

## **NOTE ON ZOOGEOGRAPHY OF ODONATA (INSECTA) OF NICOBAR ISLANDS, INDIAN OCEAN**

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### **INTRODUCTION**

The Nicobar group of islands is comprised of twenty two islands with an area of total landmass of about 1840 sq. km. The extreme length of space occupied by this group of islands is about 210 km. and the extreme width is about 60 km. Among these islands the Great Nicobar is the largest with an area of about 1045 sq. km. The distance between the northern point of these islands and the southern point of the Andaman group of islands is about 135 km.; similarly the distance of the southern tip of the Great Nicobar from the northern tip of Sumatra is also approximately 135 km.

Physically these islands are young fold mountains, with Cretaceous rocks, a continuation of Arakan-Yoma of Burma (Myanmar). According to geological records these islands first appeared from the ocean-bed about 110 million years ago in the Mesozoic period, and have undergone several periods of partial submergence and elevation since their appearances. So that the terrestrial fauna has never been wiped out. The islands experience hot and dry tropical climate, and are largely covered by evergreen rain forests. But they actually lack fresh surface waters which usually act as breeding grounds of odonates.

The object of the paper is to report a list of Odonata known so far from these islands, with a note on the composition of odonate fauna and their affinities with the fauna of different zoogeographical regions and nearby lands.

### **HISTORICAL REVIEW**

Selys (1853) first reported Odonata fauna from Nicobar islands. Later Hagen (1858, 1867), Selys (1863, 1877), Brauer (1864, 1865, 1867), Laidlaw (1917), Fraser (1933, 1934, 1936), Chhotani *et al.* (1983), Tikader and Das (1985), Mitra and Maiti (1992), Lahiri and Mitra (1993), Mitra (1995) and Hämäläinen *et al.* (1999) contributed on various aspects of odonatology of the Nicobar islands.

**LIST OF ODONATA OF NICOBAR ISLANDS**

Order ODONATA

Suborder ZYGOPTERA

Family *Chlorocyphidae**Libellago aurantiaca* (Selys)*Libellago lineata blanda* (Selys)Family *Platycnemididae**Copera vittata serapica* HagenFamily *Coenagrionidae**Pseudagrion pruinatum pruinatum* (Burmeister)*Pseudagrion williamsoni* Fraser*Pseudagrion andamanicum* Fraser*Ceriagrion olivaceum* Laidlaw*Ceriagrion auranticum auranticum* Fraser*Ceriagrion* sp. indet.*Agriocnemis femina femina* (Brauer)*Agriocnemis pygmaea* (Rambur)*Ischnura senegalensis* (Rambur)

Suborder ANISOPTERA

Family *Aeshnidae**Anaciaeschna jaspidea* Burmeister*Gynacantha dravida* Lieftinck*Gynacantha subinterrupta* RamburFamily *Libellulidae**Agrionoptera insignis insignis* (Rambur)*Nesoxenis lineata* (Selys)*Orthetrum sabina sabina* (Drury)

*Brachydiplax chalybea chalybea* Brauer  
*Diplacodes trivialis* (Rambur)  
*Acisoma panorpoides panorpoides* (Rambur)  
*Neurothemis intermedia intermedia* (Rambur)  
*Neurothemis fluctuans* (Fabricius)  
*Brachythemis contaminata* (Fabricius)  
*Pantala flavescens* (Fabricius)  
*Tholymis tillarga* (Fabricius)  
*Tramea virginia* Rambur  
*Tramea transmariana euryale* Selys  
*Rhyothemis variegata variegata* (Linn.)  
*Rhyothemis phyllis* (Sulzer)  
*Camacinia gigantea* (Brauer)  
*Zyxomma obtusum* Albarda

## DISCUSSION

*Composition of the fauna* : The fauna of the Nicobars is composed of thirty two species and subspecies spread over twenty two genera and five families, and two suborders.

*Relationship of the fauna* : Number of species is not large and the fauna is separated from other zoo-centres. But from the data available at hand it appears that Odonata of the Nicobars bear affinities with Indian mainland fauna, Burma (Myanmar), Indonesia, Andamans, in addition to the fauna of several zoogeographical regions. Affinities are as follows (Table 1).

**Table 1.**

| Name of the country / zoogeographical regions | Number of species |
|---|-------------------|
| India (main land)                             | 23                |
| Myanmar (Burma)                               | 22                |
| Indonesia                                     | 21                |
| Cuba  | 1                 |
| Australian region                             | 9                 |
| Palearctic region                             | 16                |
| Ethiopean region                              | 3                 |
| Nearctic region                               | 2                 |

*Note on the affinities of the fauna with the fauna of the Andaman islands* : The fauna of Nicobar group of islands bears close affinities with the fauna of the Andamans. It is interesting to note that although they share eighteen species, which could cross the Andaman sea; and the only endemic form in the Nicobars, *Libellago lineata blanda* (Selys) could not cross the sea, likewise five endemics of the Andamans also could not cross 135 km. to reach the Nicobars. Kiauta (1984) opined that members of the family Chlorocyphidae (*Libellago* is a genus in the family) have originated and radiated from the Indonesian region. Hence it is conjectured that probably *Libellago lineata blanda* of the Nicobars and *Libellago lineata andamanensis* (Fraser) of the Andamans have originated independently. According to Fraser (1934) most of Indian species of *Libellago* originated from *Libellago lineata* occurring in Myanmar (Burma).

*Forms in the direct line of emigration* : Several species, viz. *Pseudagrion p. pruinatum* (Burmeister), *P. williamsoni* Fraser, *Libellago aurantiaca* (Selys), *Agrionoptera i. insignis* (Rambur) occur from Myanmar (Burma) to Malayasia which lie in the direct line of emigration to the islands.

*Subspecies and link-populations* : In addition to the common forms between the nearby lands fauna of the Nicobars has some link-populations in nearby lands. For example, *Pseudagrion pruinatum ranaunse* Schmidt, is endemic to Sumatra and it is a link-population of *Pseudagrion p. pruinatum*; *Agrionoptera insignis dorothea* Fraser occurs from North-East India to Myanmar and other subspecies of *Agrionoptera insignis* complex occur from Myanmar to Malayasia, are all link-populations of *Agrionoptera i. insignis*; similarly *Neurothemis intermedia excelsa* Lieft., a purely Javan population of *Neurothemis intermedia* complex, is a link-population of *Neurothemis i. intermedia*.

## SUMMARY

The article deals with a check-list of Odonata fauna of Nicobar islands, short history on odonatology of the Nicobars, affinities with the fauna of certain countries and zoogeographical regions, subspecies and link populations in other areas.

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