RECORDS OF *AEDES ALBOPICTUS*, *AE. AEGYPTI* AND *AE. TRISERIATUS* FROM THE U.S. AIR FORCE OVITRAPPING PROGRAM—1989

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ABSTRACT. During 1989, ovitrapping was conducted by 36 U.S. Air Force bases, Ft. Sam Houston, TX, and the San Antonio Metropolitan Health District. Eleven organizations were positive for *Aedes albopictus*; the collection of *Ae. albopictus* at Arnold Air Force Base, TN, is a new record for Coffee County. Ten organizations were positive for *Ae. aegypti*; 18 were positive for *Ae. triseriatus*.

Ovitrapping to monitor container-breeding *Aedes* is conducted at numerous United States Air Force (USAF) installations in the eastern, midwestern and southern United States. During 1988, 2,045 paddles were collected by 37 organizations and 3 new county records for *Aedes albopictus* (Skuse) were established (McHugh and Vande Berg 1989). The following summarizes the results of the USAF program during 1989.

The ovitrapping protocol has been described previously (McHugh and Vande Berg 1989). Paddles were shipped to the Medical Entomology Section, Epidemiology Division, USAF School of Aerospace Medicine (USAFSAM), Brooks Air Force Base (AFB), TX, for examination. Eggs present on the paddles were tentatively identified as *Aedes triseriatus* (Say) or *Aedes* (*Stegomyia*) spp. Seven to 10 days after receipt, eggs were hatched in a 1:1 mixture of tap:distilled water and reared on liver powder to fourth instar larvae or adults for specific identification.

During 1989, 2,864 paddles were submitted to USAFSAM by 36 USAF installations, Ft. Sam Houston, TX, and the San Antonio (TX) Metropolitan Health District (Table 1). *Aedes albopictus*-positive paddles were submitted by 11 organizations. The collection of *Ae. albopictus* at Arnold AFB, was a new record for Coffee County, TN. Ovitrapping at Arnold AFB commenced in mid-May and continued through early October. The initial *Ae. albopictus*-positive paddle at Arnold AFB was collected on August 3. The remaining positive paddles at that base were collected in mid- to late September. A single paddle with eggs identified as *Ae.* (*Stegomyia*) spp. was collected at Arnold AFB on October 3, the last collection day at the base. Arnold AFB is within the range of *Aedes aegypti* (Linn.) (Darsie and Ward 1981), but the yellow fever mosquito was not collected on the base in 1988 or 1989. The absence of *Ae. aegypti* suggests that the October 3 collection of *Ae.* (*Stegomyia*) spp. was *Ae. albopictus*, and indicates that the species was active until at least early October in central Tennessee. During 1988, a single paddle with *Ae.* (*Stegomyia*) spp. eggs was submitted by Arnold AFB (McHugh and Vande Berg 1989), but specimens could not be reared for identification. That collection suggests that *Ae. albopictus* may have been present in Coffee County as early as 1988. The collection of *Ae. albopictus* at England AFB, LA, was a new record for that base, but *Ae. albopictus* has been present in Rapides Parish since at least 1987 (Moore et al. 1988). The remaining 9 bases where *Ae. albopictus* was collected in 1989 had all reported this species previously.

Aedes aegypti was found by 10 organizations. Of these, Shaw AFB, SC, was the only base which had not recorded the presence of *Ae. aegypti* in the previous 3 years. Shaw AFB is within the range of *Ae. aegypti* (Darsie and Ward 1981), and the failure to demonstrate that species is probably a reflection of the very modest surveillance effort at that base in recent years.

Thirty-nine paddles had eggs of both *Ae. aegypti* and *Ae. albopictus*. Of these, 34 were submitted by the San Antonio Metropolitan Health District, 2 were from Lackland AFB, TX, and one each came from Little Rock AFB, AR, Carswell AFB, TX, and Randolph AFB, TX.

Overall, there was an increase in the percentage of paddles positive for *Ae. albopictus* from 2.7% in 1988 to 8.8% in 1989. Similarly, there was an increase in the percentage of *Ae. aegypti*-positive paddles from 4.4 to 5.2% in 1989. Year-to-year trends in these 2 species at individual bases were highly variable and, in addition to real changes in the mosquito populations, these trends also may reflect the influence of factors such as weather or the selection of sampling sites. For example, the San Antonio Metropolitan Health District discontinued sampling at several sites in 1989 which were rarely positive in 1988. The deletion of those sites may have resulted in an apparent, rather than real, in-

Table 1. Summary of paddles processed at the Epidemiology Division, USAF School of Aerospace Medicine, during 1989.

