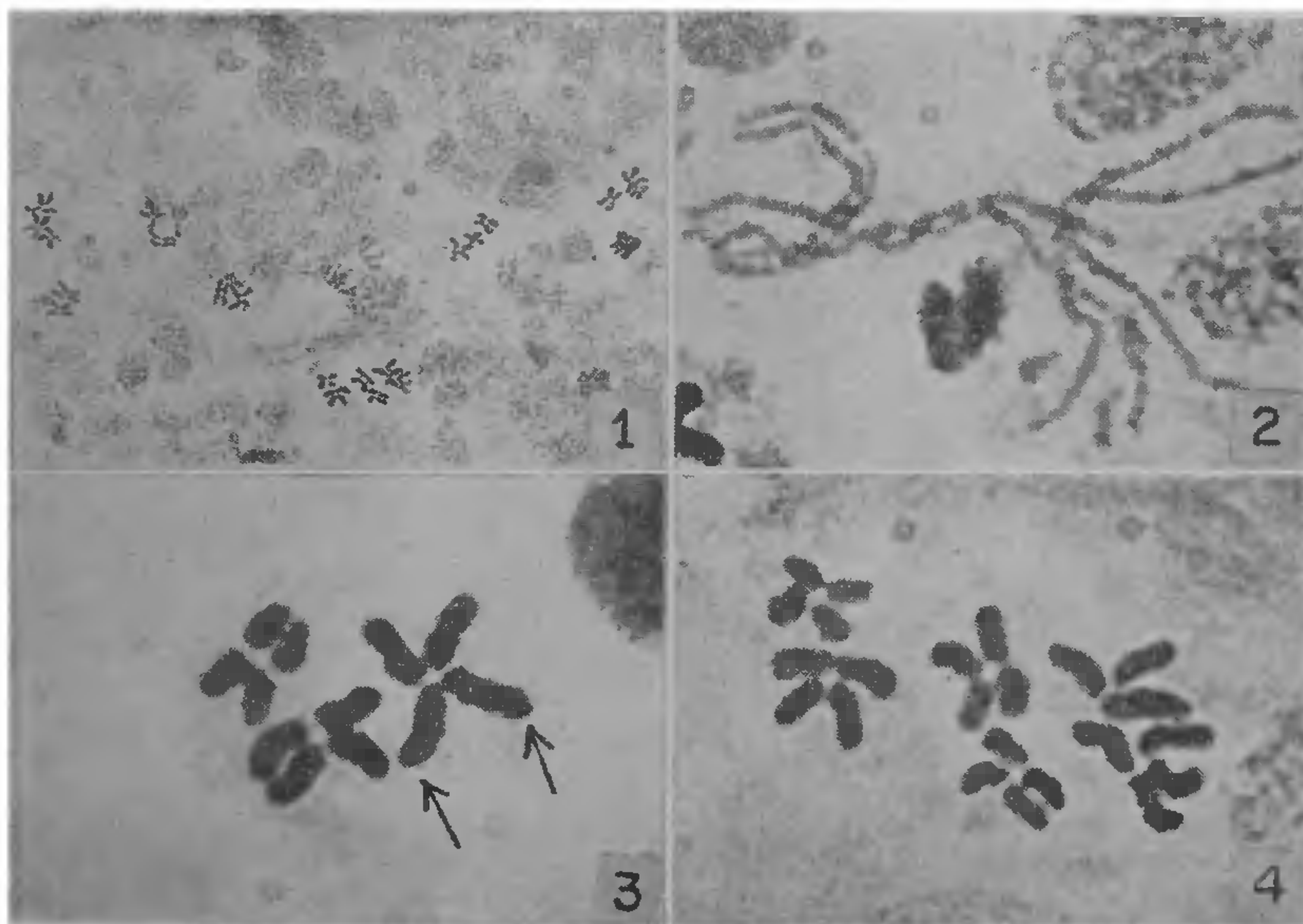


KARYOTYPE OF *Aedes w-albus*

STUDIES on the mitotic chromosome complements of various mosquito species have been reported by several workers.¹⁻¹⁰ The diploid chromosome number of all the mosquito species studied so far is six ($2n=6$), except *Gorethra* sp. where the diploid chromosome number is 8 ($2n=8$).⁵ The purpose of the present communication is to record the mitotic chromosome complement of another mosquito *Aedes w-albus*.

chromosome III is submetacentric. The length of the two arms of the submetacentric chromosome III is 4.0 and 4.2 microns. The submetacentric character of chromosome III alone seems to be distinctive feature of this species. This character has not been observed in any other *Aedes* species studied so far. The somatic pairing in all the three pairs of chromosomes during prophase was intimate. Occasionally cells with polyploid chromosomes were also observed (Fig. 4).



FIGS. 1-4. Mitotic chromosomes from fourth-instar larval brain cells of *A. w-albus*. Fig. 1. Prophase and Metaphase chromosomes of diploid and polyploid cells, $\times 350$. Fig. 2. Prophase chromosomes of a diploid cell, $\times 1,300$. Fig. 3. Metaphase chromosomes of a diploid cell. The arrows show the longer arms of chromosome III, $\times 1,700$. Fig. 4. Metaphase chromosomes of a polyploid cell, $\times 1,700$.

