

## Natural Outbreak of *Nomuraea rileyi*, (Farlow) Samson on *Junonia orithyia* (Nymphalidae : Lepidoptera)

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The fungus *Nomuraea rileyi* (Farlow) Samson, a cosmopolitan species is known to be an important natural control agent of many lepidopterous insect pests (Fuxa, 1984). The seasonal incidence of *Spicaria* (= *Nomuraea*) *rileyi* associated with noctuid pests of soybean was reported by Ignoffo *et al.* (1975). The occurrence of *N. rileyi* in India under natural conditions has been reported from *Helicoverpa armigera* (Gopalakrishnan and Narayanan, 1988a), *Spodoptera litura* (Rao and Phadke, 1977), *Acontia graellsii* (Gopalakrishnan and Narayanan, 1988b), *Diacrisia obliqua* (Singh and Gangrade, 1975) and *Hypocala rostrata*, *Agrotis ipsilon*, *Mocis undata*, *Plusia orichalcea*, *Lamprosema indicata* and *Amsacta moorei* (Agarwal and Rajak, 1985). However, reports on the occurrence of *N. rileyi* in an epizootic form are only from *Spodoptera exigua* (Phadke *et al.*, 1978) and *H. armigera* (Gopalakrishnan and Narayanan, 1989).

During the course of survey for entomogenous fungi parasitizing insect pests of crops and forest nurseries in August 1991, the authors observed a wide spread outbreak of an entomogenous fungus in the leaf eating caterpillar, *Junonia orithyia* (Nymphalidae : Lepidoptera) infesting garden hedge plant *Justicia gendarussa* Barnif. (Acanthaceae) in Pariat forest nursery at Jabalpur (Fig. 1 a). The infected caterpillars were found fastened to the leaves on branches (Fig 1 b) with head and anterior abdominal region in a raised position. The mummified cadavers were found to be completely covered with dense, greenish white to glistening greenish fungal growth (Fig. 1 C and D). The fungus sporulated profusely on the body of the mummified cadavers in nature, leaving a heavy spore load on the leaves infested by the pest, thus

spreading the inoculum. The widespread occurrence and sporulation on mummified cadavers were favoured by the optimum temperature (25 - 30°C) and high relative humidity (90%) during the first week of August. The incidence of the disease in the field was 90 per cent and apparently healthy larvae collected from the field, later died in the laboratory due to carryover infection. Microscopic examination of the fungus revealed it to be *N. rileyi* on the basis of morphological characters (Kish *et al.*, 1974).

The fungus was isolated in pure culture on Sabouraud's maltose yeast extract agar medium. The type culture ENT No. 162 has been deposited at the department of Biological Science, R.D. University, Jabalpur. Pathogenicity tests were conducted by spraying an aqueous spore suspension of the fungus growing on cadavers and in culture, on healthy larvae reared in the laboratory on natural diet. The fungus proved to be highly virulent and caused 100% mortality after 5-7 days. The Koch's postulates were confirmed by reisolating the same fungus from artificially infected caterpillars.

The present communication is the first report of *N. rileyi* on *J. orithyia* and only third report of an epizootic of *N. rileyi* from India.

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Fig.1. a. Healthy larvae of *Junonia orithyia* infesting *Justicia gendarussa*  
 b. Infected larvae of *J. orithyia* hanging on to leaves and twigs of *J. gendarussa*  
 c. Mummified cadavers of *J. orithyia* covered with greenish fungal growth.  
 d. An Infected Cadaver of *J. orithyia* with anterior head and abdominal region raised.

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