Table 2. Percentages of mojavensis second and third chromosomes observed in the "hybrid" population.

Sample Number	Percent Chromosome 2		Percent Chromosome 3	
	ST	LP	ST	MU
1	6.4	93.6	80.1	19.9
2	6.7	93.3	89.0	11.0
3	5.4	94.6	84.7	15.3
4	4.0	96.0	87.6	12.4
5	4.8	95.2	90.8	9.2
6	3.8	96.2	90.3	9.7
7	4.7	95.3	92.9	7.1
8	2.6	97.4	88.8	11.2
9	5.9	94.1	91.5	8.5
10	4.8	95.2	96.5	3.5

Heed, W. B. and R. W. Jensen. University of Arizona. Drosophila ecology of the Senita cactus, Lophocereus schottii.

D. pachea breeds in the rotting stem of senita cactus where it obtains the sterol, schottenol, for growth and reproduction. Other species of desert-adapted Drosophila do not breed in the stem of senita because it contains factors which are toxic to them (Heed and Kircher, Sci., Aug. 1965). The following bioassay is to determine the growth characteristics of Drosophila on the fruit of this unusual plant. Two different strains each (one strain repeated in mojavensis) of five species of Drosophila, which regularly inhabit the Sonoran Desert, were tested for reproductive ability by dividing one vial of mature egg-laying adults from each strain into two. One vial of standard banana media was supplemented with a cube of sterilized fruit and the other with a cuve of sterilized stem. In this way from 40 - 60 flies were tested per vial against their sibs. The number of progeny are recorded in the table.

	pachea		pseudoobscura		arizonensis		mojavensis		nigrospiracula	
	A	B	A	B	A	B	A	B	A	B
Stem	215	183	127	40	74	71	49	41	13	28
Fruit	110	58	161	96	257	255	179	294	37	94

D. pachea performs better on the stem than the fruit. The four other species perform better on the fruit, one reason being that the parents were killed in the stem vial. The time when 50% of the adults were killed was 7 days for pseudoobscura, 12 days for arizonensis and mojavensis and 25 days for nigrospiracula. Very few parents of any species, including pachea, were dead when they were removed from the fruit vials to avoid overlapping of generations. However, since the larval density was high in both fruit and stem vials in all species, there was also a high degree of larval and/or pupal deaths due to the stem. The low number of progeny from both tests in strain A of nigrospiracula reflects an unexpected unequal sex ratio in favor of the males. All progeny from all tests were fertile (produced larvae) on non-supplemented standard banana media in varying degrees. In the case of pachea the progeny from the fruit vials in one week layed 1/4 to 1/10 as many eggs as equal numbers of progeny from the stem vials, for instance: 73 vs 1,120 and 95 vs 425 eggs.

It is concluded from the performance of pachea that the fruit of senita contains either a very small amount of the sterol, schottenol, or a slightly different sterol. It is known from previous tests that pachea will not complete a full generation on banana food without supplementation either with the stem of senita or with schottenol or closely related sterols. One sterol ($\Delta^{5,7}$ stigmastadien 3-β-ol) is known to allow growth but not egg production. It may also be concluded that the fruit does not contain toxic factors to any appreciable amount. Both arizonensis and nigrospiracula have been reported associated with the fruit of senita in nature. From the present tests one may confidently predict that pachea does not breed in the fruits of senita in the Sonoran Desert.