To study the somatic chromosomes of this mosquito, the brain tissues from fourth-instar larvæ were used. The larvæ were from the laboratory colony of *A. w-albus*. The techniques employed for chromosome preparations were essentially the same as described by French *et al.*¹¹

The karyotype of this species consists of three pairs of chromosomes (Figs. 1, 2, 3). The smallest pair (chromosome I), the intermediate pair (chromosome II), and the largest pair (chromosome III), measures 5.2, 6.5 and 8.2 microns respectively in late metaphase. Chromosomes I and II are metacentric, whereas

The ratio of length between chromosome I, and chromosome II plus III in this species was found to be 0.353 which compared favourably with the ratio found in other members of the genus *Aedes*.^{5,9}

Virus Research Centre, K. R. P. SINGH,
Poona, India, June 24, 1970. U. K. M. BHAT.

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OBSERVATIONS ON THE HATCHING OF FERTILIZED EGGS OF *HILSA ILISHA* (HAMILTON) IN CONFINED FRESHWATERS

EARLIER workers, who attempted artificial fecundation of *Hilsa ilisha* (Hamilton), carried out the hatching of fertilized eggs in McDonald jars,²⁻⁶ wherein a continuous flow of water was maintained, on the presumption that flowing water was an absolute necessity. Recent work at this research centre¹ showed that muslin and markin cloth *hapas*, fixed in the river-bed close to the banks, were effective substitutes for McDonald jars. In the investigations carried out by us in 1969 at Sirsa near Allahabad on river Ganga, it was found that the riverine environment was not conducive for hatching as long as the index of visibility of the river-water, as determined by the Secchi's Disc, was 20 cm. or below. To circumvent such situations, attempts were made to ascertain the possibilities of hatching these eggs in *hapas*

fixed in confined freshwaters, viz., river pools and nursery ponds. The index of visibility during the investigation varied between 44 and 67 cm. in the pool and was 27 cm. in the nursery ponds (Table I).

Out of a total of 28 experiments, 17 were carried out in confined freshwaters and the rest in fluvial environments. In the lentic environments, 14 experiments were carried out in a pool left behind in the sandy bed of the river Ganga by the receding monsoon floods and three in freshwater nursery ponds at Taraon Fish Farm. In all these experiments, markin and muslin cloth *hapas*, measuring 175 cm. in length, 80 cm. in breadth and 90 cm. in height and fixed in the bed of the pool at a place where the depth of the water was about 100 cm., were employed as containers for the fertilized eggs. The quantity of eggs released per *hapa* varied between 600 ml. (c. 1,80,000) and 800 ml. (c. 2,40,000).

The percentage of hatching varied between 5 and 80 in the river pool, being higher (25-80%) in experiments 1 to 6 (Table I). The temperature of the surface-water during the experiments ranged from 26.5-30.4° C., while the antagonistic ions of Ca fluctuated between 180 and 195 ppm. The pH ranged from 8.2-8.3, while the values of NO₃, PO₄, Fe and Cl fluctuated from 0.10-0.16, 0.07-0.08, 0.10-0.12 and 10-11 ppm respectively. Free CO₂ was absent throughout. During the latter experi-

TABLE I
Details of hatching the hilsa eggs in confined freshwaters

Sl. No.	Number of eggs in lakhs/% of fertilization	Hatching			Details			
		Duration in hrs / percentage	Temperature (°C.)*	Secchi's Disc reading (cm.)*	CO ₃ (ppm)*	HCO ₃ (ppm)*	Ca (ppm)*	DO (ppm)*
(a) In river pool								
1	3.6/80	13.35/65.0	..	67	10	96	186	6.8
2	22.2/80	15.15/63.33	30.4/26.5	67/64	12/12	96/96	184/180	7.2/6.4
3	10.8/0	..	"	"	"	"	"	"
4	10.2/80	16.3/25.0	..	"	"	"	"	"
5	6.6/24	15.05/80.0	30.4/27.1	60/51	20/16	96/88	190/192	6.8/6.4
6	8.6/85	15.3/65.0	29.3/26.8	48/54	12/12	92/96	195/195	6.8/6.4
7	1.2/35	18.00/20.0	..	..	..	..	..	..
8	9.6/35	18.00/10.0	27.1/24.8	46/44	20/16	80/88	97/162	8.0/6.8
9	7.2/90	18.00/ 5.0	"	"	"	"	"	"
10	3.6/80	18.15/ 6.0	"	"	"	"	"	"
11	2.4/90	18.00/ 5.0	"	"	"	"	"	"
12	2.4/90	18.30/ 6.0	"	"	"	"	"	"
13	3.6/80	18.15/ 8.0	"	"	"	"	"	"
14	4.4/20	18.00/70.0	"	"	"	"	"	"
(b) In nursery ponds								
1	18.0/—	20.00/20.0	26.8	27	8	100	125	6.4
2	9.6/—	20.15/15.0	..	..	..	..	..	..
3	8.4/—	17.00/30.0	28.4	27	12	104	162	8.0

* The numerator and denominator represent the values recorded at 18.00 hrs. and 6.00 hrs. respectively.