ECOLOGY OF THE MOSQUITOES IN ARTIFICIALLY IRRIGATED MEADOWS OF SOUTHERN MORAVA *

by

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North-east of Hodonin at the river Morava there are 2,500 hectares of artificially irrigated meadows. The water for irrigating these meadows is taken from the river Morava from where it flows to the principal race canal, and then to the ditches. Since surface of the meadows is uneven, the ground depressions become the breeding places for the mosquito larvae. The irrigation of the meadows lasts usually from 7 to 14 days, but some water remains in the principal race- and drainage canal for whole year. On the mud layer carried in by the water a vegetation starts to grow in these canals. When the water in the principal drainage canal is running, the mosquito larvae are found only between the vegetation at the edge at 20-25 cm from the bank; in standing water, however, the mosquito larvae are found everywhere in the water of the drainage canal. The speed of the stream is 10-20 cm/sec., in the drainage ditches 1 m/sec.

Mosquito larvae were collected in a shallow dish/1/60 m2/ always in places with a vegetation in the principal race and drainage canal and the number of collected mosquitoes larvae were counted on 1 m2. Mosquito larvae were collected after the water had been started to be drained from the meadows. At this time a maximum number of larvae were found. The adults of mosquito were collected on the surface of 1 m2 of the walls of the stable.

In the spring the artificial irrigation was realized in March or April. Only in the year 1958 the artificial irrigation was realized in May filling only the canals and ditches with water. The summer irrigation was realized at the end of June or the beginning of July. Only in the year 1962 the irrigation was carried out in August and the water remained on the meadows for a month. In the year 1964 no summer irrigation was realized. The autumn irrigation was realized only in October 1956.

At the end of April 1961 the principal drainage canal was sprayed with aerosol DDT/10% at the rate of 11 kg aerosol per hectare. In the spring of the following year no mosquito larvae were found in this principal drainage canal. The spraying was repeated in August 1962 and again in spring 1963 and also in the spring 1964 only solitary larvae of *Aedes vexans* could be found.

On the table N° 1 the relation between the artificial irrigation of meadows and percentage of development of species of mosquito larvae in South Morava is given. In table N° 2 the percentage of species of adult mosquitoes on the ceiling of a stable close to the artificially irrigated meadows is given.

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Table n° 1 -

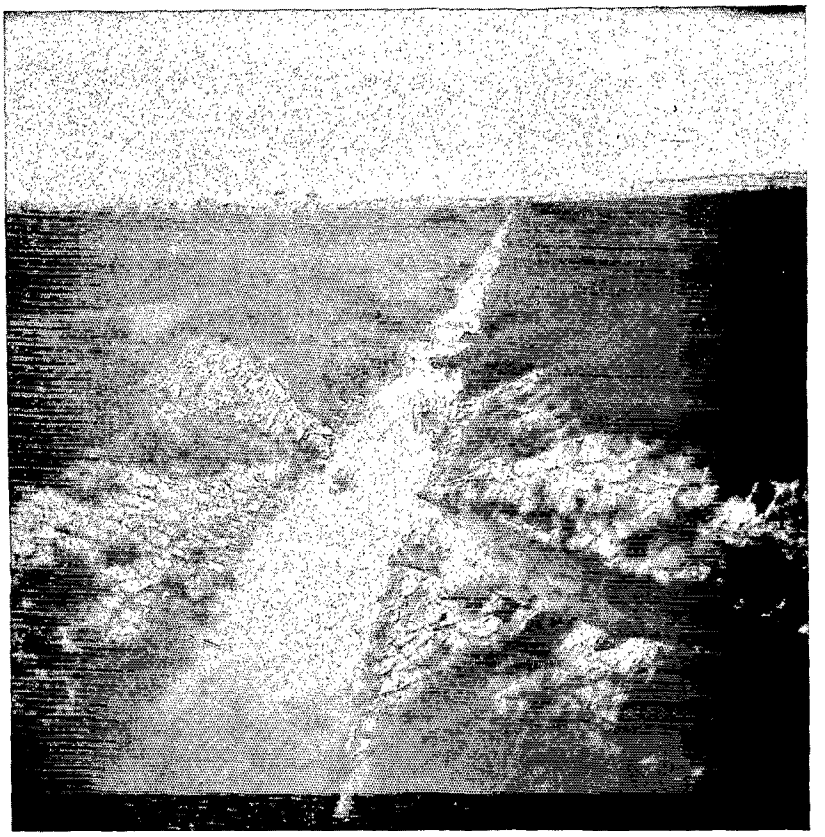
Species of mosquitoes larvae in the canal on artificial irrigated meadows of Southern Morava in percentage.

Canal	Month, year	Number of larvae on m2	Water		Species of mosquito larvae in percentage								
			Temperature°C	pH	Aedes vexans	Aedes cinereus	Aedes annulipes	Aedes leucomelas	Aedes excrucians	Aedes flavescens	Anopheles maculipennis	Culex pipiens	Culex modestus
Race	IV.59	132	4-14	5-6	100	0	0	0	0	0	0	0	0
drain	IV.59	6 072	4-14	5-6	76,1	7,6	3,2	3,2	1,1	8,7	0	0	0
race	V.58	330	19-20	6-6,5	100	0	0	0	0	0	0	0	0
drain	V.58	8 580	19-20	6-6,5	100	0	0	0	0	0	0	0	0
drain	VII.58	396	26-32	6-7	100	0	0	0	0	0	0	0	0
race	VII.57	231	25-32	6-7	85,5	0	0	0	0	0	14,5	0	0
drain	VII.57	10 824	26-32	6-7	97,6	0	0	0	0	0	0,6	1,2	0,6
drain	VIII.62	10 880	23-25	7,5	27,2	0	0	0	0	0	0	72,8	0
drain	X.56	0	5-7	5-5,5	0	0	0	0	0	0	0	0	0

