

Seasonal Reproductive Activity of Male Formosan Wood Mouse, *Apodemus semotus*: Relations to Androgen Levels

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Abstract

The annual reproductive cycle of adult male Formosan wood mice (*Apodemus semotus*) collected monthly from the Alishan area, Taiwan, was investigated. Mean monthly body mass varied between  $25.0 \text{ g} \pm 0.8 \text{ SE}$  and  $27.1 \pm 1.3 \text{ g}$  and did not show significant seasonal change. Mass of reproductive organs, spermatogenic activity, and levels of testicular and plasma androgen exhibited a distinct pattern of seasonal change. Testes, epididymides, and seminal vesicles were lightest and spermatogenesis was virtually arrested in January and December. For the remainder of year, all animals examined were spermatogenically active. However, spermatogenic activity was most intense and reproductive organs were heaviest in March–April and August–September. A decline occurred in mass of reproductive organs and diameter of seminiferous tubules in May–July, but spermatogenesis was unaffected qualitatively. Levels of testicular and plasma androgen were elevated in March–April and August–September, coinciding with periods of intense spermatogenic activity and the heaviest reproductive organs and were significantly correlated with mass of testes, epididymides, and seminal vesicles, and diameter of seminiferous tubules. Day length and temperature, but not precipitation, were correlated with mass of testes, epididymides, and seminal vesicles. This is the 1st study to investigate seasonal patterns of androgen levels in plasma and testes in the genus *Apodemus*.

Key words : Androgen; *Apodemus semotus*; Reproductive cycle; Spermatogenesis; Wood mouse