

TRANSOVARIAL TRANSMISSION OF ĽAHYŇA VIRUS
BY *Aedes aegypti* MOSQUITOES (STRAIN BANGKOK)

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When *Aedes aegypti* mosquitoes from the London School of Hygiene and Tropical Medicine were used for transmission experiments (these mosquitoes had been kept for many years under laboratory conditions; they shall be further referred to as strain London) they showed a high affinity to Ľahyňa virus (infection rate 62%) a good transovarial transmission rate, namely out of 31 infected females virus was found in the progeny of 7 females in the F₁ generation (1). When another three *Aedes aegypti* strains were tested we found a considerably lower susceptibility to Ľahyňa virus (mosquitoes from the breed of Institute of Tropical Medicine in Basel, Switzerland and from Bangkok, Thailand) or complete resistance (Ifakara strain from Tanzania (2)).

The Bangkok strain was selected for further experiments aimed at obtaining a transovarially infected F₁ generation progeny. The Materials and Methods were described previously (1, 2). Already the first experiment showed that in the generation F₁ 30 mosquitoes from one infected female are needed to transfer the virus into white mice (3 out of 5 animals became infected). From 16 surviving females none transmitted the virus in a next trial. All the 16 surviving females were negative when tested for the virus.

We decided to check the ability of Bangkok strain mosquitoes to transmit the Ľahyňa virus in larger trial. Altogether 64 females were fed on viraemic mice (titre of Ľahyňa virus in the blood was 10^{2.5} LD₅₀/0.01 ml) as detected by i.c. inoculation of suckling mice. The transmission rate was 12.5% (previously 10%) and the infection rate 17.8% (previously 17.6%) (2). The 10 infectious mosquitoes laid a total of 1109 eggs from the second up to fourth gonotrophic cycles (progeny from the 1st cycle was not tested based on previous negative results). The transfer of the virus by females of F₁ generation onto white newborn mice was followed individually in 145 females coming from 8 infectious females of maternal generation in 300 transmission trials, always about 10–14 days or 17–21 days after hatching. All attempts to transfer the Ľahyňa virus were negative, so was the further detection in the mosquitoes tested.

The presented results point at the limited ability of mosquitoes *Aedes aegypti* Bangkok strain to transmit the Ľahyňa virus by transovarial route (a single transfer in the first preliminary trial), but simultaneously the possibility of such transfer including transmission by feeding on mice which had been unsuccessful with the London strain (1). The F₂ generation failed to become infected by transovarial route.

References

1. Labuda, M., Ľiampor, F., and Kořuch, O., *Acta virol.* **27** : 245–250, 1983.
2. Labuda, M., and Kořuch, O., *Acta virol.* **29** : 416, 1985.