FOLIA PARASITOLOGICA (PRAHA) 25: 255–256, 1978.

EXPERIMENTAL INFECTION OF CHICKENS WITH LEDNICE (YABA 1) VIRUS

The Lednice (Yaba 1) virus — now M'Poko (see the 1976 Annual Report on the Catalogue of Arthropod-borne and Selected Vertebrate Viruses of the World) has a significant relation to birds (Kolman J. et al., Folia parasit. (Praha) 23: 251–255, 1976, Danielová V., Málková D., Folia parasit. (Praha) 23: 367 to 372, 1976, Málková D., Danielová V., Folia parasit. (Praha) 24: 382–384, 1977). In previous reports it was already ascertained that chickens do not perish either after scut or ic infection with virus (Málková D. et al., Folia parasit. (Praha) 21: 363–373, 1974), but the death of the chicken embryos was observed both after inoculation into the yolk sac and the chorionallantois (Málková D., Kolman J., Čs. epidemiol. mikrobiol. imunol. 24: 225–230, 1975). The present paper completes the findings about capability of viremia and antibody formation in chickens and elucidates thus their role in the circulation of virus in nature.

One-day-old chickens were inoculated scut into the occipital part of the head with virus strain 6118, which underwent two mouse passages. The first group obtained a dose of virus 3.83 log mouse ic LD_{50} and the second one 1.83 log mouse ic LD_{50} per one chicken. There were 5 chickens in each group. Viremia was investigated at 24 hour's intervals since the last till the 5th day, then the 7th and 10th day p.i. Blood was collected from the tibial vein into heparin. Pools of blood from 5 birds of the respective group were immediately inoculated ic to litters of 1–2 day-old suckling mice in the amount of 0.01 ml. Inoculated mice were observed in experiment for 14 days. — Neutralizing antibody production was ascertained 3 and 6 weeks p.i., individually in each bird. Antigen in 10-fold dilutions was added to the plasm diluted by phosphate buffered saline in ratio 1 : 2. After incubation of the mixture "plasm + antigen" for 60 minutes at 37 °C, each dilution was inoculated to 1 litter of 1–2-day-old suckling mice ic per ,0.01 ml. Observation time of mice in experiments was 14 days. Virus titres were calculated according to Reed and Muench.

As may be seen from Table 1, viremia occurred in chickens after both doses of virus. In case of animals inoculated by a larger dose of virus (3.83 log LD_{50}), the first detection of viremia was 48 hours p.i., in case of inoculation by a smaller dose of virus (1.83 log LD_{50}) not until 72 hours p.i. The peak of viremia in both cases was the 5th day p.i. Virus titres were relatively low and did not exceed 1.5 log LD_{50}/0.01 ml.

As for neutralizing antibody production, it was ascertained that a significant antibody formation occurred after both doses of virus as early as the 3rd week p.i.

From development of virus titres in blood it may be concluded that the virus replicates in the organism, though to low titres only. With regard to the fact that it is not yet clear, whether the virus titres in the blood of the host amount-

ing to 1.5 log LD_{50}/0.01 ml are capable to infect the vector, the question of chickens as a possible link in the circulation of virus remains still open: in anticipation, they can be considered as potential host of virus. Effective and significant antibody production even after a small dose of virus provides that chickens can serve as good indicators of virus occurrence in the locality.

Acknowledgement. The competent technical assistance of L. Bičíková and A. Šindlerová is gratefully acknowledged.

D. MÁLKOVÁ and V. DANIELOVÁ,
Institute of Parasitology,
Czechoslovak Academy of Sciences, Prague

Table 1. Viremia and neutralizing antibody production in experimentally infected chickens

Inoculum log LD_{50}/animal	Viremia (in days p. i.)							Antibodies	
	1	2	3	4	5	7	10	3rd week	6th week
3.83	neg	+	+	0.36	1.38	neg	neg	> 2.8 > 2.8 > 2.8 > 2.8 > 2.8	> 3.8 > 3.8 > 3.8 > 3.8 > 3.8
1.83	neg	neg	+	0.81	1.19	neg	neg	> 2.8 > 2.8 > 2.8 > 2.8 > 2.8	> 2.8 > 2.8 > 2.8 > 2.8 > 2.8