strebli Boczek, 1992: Boczek and Chandrapatya, 1992, Bull. Pol. Acads. Sci., Biol. Science., 40 (4): 272-273. 

Diptilomiopus strebli (Boczek, 1992 in Boczek and Chandrapatya, 1992): Hong and Zhang, 1997. Syst. Ent., 22: 323.

**Comments** — *Diptilomiopus strebli* is identical in description and also from the same host but its type specimens could not be studied. This species is a possible junior synonym of *D. asperis*.

**Diptilomiopus integrifoliae* Mohanasundaram, 1981**

*Diptilomiopus integrifoliae* Mohanasundaram, 1981, Oriental insects, 15 (1): 49-51. 

*Diptilomiopus holoptelus* Chakrabarti and Mondal, 1983, Acarologia, XXIV (3): 302-303.

**Comments** — *Diptilomiopus holoptelus* is morphologically identical with *D. integrifoliae* except for the number of rays on empodium, (the former with 7 rayed and the later with 5 rayed) and described from the same host but its original type specimens could not be studied. This species is probably a junior synonym of *D. integrifoliae*.

**Remarks on the morphological groups within the genus Diptilomiopus** — The species of *Diptilomiopus* are found on several unrelated host plants and a few species (Table 2) have been recorded on more than one host in contrast to most of the other eriophyoids which are host specific (Skoracka *et al.*, 2010). Species currently recorded on different hosts may contain cryptic species. Only morphological study is not sufficient to ascertain their cryptic nature (Li

| Table 2 List of a few species of *Diptilomiopus* found on more than one host plant. |
|-----------------------------------|---------------------------------|---------------------------------|---------------------------------|
| Name of the species               | Host plants recorded            | Type locality                  | References                      |
| 1. *D. bengalensis* Chakrabarti and Mondal, 1979 | i) Gardenia jasminoides Ellis (Rubiaceae) | India: West Bengal: Nadia, Kalyani | Chakrabarti and Mondal 1979     |
|                                  | ii) Azima tetracantha Lam (Salvadoraceae) |                                   | Mohanasundaram 1984             |
| 2. *D. camerae* Mohanasundaram, 1981 | i) Lantana camera L. (Verbenaceae) | India: Tamil Nadu: Aliyarnagar near TNAU farm | Mohanasundaram 1981             |
|                                  | ii) Cissus vitiginea (L.) W. Theob, originally listed as its synonym Vitis vitiginea Kuntze (Vitaceae) |                                   | Mohanasundaram 1984             |
|                                  | iii) Hymenodictylon excelsum (Roxb.) Mabberley (Rubiaceae) |                                   | Ghosh 1989                      |
| 3. *D. cuminis* Chakrabarti et al., 1992 | i) Syzygium cuminii (L.) Skeels (Myrtaceae) | India: West Bengal: Bankura, Dubrakone | Chakrabarti *et al.*, 1992       |
|                                  | ii) Morinda persicifolia Buch.-Ham. (Rubiaceae) |                                   | Ghosh 1989                      |
| 4. *D. integrifoliae* Mohanasundaram, 1981 | i) Holoptelea integrifolia Planch (Ulmaceae) | India: Tamil Nadu: Coimbatore | Mohanasundaram 1981; Chakrabarti and Mondal 1983 |
|                                  | ii) Neolamarkia kadamba (Roxb.) Bosser, originally listed as its synonym Anthocephalus kadamba (Rubiaceae) |                                   | Das 1983                        |
| 5. *D. thangaveli* Mohanasundaram, 1983 | i) Casearia tomentosa Roxb. (Salicaceae) | India: Tamil Nadu: Chidambaran | Mohanasundaram 1983             |
|                                  | ii) Tagetes sp. (Asteraceae) |                                   | Mohanasundaram *et al.*, 1985    |
et al., 2014). Application of other tools such as molecular studies, host transfer experiments etc., may “clarify taxonomic uncertainties”. However, different subgroups within this genus have not been confirmed yet, but four groups viz. i) having complete network of cells on prodorsal shield or incomplete cell-like ornamentation and ii) another group may be based on the presence or absence of scapular tubercles (apparently there is a tendency of reduction of scapular tubercles in the species of *Diptilomiopus*) may be presumed. The two species herein described present scapular tubercles but in *D. indogangeticus* n. sp. complete network of cells are present on prodorsal shield while in *D. mohanasundarami* n. sp. the cells are incomplete on posterior part of prodorsal shield.

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