Organization and state	County (Parish in LA)	Total paddles	Positive ovitraps[1]							
			Aedes albopictus		*Aedes aegypti*		*Aedes (Stegomyia)*		*Aedes triseriatus*	
			n	%	*n*	%	*n*	%	*n*	%
Eaker AFB, AR	Mississippi	182	0	0.0	0	0.0	1	0.5	0	0.0
Little Rock AFB, AR	Pulaski	137	43	31.4	1	0.7	4	2.9	7	5.1
Bolling AFB, DC	Prince Georges	36	0	0.0	0	0.0	0	0.0	4	11.1
MacDill AFB, FL	Hillsborough	231	0	0.0	37	16.0	15	6.5	0	0.0
Chanute AFB, IL	Champaign	5	0	0.0	0	0.0	0	0.0	2	40.0
Scott AFB, IL	St. Clair	14	0	0.0	0	0.0	1	7.1	4	28.6
Grissom AFB, IN	Miami	14	0	0.0	0	0.0	0	0.0	1	7.1
McConnell AFB, KS	Sedgwick	54	0	0.0	0	0.0	2	3.7	0	0.0
Barksdale AFB, LA	Bossier	57	14	24.6	0	0.0	4	7.0	2	3.5
England AFB, LA	Rapides	133	15	11.3	0	0.0	4	3.0	12	9.0
Wurtsmith AFB, MI	Iosco	58	0	0.0	0	0.0	0	0.0	2	3.4
Whiteman AFB, MO	Johnson	49	0	0.0	0	0.0	1	2.0	5	10.2
Columbus AFB, MS	Lowndes	13	0	0.0	1	7.7	0	0.0	1	7.7
Seymour Johnson AFB, NC	Wayne	241	0	0.0	4	1.7	5	2.1	3	1.2
Altus AFB, OK	Jackson	41	0	0.0	0	0.0	1	2.4	0	0.0
Tinker AFB, OK	Oklahoma	40	0	0.0	0	0.0	0	0.0	11	27.5
Charleston AFB, SC	Berkeley	21	0	0.0	0	0.0	1	4.8	0	0.0
Myrtle Beach AFB, SC	Horry	39	0	0.0	0	0.0	1	2.6	1	2.6
Shaw AFB, SC	Sumter	20	0	0.0	1	5.0	0	0.0	0	0.0
Arnold AFB, TN	Coffee	69	7	10.1	0	0.0	3	4.3	48	69.6
San Antonio Metro Health Dist, TX	Bexar	548	129	23.5	83	15.1	43	7.8	2	0.4
Brooks AFB, TX	Bexar	28	6	21.4	0	0.0	4	14.3	1	3.6
Ft. Sam Houston, TX	Bexar	10	2	20.0	1	10.0	1	10.0	2	20.0
Lackland AFB, TX	Bexar	237	11	4.6	7	3.0	12	5.1	2	0.8
Kelly AFB, TX	Bexar	205	2	1.0	7	3.4	4	2.0	0	0.0
Randolph AFB, TX	Bexar	75	7	9.3	6	8.0	3	4.0	0	0.0
Carswell AFB, TX	Tarrant	6	3	50.0	1	16.7	0	0.0	0	0.0
Total			239		149		110		110	

[1] The following organizations submitted the number of paddles indicated, all of which were negative: Dover AFB, DE—6; Tyndall AFB, FL—2; Homestead AFB, FL—81; Eglin AFB, FL—21; Moody AFB, GA—47; Offutt AFB, NE—5; Holloman AFB, NM—53; Pope AFB, NC—5; Vance AFB, OK—15; Goodfellow AFB, TX—5; Reese AFB, TX—61.

crease in mosquito abundance. Given these confounding factors, it is impossible to use these data to demonstrate the presence or absence of competition between *Ae. albopictus* and *Ae. aegypti*.

Two paddles with eggs tentatively identified as *Ae.* (*Stegomyia*) spp. were collected at McConnell AFB, KS. This base was outside the known ranges of both *Ae. aegypti* and *Ae. albopictus*. Unfortunately, specimens could not be reared. *Aedes* (*Stegomyia*) spp. eggs were identified from an additional 18 organizations; all 18 previously had recorded *Ae. albopictus* or *Ae. aegypti* or were within the range of one or both of those species.

Aedes triseriatus was found at 18 installations; all were within the known range of this species. The San Antonio Metropolitan Health District and Ft. Sam Houston each submitted one paddle that contained 3 species—*Ae. aegypti*, *Ae. albopictus* and *Ae. triseriatus*. Lackland AFB, Randolph AFB and Ft. Sam Houston each submitted one paddle from which *Aedes epactius* Dyar and Knab was reared.

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