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The Life History of Some Species of Rhabdophoridae  
(Orthoptera)

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*Abstract*

THE complete life cycle of *Pachyrhamma waitomoensis* takes a little over two years: about seven months being required for the development of the egg; 15 to 16 months for the nymphal instars; and between five and ten months for the adults. Most nymphs hatch in November and December, and adults mature in January. *Pallidoplectron turneri*, unlike *P. waitomoensis*, continues to breed and mature throughout the year. About eight months are required between laying and hatching of the eggs; but the length of nymphal and adult life is very difficult to assess. Indications are that the life cycle was once clearly demarcated, but with adaptation to cave life this has gradually been lost. The adult sex ratio for both species is unequal, more females being present in the population than males. Mating may occur throughout 24 hours of the day. It has been observed throughout the year with *P. turneri*, but with *P. waitomoensis* only between January and September. After the final ecdysis of female *P. waitomoensis* in January and early February, several weeks are required for maturation of the gonads, and mating does not reach its peak until April. Throughout the whole period males and females alike mate with various members of the opposite sex, and there is no regular period between each mating. Although two insects may stay together in the preliminary mating attitude for several hours, copulation is of short duration, and only one spermatophore is produced. Females of *P. waitomoensis* and *P. turneri* oviposit in the soft mud on the walls inside the caves, but the actual process has been observed only for *P. turneri*. Palps and ovipositor are used to find a suitable spot, as the correct texture and depth of mud are a prerequisite for egg-laying, and many areas are tested before one is selected. Only one egg is deposited at each insertion, and usually only one or two eggs at the most are laid in any particular spot. All freshly made ovipositor holes are surrounded with a little ring of mud. The same area of mud is often used over and over again by different females, as examination of mud usually reveals eggs in different stages of development. In both species oviposition reaches its peak between April and June,

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