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THE BEHAVIOUR OF QUEENS INSEMINATED ARTIFICIALLY IN DIFFERENT MANNER

Two experiments were carried out. In the first, the behaviour of 145 *Apis mellifica* queens mated naturally, treated only with CO₂ and inseminated artificially once with 1, 2, 4, 8, 12 and 16 cu. mm. of semen were observed.

The loss of queens inseminated with up to 8 cu. mm. was not higher than 21 %, while 60 or 67 % for queens inseminated with 12 or 16 cu. mm. The increase of doses leads to the decrease of the percentage of queens flying out and mating naturally again. No queen inseminated with 8 cu. mm. or more mated again. Queens treated only with CO₂ -or inseminated artificially started with the next flight in average 5 to 8 days later and with the egg laying 6 days later, than did queens mated only naturally.

Hence small doses lead to further flights of queens, or natural matings. Too big doses result in high mortality.

In the next experiment the behaviour of 87 Caucasian queens mated naturally and inseminated twice with 4 cu. mm. or once with 8 cu. mm of semen was compared. More of the Caucasians fled out after being artificially inseminated than did this the *Apis mellifica*.

The second insemination or treatment with CO₂ decreased the number of queens flying out and mating naturally again. The percentage of queens producing normal brood was identical after two or one insemination.

When the queens mated naturally again were excluded, then two inseminations gave similar results as one insemination with subsequent treatment with CO₂.

Queens inseminated twice started egg lying earlier, than those inseminated once with the same total amount of semen. Subsequent treatment with CO₂ did not stimulate the egg lying so fast as second insemination.

All the presented data showed, that the best results were obtained after insemination the queens with 8 cu. mm. of semen. In some cases two inseminations may give better results than one insemination with the same total amount of semen.

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Tom II