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MOVEMENT PATTERNS AND SOCIALITY OF THE MEDITERRANEAN GECKO, *HEMIDACTYLUS TURCICUS*, IN SOUTHWESTERN LOUISIANA

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ABSTRACT—The Mediterranean gecko, *Hemidactylus turcicus*, is a nonnative lizard that lives on buildings and other artificial structures in the southern United States. Previous studies have shown that geckos rarely move from one building to another and that, when they do, it is usually due to juveniles dispersing to new buildings. Little is known about the movements of geckos on the buildings they occupy or about the degree to which males and females or adults and juveniles associate with each other during their nocturnal activity periods. We used data from a multi-year, mark-recapture study of a population of Mediterranean geckos on a one-story building in southwestern Louisiana to analyze movements of geckos between recaptures and to analyze age and sex of pairs of geckos. The distance moved by adult geckos between recaptures was usually small (<5 m) regardless of whether the time between recaptures was <30 days, >30 days within a year, or in succeeding years. There was no difference in patterns of movement between adult males and adult females. Occasionally, adult geckos did make long-distance movements of ≥ 18 m, but these were often followed by movements back to their starting point. Juvenile geckos generally moved greater distances between recaptures than did adults, perhaps as a means of dispersal to a new area on the building. Juvenile geckos were associated with adult geckos in pairs less frequently than expected whereas the number of same-sex and different-sex pairs of adults did not differ from expectations if males and females associated randomly. Overall, the results present a picture of juveniles moving long distances, perhaps to escape contacts with adults, but typically remaining in their home areas for months or years once they become adults.

RESUMEN—El geco casero del Mediterráneo, *Hemidactylus turcicus*, es una lagartija no nativa que vive en los edificios y en otras estructuras artificiales en el sur de los Estados Unidos. Estudios previos han mostrado que los geocos raramente se mueven de un edificio al otro, y que cuando lo hacen, usualmente son los juveniles los que se dispersan a nuevos edificios. Poco se sabe sobre los movimientos de los geocos en los edificios que ocupan o sobre el grado en que machos y hembras o adultos y juveniles se asocian entre si durante sus periodos de actividad nocturna. Usamos datos de varios años de un estudio de marca-recaptura de una población de geocos caseros del Mediterráneo en un edificio de un piso en el suroeste de Louisiana para analizar los movimientos de los geocos entre recapturas y analizar la edad y el sexo de pares de geocos. La distancia recorrida por los geocos adultos entre recapturas fue por lo general pequeña (<5 m), sin importar si el tiempo entre recapturas era <30 días, >30 días dentro de un año o en los años sucesivos. No hubo diferencia en los patrones de movimiento entre adultos machos y hembras. Ocasionalmente, los geocos adultos hicieron desplazamientos de una distancia larga de ≥ 18 m, pero estos fueron frecuentemente seguidos por movimientos de vuelta hacia el punto de partida. Los geocos juveniles por lo general recorrían distancias más grandes entre recapturas que los adultos, tal vez como un medio de dispersarse hacia una nueva área en el edificio. Los geocos juveniles fueron asociados en pares con los geocos adultos menos frecuentemente de lo esperado, mientras el número de los pares del mismo sexo y diferente sexo no se diferenciaron en las expectativas si es que los machos y hembras se asociaban al azar. En fin, los resultados presentan una imagen de juveniles desplazándose por largas distancias, quizás para evitar contacto con los adultos, pero típicamente permaneciendo en sus hogares por meses o años una vez que se convierten en adultos.

The Mediterranean gecko, *Hemidactylus turcicus*, is a nonnative gekkonid lizard introduced into Florida in the early twentieth century (Stejneger, 1922). It has subsequently expanded its range into all the states in the

southern one-third of the United States from Florida to California (NatureServe, <http://www.natureserve.org/explorer>) as well as several states further north, reaching as far as Maryland (Norden and Norden, 1991) and

Virginia (Kleopfer et al., 2006) along the east coast and South Dakota in north central United States (Platt et al., 2008). It is presently widespread in Louisiana (Meshaka et al., 2006) and much of Texas (Jadin and Coleman, 2007; Farallo et al., 2009), aided in dispersal by unintentional and intentional transportation of eggs or live lizards by humans (Davis, 1974; Locey and Stone, 2006). It is a small (adult snout–vent length, SVL, 42–55 mm) edificarian lizard that lives on and in buildings and other artificial structures. At night, Mediterranean geckos prowl around on the walls of buildings to locate small arthropods, many of which are attracted to outside lighting (Saenz, 1996; Punzo, 2001). During the day, geckos hide behind features of buildings such as drain pipes or light fixtures, or in holes or cracks in masonry of buildings (Rose and Barbour, 1968; Williams and McBrayer, 2007).