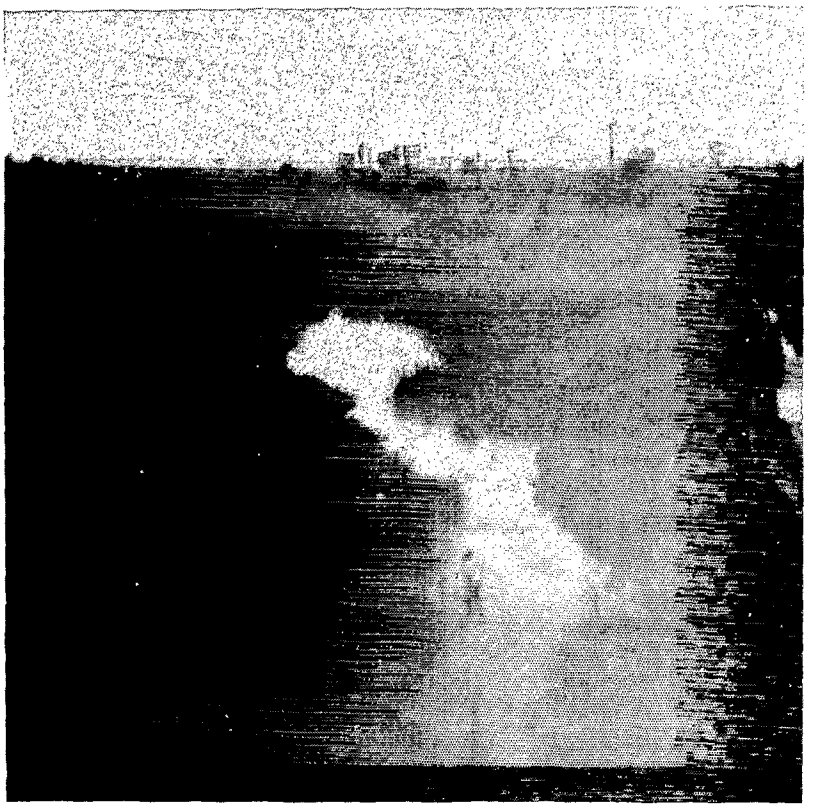
Table n° 2 -

Species of mosquitoes on the ceiling of the stable in percentage

The stable in community	Month, year	Before irrigation	After irrigation	Species of mosquitoes in percentage									
				Anopheles maculipennis	Anopheles claviger	Aedes vexans	Aedes sticticus	Aedes cinereus	Aedes flavescens	Aedes cantans	Aedes caspius	Aedes dorsalis	Culex pipiens	Theobaldia annulata
Rohatec	VII.1956		/	2,2	0,3	97,5	0	0	0	0	0	0	0	0
Petrov	VII.1962	/		80,7	0	16,3	1,2	0,6	0,6	0	0	0	0	0,6
Petrov	IX.1962		/	44,0	34,0	22,0	0	0	0	0	0	0	0	0
Petrov	II.1963		/	0,5	0,5	54,7	2,8	0	0	2,8	37,1	1,1	0,5	0
Petrov	VII.1964	/		98,0	0	2,0	0	0	0	0	0	0	0	0



Principal
Drainage canal
After cleaning



Principal
Race canal

In the table N° 1 it is shown, that mosquito larvae of species *Aedes cinereus, Aedes annulipes, Aedes leucomelas, Aedes excrucians* and *Aedes flavescens* were found only in the spring in the principal drainage canal. Mosquito *Aedes vexans* were found in the spring and in the summer in the principal race and drainage canal. Larvae of *Anopheles maculipennis* were found only in the summer in the principal race and drainage canal. Larvae *Culex pipiens* and *Culex modestus* were found in the summer in the principal drainage canal. In the spring in the principal drainage canals less mosquito larvae were found than in summer. In the race canal there were less mosquito larvae than in the drainage canal. In the canals in the late spring and in the summer there were mostly mosquito larvae of species of *Aedes vexans* and in August 1962 the larvae of *Culex pipiens* were found in abundance as the water was standing for one month on the meadows and the water was soiled with organic mud. When in May the canals were filled with water, the mosquito larvae were found in the great number and then in summer when the irrigation was realized, the mosquito larvae were found only rarely. During the autumn irrigation in October 1956, mosquito larvae were not found in the canals.

In the table N° 2 it is shown, that adults of species of *Anopheles maculipennis* and *Aedes vexans* were found on the walls of the control stable in the summer and in the autumn before and after the artificially irrigation. Adults of species of *Anopheles claviger* were found, at the most in autumn. Adults of species *Aedes sticticus* were found in the summer before and after the irrigation. Adults of species of *Aedes cinereus, Aedes flavescens* and *Theobaldia annulata* were found only before the irrigation. Adults of species *Aedes cantans, Aedes caspius, Aedes dorsalis* and *Culex pipiens* were found only in the summer after the irrigation on the walls of control stable where were mostly adults of species of *Anopheles maculipennis.* But after the artificial irrigation were mostly species of *Aedes vexans* found on the walls.

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