

Darika Manathamkamon 2010: Song Types and Hormonal Control of Song in Red-whiskered Bulbul, *Pycnonotus jocosus* (Linnaeus, 1758). Master of Science (Zoology), Major Field: Zoology, Department of Zoology. Thesis Advisor: Associate Professor Panus Tumkiratiwong, Ph.D. 60 pages.

Song patterns and total testosterone profiles were investigated in the 12 male and 3 female Red-whiskered Bulbuls at aged of 5-10 months, of which sex types were proved by a determination of sex chromosomes. The Red-whiskered Bulbuls were introduced from breeding farm and was individually maintained in cage sized 38 x 38 x 50 centimeter and all were raised in a temperature-controlled room sized 6 x 10 x 3.5 meter. Song prototype was played via WINAMP Program every morning at 07.00-11.00 a.m. to animals with an amplifier-connected loudspeaker. The loudspeaker was located at the center and centrally surrounded by 15 cages. Each cage was spaced by 80 centimeter. Song produce from each the Red-whiskered Bulbul was recorded at 13.00-15.00 p.m. with Sony ICD-BM Model-I and its sonogram was analyzed with Avisoft SAS Lab Pro, version 4.3. The total testosterone levels were determined by a radioimmunoassay method from feces collected from individuals immediately following recoding their songs. The song frequencies that male and female produced was averaged  $4.27 \pm 0.13$  kHz, by minimal and maximal of song frequencies were 1.50 and 5.18 kHz. All twelve males aged of 10 months produced songs phase with duration of strophes 0.48 to 1.31 seconds ( $\bar{X} = 0.74 \pm 0.23$ ). It was composed of 1-6 elements/phrase, similar to song prototype provided, however, all three females produced songs phase with strophes duration of 0.16 to 0.65 seconds ( $\bar{X} = 0.33 \pm 0.11$ ). It was composed of only 1-4 elements/phrase. The male produced complicated and various song types when aged between 8 to 10 months, corresponding well with the rise level of male total testosterone secretion. The coefficient correlations between mean total testosterone levels with the syllables/10 seconds was positive correlation ( $r = 0.68, P = 0.01$ ) and intervals/ 10 seconds was negatively correlated ( $r = -0.69, P = 0.01$ ). Conclusively, the male produced songs comprising of much more syllables and less intervals was negatively correlated ( $r = -0.93, P = 0.01$ ) concomitantly with the rise of male total testosterone level.

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Student's signature

Thesis Advisor's signature