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BIONOMICS OF *EUCHEYLETIA TAURICA* VOLGIN, A SPECIES NEW TO CENTRAL EUROPE (ACARINA: CHEYLETIDAE)

by Eva ŽDÁRKOVÁ* and Pavel HORÁK*

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<td><strong>SUMMARY:</strong> A population of <em>Euchyletia taurica</em>, maintained in the laboratory at 20°C and 85% RH, has been studied for duration of life at different stages, and duration of preoviposition, oviposition and postoviposition periods. The data obtained are similar to those of <em>Cheyletus eruditus</em> (cf. BoczEK, 1959). The number of eggs laid by a female is half as much as in <em>C. eruditus</em>.</td>
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<td><strong>RÉSUMÉ:</strong> Une population d’<em>Euchyletia taurica</em>, maintenue en laboratoire à 20°C et 85% RH, a été étudiée pour définir la durée de vie des différents stades, ainsi que la durée des périodes de préoviposition, oviposition et postoviposition. Les résultats obtenus ne diffèrent pas de ceux de <em>Cheyletus eruditus</em> (cf. BoczEK, 1959). Le nombre d’œufs déposés par une femelle est moitié moins élevé que chez <em>C. eruditus</em>.</td>
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*Euchyletia taurica* Volgin, 1963 was found in an empty grain store in Březník near Třebíč, this being the first record from the Czech Republic. This species was previously recorded from England (nest of *Apodemus sylvaticus*) and from a wildlife preserve in Crimea, Ukraine (nest of *Microtus arvalis*) (VolGIN, 1987). The genus *Euchyletia* Baker is said to have 14 (SUMMERS & PRICE, 1970) or 12 (VolGIN, 1987) nominal species. Most of them have been found only once and, in our opinion, the whole genus badly needs revising, as some species might be synonomous. For example, *E. taurica* is very similar to *E. sinensis* Volgin: these two species only differ in size and in the ornamentation of the dorsal surface of the rostrum. Unfortunately, the holotypes, which are presently kept at the Zoological Institute of the Academy of Sciences, St. Petersburg, are not easily accessible.

**MATERIAL AND METHODS**

The population of *E. taurica* was collected with a sample of damp floor dust. The sample also contained another mite species, *ChortoglYPhus arcuatus* Troupeau, on which the predatory mites most probably fed. The population had been found on the same place for a few years, until the grain store was changed into a store of agricultural machinery. The mites were sieved out of the dust and maintained in a paper bag on 100 g of lettuce seed at 85% RH and 20°C. After three months, when the mites reproduced, 10 tritonymphs were transferred individually into small cone-shaped chambers (5 mm deep, 10 mm in diam.) drilled in plexiglass blocks (5 mm × 20 mm × 50 mm). The bottom of each chamber was made from filter paper sealed with paraffin. Ten to twenty individuals of all stages of an acaroid mite, *Acarus*

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Fig. 1: Developmental stages of *Eucheyletia taurica*, dorsal views.
suro, were added to each culture cell so that the predators could feed on them ad libitum. *A. suro* originated from laboratory culture, maintained on wheat germ at 20°C and 85% RH for more than 10 years. Glass covers were clamped onto the chambers with clips. The chambers were placed in desiccators which contained a saturated kalium chloride solution to maintain 85% RH and kept at 20°C. The chambers were observed daily and the number of eggs laid by each female (after tritonymphs moulted to females), as well as female behaviour, were recorded. Each newly-hatched larva was individually transferred into a new chamber with *A. suro* as food and its development was observed. The mortality of adult females and larvae was high, 30–40%, therefore the experiment was repeated at least 5 times. For the data obtained, the mean and the standard deviation were calculated.

**RESULTS AND DISCUSSION**

The female laid eggs in clusters consisting of 2 to 13 eggs. The eggs were tied up with a silk webbing, which covers them on top, so that they looked like being enclosed by a cocoon. Each female produced several such clusters, five at most within one week, but she did not guard the eggs, unlike, for example, the female of *Cheyletus eruditus* (Schrank), another predatory mite occurring in grain. The data concerning the rate of development of this species are summarized in Table 1. On average, the whole development lasted 30.6 days. The male is unknown; females reproduce parthenogenetically. They are not cannibalistic, and the population density can be as high as 1000 individuals per cm². As no good drawings of the individual stages exist, they are illustrated here in Fig.1. The duration of development does not differ from that of *C. eruditus*, under the given conditions as observed by Boczek (1959). A female laid 47.6 ± 27.3 eggs in 8.6 ± 4.6 clusters. This is half as much as in the female of *C. eruditus* with the same lifespan.

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**REFERENCES**

