The result secured in these 2 serological tests is given in Table I. As it is seen from the table positive precipitin and complement fixation reactions occurred regularly when specific antibody and antigen were brought into contact. In our case the possibility of non-specific reactions is excluded by various controls which were always negative. It was found that somewhat higher specific titre was recorded both in precipitin and complement fixation reactions when the antigen used in the tests was derived from a homologous material. It is only natural that higher titres for both reactions were observed when hyperimmune sera were used. It is to be noted that the reactions occurring in case of the antigen prepared from vaccinia virus culture and homologous anti-serum exhibited considerably higher titre than the same reactions developing in case of the substance derived from chick embryo tissue culture and the same serum. In this particular case one would expect to obtain non-specific result. This fact indicates that the precipitin and complement fixation reactions as reported in this work were mainly due to the activity of the specific substance derived from virus bodies. The specificity of the reaction is furthermore indicated by positive results obtained in case of substances prepared both from vaccinia virus culture and testicular vaccinia virus and anti-serum prepared through vaccination of a rabbit with calf lymph.

In the present work evidence was produced supporting the view that the precipitin reaction observed by several workers with extracts from the tissue infected with vaccinia virus and homologous anti-serum is caused by the presence in such extracts of a specific product of the vaccinia virus which can be isolated in the form of a polysaccharide similar in its behavior to the bacterial carbohydrate haptenes.

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Intermediate Hosts of Microfilaria Malayi in Chekiang, China.

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Of the 2 species of human filaria found in China *Filaria bancrofti* is transmitted by *Anopheles hyrcanus* var. *sinensis, Culex pipiens* and *Culex fatigans* according to the researches of Feng,[1] Hu[2] and

[1] Feng, L. C., *Am. J. Hyg.*, 1931, **14**, 502.

[2] Hu, S. M. K., *Chinese Med. J.*, 1933, **47**, 1359, 1367.

Manson.[3] *Microfilaria malayi* has only recently been found in China (Feng[4]). It is therefore interesting to find out which species of mosquito is the intermediate host of this parasite. In the summer of 1933 (July to August), experiments have been carried out in Huchow, Chekiang Province, with the local species of mosquitoes and *Microfilaria malayi*.

TABLE I.

Species of mosquitoes	No. mosquitoes fed	No. mosquitoes dissected 1st to 4th day		No. mosquitoes dissected 5th to 8th day			Remarks
		No. +	No. —	No. +	No. —	No. with mature microfilariae	
A. hyrcanus var. *sinensis*	88	44	0	44	0	30	Larvae developed well, large numbers in each mosquito. Mature larvae were found beginning 6th day. Of 30 mosquitoes with mature larvae, 14 in labium.
M. (Manson-ioides) uniformis	14	2	0	12	0	2	Larvae developed normally till 4th day, afterwards some remained small, became granular and degenerated. Small numbers reached maturity on 8th day. In one mosquito mature larvae in labium.
Armigeres obturbans	27	9	0	3	15	0	2 of the 3 positive mosquitoes dissected on 6th day. 1 and 2 nearly mature larvae found in thorax. In one mosquito larvae were enclosed in chitinous capsules.
Stegomyia albopictus	28	3	11	0	14	0	In the positive mosquitoes, filarial larvae were found both in stomach and thorax, they appeared healthy.
Culex pipiens	74	8	23	0	43	0	Larvae dead, not yet exsheathed, in stomach of 6 mosquitoes. One small sausage-shaped larva in thorax of each of other 2 mosquitoes.

NOTE: All the mosquitoes were kept at room temperature of from 29° to 32°C.

[3] Manson, P., *China Customs Med. Rep.*, 1878, **2**, 1.

[4] Feng, L. C., *Chinese Med. J.*, 1933, **47**, 168.

Ten species of mosquitoes were found in Huchow, but only 5 species have been used for the experimental purposes because the remaining, namely, *Culex pallidothorax, C. vichnui, C. mimeticus, C. (Lutzia) vorax,* and *C. (Lutzia) fuscana* were either uncommon or did not suck human blood. All mosquitoes, except *M. (Mansonioides) uniformis,* were bred from larvae or pupae in the laboratory. The results of these experiments are given in Table I.

From the table it will be seen that *Anopheles hyrcanus* var. *sinensis* is an excellent intermediate host for *Microfilaria malayi.* Under the room temperature of 29-32°C. (July to August) the microfilariae developed in this species of mosquito quite normally and they reached maturity from the 6th day after the infective meal. Labial infection has been found very frequently beginning from the 6th day. Out of 30 mosquitoes in which mature microfilariae were found, 14 harbored microfilariae in the labium.

Microfilariae reached maturity also in *M. (Mansonioides) uniformis.* But this species of mosquito is probably not as good an intermediate host as *A. hyrcanus* var. *sinensis* since only a small number of the ingested microfilariae completed development. Majority of the microfilariae stopped development from the 5th day and became granular and degenerated.

The other 3 species of mosquitoes, namely, *Culex pipiens, Aedes (Stegomyia) albopictus* and *Armigeres obturbans* are not intermediate hosts of *Microfilaria malayi* since the microfilaria died and disappeared either in the stomach or after they reached the thorax of the mosquito.

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On the Nature of the Specific Reacting Substance of B. proteus X19 in the Weil-Felix Reaction.

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Through methods commonly employed for the recovery of specific soluble substances (polysaccharides) it is possible to obtain from the X 19 strains of the proteus bacillus specific reactive substances which flocculate with antiproteus and typhus serum, (Lim and Kurotchkin,[1] White,[2] and Castaneda[3]). Castaneda[3] has also shown

[1] Lim, C. E., and Kurotchkin, T. J., *Nat. Med. J. China,* 1929, **15**, 6.

[2] White, P. B., *Brit. J. Exp. Path.,* 1933, **14**, 145.

[3] Castaneda, M. Ruiz, *J. Exp. Med.,* 1934, **60**, 119.