The rapid dispersal of the Mediterranean gecko has stimulated research into its patterns of movement from one site to another and from building to building within a site (jump-dispersal and diffusion-dispersal, respectively; Locey and Stone, 2006, 2008). Several studies have shown that Mediterranean geckos rarely move from one building to another even if buildings are close to each other (Rose and Barbour, 1968; Selcer, 1986; Trout and Schwaner, 1994; Punzo, 2001) and have suggested the diffusion dispersal from building to building is accomplished mainly by juveniles (Locey and Stone, 2008). Much less is known about patterns of movement of Mediterranean geckos on the buildings they occupy. Two studies, Rose and Barbour (1968) and Selcer (1986), have noted that the distance geckos move between recaptures was typically only a few meters, but neither study reported data separately for males and females or for adults and juveniles. In the most comprehensive study to date, Klawinski (1991) found the mean size of home range of Mediterranean geckos was slightly more than 4 m² and that there was no difference among adult males, adult females, and juveniles. However, the sampling intervals for the study were about 6 weeks within a calendar year. There is no information on how much adult male, adult female, or juvenile geckos move on their home building during an entire season of activity or from year to year.

Because the density of a population of Mediterranean geckos on a building is often high (Selcer, 1986; Punzo, 2001; Hibbs et al., 2004), geckos are likely to encounter one another on outside walls during their nocturnal activities. This raises the possibility that various types of social interactions such as territorial aggression or courtship could occur and that such interactions may influence the distribution of geckos on the building. Two studies have specifically addressed this issue. Gomez-Zlatar and Moulton (2005) studied sociality of a population of Mediterranean geckos in Florida and recorded more observations of adult geckos in social groups during nocturnal activity than was expected if geckos distributed themselves randomly, though they

were not able to determine the sex of the adults in pairs or groups because they did not capture lizards. These authors also recorded fewer cases of juveniles in a pair with an adult than expected if juveniles and adults distributed themselves randomly. In tethering experiments, Locey and Stone (2008) found that adult geckos attacked juveniles and suggested juvenile dispersal may occur to avoid contact with adults. Though these observations suggest juvenile Mediterranean geckos tend to avoid adults, they do not address the issue of the extent that adult male and adult female geckos avoid (or associate with) each other when active.

As part of a long-term study of the dynamics of populations of Mediterranean geckos (Hibbs et al., 2004; Kinney et al., 2008), we captured and marked Mediterranean geckos occupying a one-story building on the campus of McNeese State University in southwestern Louisiana in 1999–2000 and 2002–2005. Recapture of marked geckos allowed us to obtain data on patterns of movement of geckos on the building over time intervals ranging from <1 month to successive years. We also were able to capture and determine the sex of a number of geckos that we found associated together as pairs allowing us to obtain data on sociality of geckos in this population. We report these data to add to the understanding of patterns of movement and sociality of the Mediterranean gecko. Specifically, we address four questions. Is there a relationship between the amount of time between recaptures and the distance moved by geckos? Do adult male and adult female Mediterranean geckos differ in how much they move between recaptures? Do adult and juvenile Mediterranean geckos differ in how much they move between recaptures? Do males and females or adults and juveniles associate with each other in pairs more or less frequently than expected if geckos distribute themselves randomly?

MATERIALS AND METHODS—McNeese State University is located in Lake Charles, southwestern Louisiana, 42 km N of the Gulf of Mexico and 35 km E of the Louisiana-Texas border. Geckos were collected on the outside surface of Smith Hall located on the western edge of the campus (latitude 30.181137, longitude –93.218114). Smith Hall is a circular one-story brick building 4-m tall with a circumference of 135 m. A 2.3-m concrete portico supported by 24 evenly spaced columns overhangs the sidewalk surrounding the building. The outside of the building is light-colored brick interspersed with doorways and irregularly spaced ground-to-roof windows. Lights on the surface of the building and in the overhanging portico provide illumination at night that attracts insects and other arthropods that geckos consume. Cracks, holes, and seams around the windows and doors and the spaces between the baseplates of lights and drain pipes bolted to the walls of the building are used as refuges for geckos during daylight hours. The portico between each of the 24 supporting columns was divided into four equally-sized quadrants by seams in the concrete of the portico. Each of the 96 quadrants defined a 1.4-m arc along the outside wall of Smith Hall; these were used to map the precise location of each gecko on the building.

Geckos were collected during at least 7 nights from spring through fall 1999–2005 except in 2000 when geckos were collected on only 5 nights and 2001 when geckos were not collected at all. Sampling nights were generally about 1 month apart except during late summer and fall 2003 and 2004 when additional sampling nights were undertaken to try to capture and mark neonates (Appendix 1). Collection of geckos began ca. 30 min after sunset and was completed within 2–3 h. Air temperature was always at least 20°C at the start of collection each night.

