set in warm weather without significant production of adults. Trapping periods shorter than a week would probably not produce adults. The minimal embryonation time for *Ae. aegypti* is 20 hr and the mean time to pupation is 6 days at 28°C (Christophers 1960). Usually the pupal stage lasts 2 to 3 days (Anonymous 1979). Thus, considering the crowded, food-limiting conditions of a weekly serviced ovitrap, production of adults would seem unlikely. However, longer trapping periods would produce adults which would defeat the purpose of the survey. The hot, wet weather during the study suggests that a weekly trapping regime would produce a minimal number of additional adults in even tropical climates.

The weekly trapping period has several advantages over shorter periods when used in general *Ae. aegypti* surveys. A longer trapping period is more sensitive. Frank and Lynn (1982) found the percentage of positive ovitraps increased with the time of exposure. Thus, longer trapping periods would be more likely to detect low level populations than shorter regimes. Additionally, the longer regime would increase the number of eggs/trap, thus increasing the statistical reliability of the data.

A weekly trapping period provides for continuous trapping. Continuous trapping (trap constantly in operation) reduces bias due to bad weather (i.e., conditions unfavorable for oviposition) and brood effects (i.e., local synchronous emergence followed by a 4–5 day lag in oviposition (Fay and Eliason 1966)). A noncontinuous trapping period increases the likelihood of such biases.

A weekly trapping period is more economical and efficient. Considering a 2-day trapping period where the inspector must service traps twice/week, a weekly regime would halve the costs and time.

Short trapping periods are advantageous in certain situations as they pinpoint temporal changes in oviposition more effectively than longer regimes. Fay and Craig (1969) used a 1-day trapping period to analyze the integration of released, genetically marked *Ae. aegypti* into natural populations at Meridian, Mississippi. Nayar (1981) also used a 1-day regime to determine the ovipositional history of released adults.

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ATTRACTION OF SIMULIIDAE TO DIFFERENT COLORS ON HUMANS—FIELD TRIAL

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Simuliid flies mostly depend on host stream and visual stimuli to orient themselves for a blood meal. For selection of the host, color plays an important role (Service 1977). In Canada, Davies (1972) compared the attraction of simuliids to a variety of colored garments and found that yellow, green and orange colors were less attractive than white and much less than maroon, purple or gray. Bradbury and Bennett (1974) compared the numbers of simuliids landing on two dimensional, white, yellow, red, blue and black colored silhouettes. Carbon dioxide was released near the targets to provide a general upwind attractant. It was found that *Prosimulium mixtum/P. fuscum* complex and *Cnephia mutata* Malloch were attracted to black and red silhouettes, while *Simulium venustum* Say was attracted more towards blue and *S. vittatum* Zetterstedt almost indiscriminately to all colors except yellow. Bennett et al. (1972) also found that almost equal number of blackflies landed on red or black silhouettes.

In our study, a sunny, clear, flat area at the side of the Tenga River, 20 km south of Bomdila (Arunachal Pradesh) was selected as the experimental site. The experiment was carried out during March/April 1979. Twelve sets of cotton[1] sleeping suits were made of six contrasting colors, i.e., black, red, green, olive green, white and yellow (two sets of each color). Two human subjects wearing garments of the same color, seated side by side, were treated as one unit. Likewise, six units were seated in two rows facing each other. The distance between the two rows and unit to unit was 3 meters. This study was conducted from 0800 to 1100 hr for 12 days. Colored units were moved every 30 min in cyclic order to the next position, so that a full cycle was completed in 3 hr. Human subjects changed their garments on the successive day to eliminate subject preference, if any. Simuliid flies, landing/biting on human subjects, were collected by two insect collectors with the help of aspirator tubes and later identified. The observations are recorded in Table 1.

Table 1. Numbers of *Simulium himalayense* landing on human subjects wearing different colored garments.

Color	No. of *S. himalayense* collected	Mean no./ collection	Ratio to yellow
Black	1080*	90.00*	6.32
Red	803*	66.92*	4.70
Green	518*	43.17*	3.03
Olive green	432	36.00	2.53
White	403	33.58	2.36
Yellow	171	14.25	1
Total	3407		

* Significant at 0.01 probability level. (Least significant difference (LSD) = 22.96).

Altogether, 3,754 simuliid flies were collected in 12 replicates. The collection was 90.8% *S. himalayense* Puri. Other species encountered were *S. indicum* Beacher, *S. baraudi* Puri, *S. kapuri* Datta, *S. praelargum* Datta and *S. striatum* Brunetti. The species composition was further confirmed by identification of larvae and pupae collected from the adjoining breeding places of the experimental site. The greatest collection was made on black garments followed by red; the lowest being on yellow. A two-way analysis of variance ($F^{[5,55]0.01} = 11.07$) showed that the collections from black, red and green garments were statistically significant among themselves as well as from yellow. Moreover, black and red showed a significant difference against all other colors tested. Similar observations were earlier recorded by Bradbury and Bennett (1974) and Bennett et al. (1972).

It has been observed that attractiveness of simuliids to color decreased with increased reflectivity, i.e., black/red < green < olive green < white < yellow. From the epidemiological point of view, it may be concluded that use of material of higher reflectivity will be helpful in reducing man: simuliid contact.

[1] Binny casement shade No. 5002, 3006, 2067, Army OG, WFS 105 BLD and 6027.

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OCCURRENCE OF *AEDES MITCHELLAE* IN INDIANA[1]

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Aedes mitchellae (Dyar), a ground pool-breeding mosquito, is largely limited to the coastal states from Delaware south to Florida and west to Texas (Darsie and Ward 1981). It has also been found in southern Oklahoma, Arkansas and Tennessee, and, except for a few infrequent and widely isolated reports, this is the limit of its range in non-coastal areas.

This summer, while examining New Jersey light trap collections for the St. Joseph County (Indiana) Mosquito Abatement Program, I

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