larvae, microorganisms and various properties of the resource. The precise mechanism of pH modification remains unclear.

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A parthenogenetic strain of *D. pallidosa*-like in the *D. ananassae* complex.

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In the *D. ananassae* complex, parthenogenetic strains of *D. pallidosa* and *D. ananassae* were already reported by Futch (1972). According to Futch (1973, 1979) this trait is genetically controlled and the mechanism of parthenogenesis of *pallidosa* and *ananassae* seems to be pronuclear duplication and partly terminal fusion. Now, we found parthenogenetic females from an iso-female strain (LAE 345) of *D. pallidosa*-like collected at Lae, Papua New Guinea in 1981, and established a new parthenogenetically reproducing strain. *D. pallidosa*-like distributing in Papua New Guinea was described by Tomimura *et al.* (1993). In addition to a "impaternate" strain of LAE 345, we established a bisexual "bridge" strain of LAE 345. Because F_1 virgin females between LAE 345-Im females and e^D/Sb *ananassae* males have any parthenogenetic ability (Table 1), genes controlling the parthenogenesis might be recessive. Dr. Futch kindly gave us a parthenogenetic strain marked with *yellow* of *ananassae*, and we made crosses between *ananassae* impaternate females and males from the "bridge" strain of LAE 345 of *pallidosa*-like. Because F_1 virgin females have also parthenogenetic ability the same as parental parthenogenetic strains (Table 1), the parthenogenetic ability of the two species might be controlled by the same genetic factors.

Futch (1972) showed that parthenogenetic females of *ananassae* and *pallidosa* were found in only South Pacific Island. Now we found the parthenogenetic strain of *pallidosa*-like in Papua New Guinea. But, the distribution of parthenogenetic strains was still restricted in the South Pacific Islands including Papua New Guinea in *ananassae* complex (Table 2, and Futch 1972). Some genetic factors controlling parthenogenesis might incorporate into the gene pool of *pallidosa*-like in Papua New Guinea from *pallidosa* and/or *ananassae* from South Pacific Islands by hybridization in nature as already suggested by Tomimura *et al.* (1993) based upon the components of chromosome rearrangements among *ananassae* complex.

Table 1. Parthenogenesis ability and productivity of impaternate adults.

Strains (range)	No. of mothers tested	No. of mothers produced adults	% of mothers produced adults	Impaternates / mother
pallidosa-like (LAE 345-Im)	61	59	96.7	12.6 (1-28)
ananassae - Im[y]	43	35	81.4	8.1 (1-28)
F_1 (LAE345-Im/*ana*[e^D])	75	0	0.0	0
F_1 (*ana*-Im/LAE345-Br)	13	13	100.0	13.7 (2-19)

Im: "impaternate" strain. Br: "bridge" strain.

F_1: (female parents / male parents)

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Table 2. Number of strains with impaternate females in various species of the *ananassae* complex.

Species	Locality	No. of tested strains (No. of females tested)	No. of strains with impaternate females
ananassae			
	Nairobi, Kenya (L)	1 (17)	0
	Kandy, Sri Lanka (C)	2 (61)	0
	Coinbatore, India (D)	2 (59)	0
	Hyderabad, India (HYD)	1 (21)	0
	Bukit Timer, Singapore (W)	2 (73)	0
	Chiang Mai, Thailand (B)	1 (27)	0
	Kuala Lumpur, Malaysia (X)	2 (23)	0
	Sandakan, Malaysia (S)	1 (10)	0
	Palawa, Philippines (R)	1 (16)	0
	Los Banos, Philippines (Q)	3 (77)	0
	Australia (AUS)	1 (25)	0
	Guam (GUM)	2 (45)	0
	Lae, Papua New Guinea (LAE)	1 (20)	0
	Port Moresby, Papua New Guinea (POM)	2 (101)	0
	Ponape, Caroline Islands (PNI)	2 (111)	0
	Tongatapu, Tonga	1 (10)	0
	Vava'u, Tonga (VAV)	1 (15)	0
	Pago Pago, Samoa (PPG)	1 (41)	0
pallidosa-like			
	Wau, Papua New Guinea	2 (78)	0
	Lae, Papua New Guinea	3 (94)	1
pallidosa			
	Lautoka, Fiji (NAN)	4 (162)	0
Taxon K			
	Kotakinabalu, Malaysia	2 (69)	0
papuensis-like			
	Wau, Papua New Guinea	2 (78)	0
	Lae, Papua New Guinea	2 (43)	0

Strains, species, and symbol of locality were described in detail by Tomimura *et al.* (1993)

Distribution of *Drosophila* in Okinawa and Sakishima Islands, Japan.

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Distribution of *Drosophila* flies in six islands of Okinawa prefecture of Japan had been surveyed in 1980's and 1990's from ecological and biogeographical viewpoints. Flies were collected using banana bait traps, within seven days after trap setting. At an exceptional site in Nago, Okinawa, flies were collected by sweeping over the garbages around pineapple yard. Figure 1 shows the collection sites of Okinawa and Sakishima islands (Miyakojima, Ishigakijima, Iriomotejima, Haterumajima and Yonagunijima). Flies were classified into one *Phorticella* and 21 *Drosophila* species according to Okada (1987). In his paper,