

TABLE 2.

Parents	F <sub>1</sub>			eye color	P
	♂ ♂	♀ ♀	tot.		
♂ wild (♀ wild x ♂ "or")	302	296	598	wild	<0.4
x ♀ "or"	290	260	550	red	
♀ wild (♀ wild x ♂ "or")	370	336	706	wild	<0.2
x ♂ "or"	332	371	703	red	

random was constituted of 338 ♂♂ and 400 ♀♀ of the wild type (tot.=738) and correspondingly 137 males and 138 females of the "or" type (tot.=275). This segregation follows the 3:1 ratio ( $P < 0.4$ ). Since reciprocal crosses gave identical results, it would seem to us, therefore, correct to sum the number of individuals with normal eyes and "or" for the calculation of the value of P (Table 1 and Table 2).

Twelve individuals obtained from the crossing of ♀♀ wild x ♂♂ "or" were back-crossed with the same number of "or" strain, as shown in Table 2. The ratios between mutant and normal individuals showed, as was expected, a distribution of the type 1:1.

From the evidence obtained, it is concluded, therefore, that the "or" phenotype is determined by a recessive autosomal mutation. The crossing of single pairs (♀ +/"or" x ♂ "or"/"or" and ♀ "or"/"or" x ♂ +/"or") furnished few ovi-positions and adult individuals (Table 3). A notable difference from the expected results was obtained. The sex ratio also was different from that expected. However, adding up the F<sub>1</sub> of each single pair, we obtain in both of the reciprocal crossings the expected ratio 1:1 ( $P < 1.0$ ).

References

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red eyed *Anopheles atroparvus*. Riv. Biol. 62:403.

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A DISTRIBUTIONAL NOTE FOR *Aedes punctator* (KIRBY)<sup>1</sup>

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A female mosquito collected in a New Jersey light trap located near Frederika, Bremer County, Iowa, on July 27, 1969, has been subsequently identified as *Aedes punctator* (Kirby), by Dr. Alan Stone of the Systematic Entomology Laboratory, U. S. Department of Agriculture. This represents a new state record for Iowa and a southern extension of the distribution of *Aedes*

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TABLE 3.

Parents	No.	♂ ♂	♀ ♀	tot.	♂ ♂	♀ ♀	tot.	P
		wild	wild		"or"	"or"		
♀ +/"or" x ♂ "or"/"or"	1	51	45	96	39	45	84	
	2	33	24	57	18	21	39	
	3	24	39	63	30	21	51	
	4	3	25	28	30	44	74	
	tot.	111	133	244	117	131	248	
♀ "or"/"or" x ♂ +/"or"	1	45	78	123	60	60	120	<1
	2	33	12	45	15	9	24	
	3	48	57	105	78	63	141	
	4	18	20	38	12	11	23	
	tot.	144	167	311	165	143	308	

*punctor*. No male or larval records exist for this species in Iowa at this time.

Frederika is located in northeastern Iowa, approximately 26 miles north of Waterloo. The trap was set up on a farm ½ mile southeast of the town. The Wapsipinicon River flows approximately ½ mile from the light trap and occasionally floods distal portions of the pasture bordering it.

*Aedes punctor* is a holarctic species occurring in northern Asia, northern Europe, and throughout Canada (Carpenter and LaCasse, 1955; Carpenter, 1968). In the United States, the species has a northern distribution, having been recorded from Alaska, Colorado, Illinois, Maine, Maryland, Massachusetts, Michigan, Minnesota, Montana, New Hampshire, New Jersey, New York, North Dakota, Vermont, Wisconsin, and Wyoming (Carpenter and LaCasse, 1955; Carpenter, 1968). Carpenter and LaCasse (1955) reported that *Aedes punctor* has been recorded in Colorado only from higher elevations. Of the states that border Iowa, it has been recorded from Minnesota and Wisconsin and also from Illinois where the species is quite rare.

It is hoped that continued light trap operations in the vicinity of Frederika during the summer of 1970 will yield more specimens of this species.

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#### THE FINE STRUCTURE OF THE DORSAL VAGINAL VALVE OF *Aedes aegypti* (LINNAEUS)

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In studying the fine structure of the seminal bursa of the Bangkok strain of the mosquito *Aedes (Stegomyia) aegypti* (Linnaeus) at different stages of spermathecal filling (Jones and Sheffield, 1970), sagittal sections were taken through the vagina. The anatomy of the very complex reproductive system of this mosquito has already been described in some detail by Jones and Wheeler (1965). As shown in Figure 1, the vagina is located in the terminal abdominal

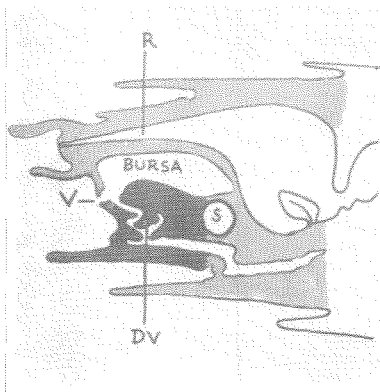


FIG. 1.—Semi-diagrammatic view of a sagittal section through the terminalium of female *Aedes aegypti*, showing the external opening (V) to the S-shaped vagina and the foot-shaped dorsal vaginal valve (DV). Note that this valve is situated ventral to the rectum (R) and the bursa, and lies posterior to the spermathecae (S).

segment, ventral to the rectum (R) and the bursa, and posterior to the spermathecae (S). When seen in sagittal section, the vagina appears as an S-shaped cavity. The largest and most conspicuous structure within the vaginal cavity is the dorsal valve (Fig. 1, DV). This foot-like organ has a series of teeth on its posterior face which are important in the attachment of the male's aedeagus during coitus (Jones and Wheeler, 1965). The present note gives a brief description of the fine structure of the dorsal vaginal valve.

As shown in Figure 2, the cuticle of the dorsal vaginal valve is composed of a thin, electron-dense epicuticle (EP) facing the vaginal lumen (L), a thick, electron dense, finely grained, nonlamellated exocuticle (EX), a thick, lamellated endocuticle (EN), and a very thick, coarsely flocculent subcuticle (SC). As can be seen in the micrograph, the epicuticle and exocuticle form a series of spine-like projections which extend into the vaginal lumen. These structures appear similar to the acanthae found in the proventriculus of some other insects (Richards and Richards, 1969). Beneath the subcuticle of the dorsal vaginal valve are the large hypodermal (epidermal) cells (H) which secreted the cuticular layers during pupal life. In the adult, each cell has a large nucleus and a small amount of cytoplasm containing many fine apical folds, some mitochondria, microtubules, and relatively very little rough endoplasmic reticulum.

It is known that shortly after insemination of the mosquito (that is, when semen is present within the bursa), generally many spermatozoa quickly leave the bursa and enter usually two

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