

## SCIENTIFIC NOTE

**GYNANDROMORPHY IN *ANTHRAEA ASSAMENSIS*  
HELPER (SATURNIIDAE: LEPIDOPTERA) FROM  
LADHDOIGARH, ASSAM (INDIA)**

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The detection of a gynandromorph in nature is an extraordinarily rare event. Gynandromorphism is described as the simultaneous presence within the same organism of genotypically and phenotypically male and female tissues (Laugé 1985). "Gynandromorphs are incredibly rare," says museum moth researcher Ian Kitching (press release). "We only have 200 such specimens in our collection of some 9 million butterflies and moths ([http://blogs.nature.com/news/thegreatbey...e\\_dual\\_sex.html](http://blogs.nature.com/news/thegreatbey...e_dual_sex.html))."

Gynandromorph forms have been described in several orders of arthropods (Martini et al., 1999). In Lepidoptera, it is described in moths of the families *viz.*, Saturniidae, Noctuidae, Geometridae and in butterfly families *viz.*, Nymphalidae, Papilionidae etc. (Elis, 1993; Peigler, 1993; Friedrich, 1991; Sala & Bollino, 1991; Emmel & Boender, 1990; Bernardino et al., 2007; Urban, 1999; Gemeno et al., 1998; Chaudhuri et al., 1995). Hessel (1964) and Bridgehouse (1998) described bilateral gynandromorphism in *Automeris io* Fabricius and *Hyalophora cercopia* (Lepidoptera: Saturniidae), respectively. Earlier, the gynandromorphism in tussar silkworm, *Antheraea mylitta* Drury had been described from India by Chaudhuri et al. (1995), but in this manuscript, it has been reported a rare bilateral gynandromorph of muga silkworm, *Antheraea assamensis* Helfer from Lahdoigarh, Assam (India) for the first time.

Muga silk is produced by a Himalayan nominotypical silk moth, *A. assamensis* Helfer and is limited in its distinction to northeastern parts of India, particularly Brahmaputra basin of Assam. This silkworm is endemic in northeastern region of India, mainly Assam and Meghalaya. It is popularly known as 'Golden Silk' and the semi domesticated muga worm mainly feeds on Som (*Persea bombycina* King) and Soalu (*Litsea polyantha* Juss.).

During the seed crop season of February-March, 2010 (locally known as *Chatua* crop), 3000 seed cocoons were kept for production of eggs at Muga Silkworm Seed Technology Laboratory, Central Muga Eri Research and Training Institute, Lahdoigarh. In Assam, temperature during winter seed crops (February-March) prevailed 10-28°C and humidity ranges from 50-70%, but during February-March, 2010, in indoor conditions temperature and humidity was recorded 19-30°C and 50-80%, respectively. The moth emergence was recorded as 1530 numbers of male and 1261 numbers of female. So, among these moths only one rare specimen observed as gynandromorph. The gynandromorph's left wings look male and right wings look female. On one side of the body, the gynandromorph's wings are larger and darker than on the other side. Wing expanse of both sides measured and observed 75mm in left side (male) and 80mm in right side (female). Male antenna dark brown, with their bases reddish pink, but female antenna is paler. Abdomen is chestnut brown. Left side wings (male) line somewhat whitish, incurved and outlined by dark brown, while

on the right side wings (female) line dark brown, incurved and outlined by white. The male left side wings are dark brown and right female side wings are light pale brown. The antennae always quadripectinate in both male and female of *A. assamensis* Helfer, but the pectens size is different in both the male and female (Figs. 1, 2). Both the characters of pectens are distinctly present in gynandromorph specimen (Figs. 3, 4). So, this morphological variance shows the complete bilateral gynandromorphy. It is concluded that this bilateral gynandromorphy was become apparent for the first time in grainage of muga silkworm may be due to inbreeding of the populations or climatic factors.

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Plate I. Muga silk moth, *Antheraea assamensis* Helfer (Lepidoptera : Saturniidae) . 1. Male (Normal), 2. Female (Normal), 3. Gynandromorph dorsal view, 4. Gynandromorph fronto-dorsal view.