

MANTIS INDICA MUKHERJEE, 1995: A SYNONYM OF STATILIA NEMORALIS (SAUSSURE, 1870) (INSECTA: MANTODEA)

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Taxonomy of mantids based on external features may often lead to a wrong assignment of the status of a new species. Hence emphasis is given on the structure of male genitalia which provides a perfect clue to the status of the species. In this paper a new synonym has been established by comparing external features and genitalia. *Mantis indica* (Images 5 & 6, holotype female) was described by Mukherjee in Mukherjee et al. (1995) based on one male and one female from Himachal Pradesh, India. Later, the dissected genitalia of this species were found to match perfectly with the genitalia of *Statilia nemoralis* (Saussure, 1870). However, some morphological distinctions are obvious between the two species. The three species studied under the genus *Mantis* were: *Mantis religiosa* L., 1758, *Mantis inornata* Werner, 1930, and *Mantis indica* Mukherjee, 1995. The three species studied under the genus *Statilia* were: *Statilia apicalis* (Saussure, 1871), *Statilia maculata* (Thunberg, 1784) and *Statilia nemoralis* (Saussure, 1870). All these were studied for their external features. The genitalia were dissected out from species as mentioned in materials and method section. It is to be noted that Roy (1999: 163) mentioned that by description *Mantis indica* Mukherjee, 1995 falls

under the genus *Statilia*, however, the description of genitalia was not given. Berg et al. (2011: 44) attested the view of Roy (1999).

Materials and Method: The study materials came from West Bengal and Himachal Pradesh of India as mentioned here. These were identified based on external and genitalia characters.

Statilia nemoralis (Saussure, 1870): 25.x.2005, 3 males, Narendrapur, South 24 paraganas, West Bengal, 22.459729°N & 88.381920°E, coll. P. Chatterjee; 14.ix.2005, 2 males, Ranaghat, Nadia, West Bengal, 23.172389°N & 88.568001°E, coll. P. Chatterjee.

Statilia maculata (Thunberg, 1784), 22.x.1999, 2 males, Purulia, West Bengal, 23.328974°N & 86.370392°E, coll. P. Chatterjee.

Mantis indica Mukherjee, in Mukherjee et al. 1995: 4.vi.1971, holotype female, Chail, Himachal Pradesh, (NZSI) (figs. 5 & 6), 30.969722°N & 77.197499°E, coll. M. Chandra; 30.xi.1975, allotype male, Renuka Lake, Himachal Pradesh, 30.523151°N & 77.308044°E, coll. A. Kumar.

Mantis inornata Werner, 1930: 18.ix.2001, 1 male, Shillong, Meghalaya, 25.583902°N & 91.877289°E, coll. NA.

Results and Discussion: In both the species, *Mantis religiosa* and *Mantis inornata*, the hypophallus is distinctly very big and oval elongated; its distal end is blunt finger-like in *Mantis religiosa* (Bazyluk 1960, fig. 51), but more pointed in *Mantis inornata* (Image 1; also Bazyluk 1960, fig. 52). The hypophallus is broad and triangular in *Statilia maculata* (Image 2); but this is very narrowly triangular in both *Mantis indica* (Image 3) and



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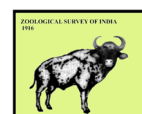
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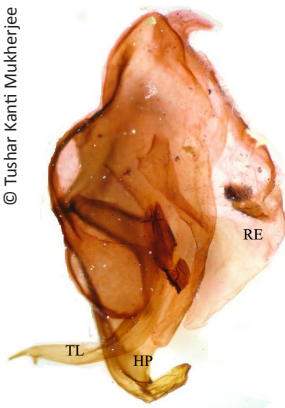


Image 1. *Mantis inornata* genitalia
HP - Hypophallus; RE - Right epiphallus; TL - Titillator

