Zootaxa 1679: 63–68 (2008)
www.mapress.com/zootaxa/

ISSN 1175-5326 (print edition)
ZOOTAXA
ISSN 1175-5334 (online edition)

C-banding karyotypes of two species of *Primnoa* (Orthoptera: Catantopidae) from Northeast China

BING-ZHONG REN[1], NA LI, WEN-JUAN WEI & LI-MING WANG
School of Life Sciences, Northeast Normal University, Changchun, 130024, China.
[1]Correspondence author: E-mail renbz279@nenu.edu.cn or bzren@163.com

Abstract

Chromosomes and C-banding karyotypes of *Primnoa cavicerca* Zhang and *Primnoa mandshurica* (Rme.), which were collected in Songhua Lake, Jilin Province, China, were studied for the first time. In the males, the chromosome numbers of these two species were found to be 2n (♂) =23, with three pairs of large chromosomes, and X chromosomes are middle chromosomes. All chromosomes are telocentric. This genus has the basic Orthopteran sex determining mechanism XX♀/X0♂. All the chromosomes possess centromeric C-bandings. The differences of these two species are also very remarkable, such as genome formula, terminal bandings, medial bandings and content of heterochromatin.

Key words: *Primnoa,* Chromosome, karyotype, C-banding

Introduction

Cytogenetic analysis, including chromosome banding techniques, may be of great interest in classification study, especially in solving the taxonomic problems existing in sibling species and subspecies. The use of C-banding markers was successful, for example, in the characterization of relationships among the species of genus *Oxya* (Yao 2005; Fu *et al*. 2004; Ma & Guo 1994; Ma *et al*. 2002).

Primnoa is a genus of the Catantopidae belonging to the Orthoptera. It mostly distributes in Northeast Asia, Russia, Mongolia, Korea and China. In China, it only distributes in Northeast China (Li & Xia 2006). Hitherto, no karyological studies in the genus *Primnoa* have been done. In this study, we chose two species of this genus, analyzed and compared the chromosomal differentiation of these two species. The aim of this study is to offer some basal data to the cytotaxonomy of the Orthoptera.

Material and methods

The males of adult *P. cavicerca* and *P. mandshurica* were collected from Songhua Lake in Jilin China in July 2006. The total numbers of adult males of these two species are 10 and 12 respectively.

Tissues for experiment are testes. They were pre-treated with 0.05% colchicine solution 5~8 μl. After 6~8 hr, the tissues were dissected out and put in distilled water for 5~10 min, then fixed in a mixture of methanol and glacial acetic acid (3:1 v/v) for about 8~12 hr. At last, the tissues were transferred to 70% ethanol and stored in the deep-freeze for up to several months until use. Subsequently they were squashed in 60% glacial acetic acid, frozen in liquid nitrogen and removed the coverslip with a razor blade. C-banding was induced by BSG method (Webb *et al.* 1978). The preparations were examined under a light microscope with 100X magni-

Accepted by D. Rentz: 15 Nov. 2007; published: 14 Jan. 2008