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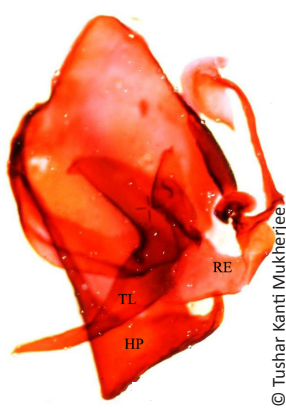


Image 2. *Statilia maculata* genitalia
HP - Hypophallus; RE - Right epiphallus; TL - Titillator

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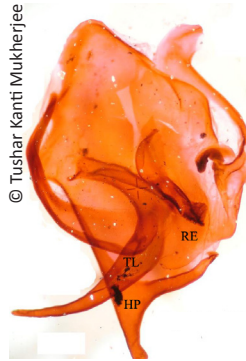


Image 3. *Mantis indica* genitalia
HP - Hypophallus; RE - Right epiphallus; TL - Titillator

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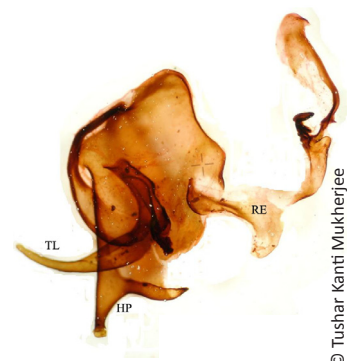


Image 4. *Statilia nemoralis* genitalia
HP - Hypophallus; RE - Right epiphallus; TL - Titillator



Image 5. *Mantis indica* (holotype female), dorsal view



Image 6. *Mantis indica* (holotype female), ventral view

Statilia nemoralis (Image 4). The apex of the titillator of *Mantis religiosa* and *Mantis inornata* are distinct by its bifid apex. This feature is absent in *Mantis indica*, *Statilia nemoralis* and *Statilia maculata*.

The development of contiguous internal apical lobes of coxae puts *Mantis indica* under the genus *Statilia*. This is supported by the presence of (i) black patch on femur, (ii) pale yellow claw groove, and (iii) black internal spines with extensions. However, there are some morphological similarities between *Mantis indica* and *Mantis inornata* (Table 1) whose genitalia are distinctly different. Again, *Mantis indica* and *Mantis inornata* deviated much from *Mantis religiosa*; some characters common to these two species are quite diagnostic in members of *Statilia*.

Some of the specific characters of *Mantis religiosa* are not seen in any species of the two genera which may be assumed as a separate line of evolution (Table 1).

Thus the following inferences may be made on the two genera:

1. *Mantis religiosa* has probably deviated more from the main stock of the genus *Mantis*.
2. *Mantis inornata* seems to be more primitive by the development of no patches on coxa, more triangularly elongated hypophallus and pale yellow claw groove.
3. *Mantis indica* and *Statilia nemoralis* share most characters but the position of the claw groove is different in the two species. These two species seem to represent an intermediate stage between the advanced forms

Table 1. Morphological differences among related species of Mantis and Statilia

Species	Position of claw groove	Internal apical lobe of fore coxa	Color of coxal area	Prosternal basal patch	Inner patch of femur
<i>M. religiosa</i>	Medial	Divergent	Yellow spot enclosed by black	Not black	Yellow
<i>M. inornata</i>	Medial	Divergent	Not black	Not black	Pale yellow
<i>M. indica</i>	Medial	Contiguous	Not black	Not black	Pale white + Black
<i>S. maculata</i>	In front of middle	Contiguous	Black	Black	Yellow
<i>S. apicalis</i>	In front of middle	Contiguous	Not black	Black	Yellow
<i>S. nemoralis</i>	In front of middle	Contiguous	Not black	Not black	Yellow + Black

(*Mantis religiosa* and *Mantis inornata*) and the species under the genus *Statilia apicalis* and *Statilia maculata*).

4. The important characters for consideration of phylogeny are: contiguous/divergent internal apical lobes of coxa, position of claw groove, shape and form of hypophallus and titillator.

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