Geckos were collected by starting at the doorway at the east entrance of the building and walking slowly clockwise around the building while shining a flashlight along the wall to reveal geckos. Because most geckos were at the top of the wall (where the wall met the portico) or were upside down on the portico, it was often necessary to chase a gecko with a soft broom to maneuver it into position so it could be captured by hand. The quadrant in which each gecko was first seen was recorded. The snout–vent length (SVL) of each gecko was measured to the nearest millimeter and the sex of each gecko with a SVL >42 mm was determined by checking for the presence of pre-anal pores (present in males, absent in females). Geckos with a SVL <42 mm were listed as juveniles. Each gecko was permanently marked by clipping one to three toes in a unique pattern (no more than one toe per foot). Previous study has shown that Mediterranean geckos can have as many as four toes removed without suffering a decline in ability to cling to a vertical surface (Paulissen and Meyer, 2000). Each gecko was released at the quadrant where it was first located.

When we encountered pairs of geckos spaced within 50 cm (three bricks) of each other, we made a special effort to capture both geckos to determine their sex and age class (adult or juvenile). These data were used to determine if males and females or adults and juveniles associated with each other more or less frequently than expected by chance.

In 2004, we recorded the height on the outside wall at which each captured gecko was located as the number of bricks down from the top of the wall (where the wall met the overhanging portico). Because nearly all geckos were found at or near the top of the wall, we characterized the location into two categories: within 6 cm (one brick) of the top of the wall; >7 cm (two or more bricks) from the top of the wall.

Distance between recaptures was estimated as the smallest number of quadrants between captures. For a round building divided into 96 quadrants, the greatest distance that could be moved between captures was half way around the building or 48 quadrants. Recaptures were divided by two criteria: time between recaptures (within 30 days, >30 days but within a year, in successive years); age class and sex (adult male, adult female, and juvenile). Chi-square tests were used to evaluate differences in the number of quadrants moved between recaptures by adults for the three intervals of recapture and for adults versus juveniles for the intervals >30 days but within a year and successive years (we did not recapture any juveniles within 30 days). Because the sample sizes for juveniles were so small, we collapsed the chi-square tables comparing adults to juveniles into two categories (short movement between recaptures, 0–3 quadrants; long movement between recaptures, 4–48 quadrants) for tests. We also used this collapsed format to compare movement between recaptures for the three intervals of recapture for adults. We used Pearson chi-square tests when

the sample sizes in the cells of the chi-square table were large; we used Yate's chi-square tests when 20% or more of the cells had sample sizes less than five.

To analyze sociality, we tallied the number of same-sex and different-sex pairs of geckos for which we were able to determine the sex of both individuals and compared the number to what would be expected if males and females associated randomly (given the 1:1 sex ratio found at Smith Hall) using a chi-square goodness of fit test. We made a similar comparison of the frequency of adult-adult, adult-juvenile, and juvenile-juvenile pairings using the proportion of adults and juveniles captured (0.78 and 0.22, respectively) to calculate expected frequencies. The locations recorded in 2004 were divided into two categories (top and lower), and the differences in distribution between males and females and between adults and juveniles were evaluated using chi-square tests. All tests were conducted using MYSTAT Version 12 for Windows (SYSTAT Software Inc., Chicago, Illinois) or online calculation for chi-square tests (<http://www.people.ku.edu/~preacher/chisq/chisq.htm>).

RESULTS—A total of 578 geckos (225 adult males, 226 adult females, 127 juveniles) were captured during this study; 166 geckos were recaptured at least once (and many were recaptured more than once) resulting in a total of 252 recaptures. Adult geckos were seldom recaptured far from the point of their previous capture. Considering all recaptures of males and females over the three intervals of recaptures, 157 of 235 recaptures (66.8%) were from 0–3 quadrants (0.0–4.2 m) from the previous capture. Overall, the mean ($\pm SE$) number of quadrants between recaptures was 4.7 ± 0.497 , the equivalent of about 6.5 m. This was the pattern for each interval of recaptures (Fig. 1). There was no significant difference in the number of quadrants moved between recaptures by adults among the three intervals of recaptures (Yate's $\chi^2 = 6.635$, $df = 18$, $P = 0.99$; Fig. 1). Similarly, the number of short (zero to three quadrants) versus long (four or more quadrants) moves between recaptures was not affected by the interval between recaptures (Pearson's $\chi^2 = 1.010$, $df = 2$, $P = 0.60$). These results suggest adults generally stayed within a small area on Smith Hall over short and long time-frames. The degree of site fidelity could be extreme; e.g., one adult male was captured within two quadrants (2.8 m) of its first capture in each of seven recaptures from 23 September 2003–29 May 2005. Similarly, an adult female was recaptured within three quadrants (4.2 m) in five recaptures from 2 July 2002–19 July 2004. A few adults did move very long distances of 13 or more quadrants (18.2 m), but these moves could occur over an interval as short as 19 days or as long as 2 years (Fig. 1). Most long-distance moves were followed by shorter moves between recaptures or by no recaptures at all. However, a few adult geckos exhibited long-distance movements away from an area to a new part of the building then subsequently returned to their starting point. For example, one adult male moved 33 quadrants (46 m) between 12 September 2002 and 26

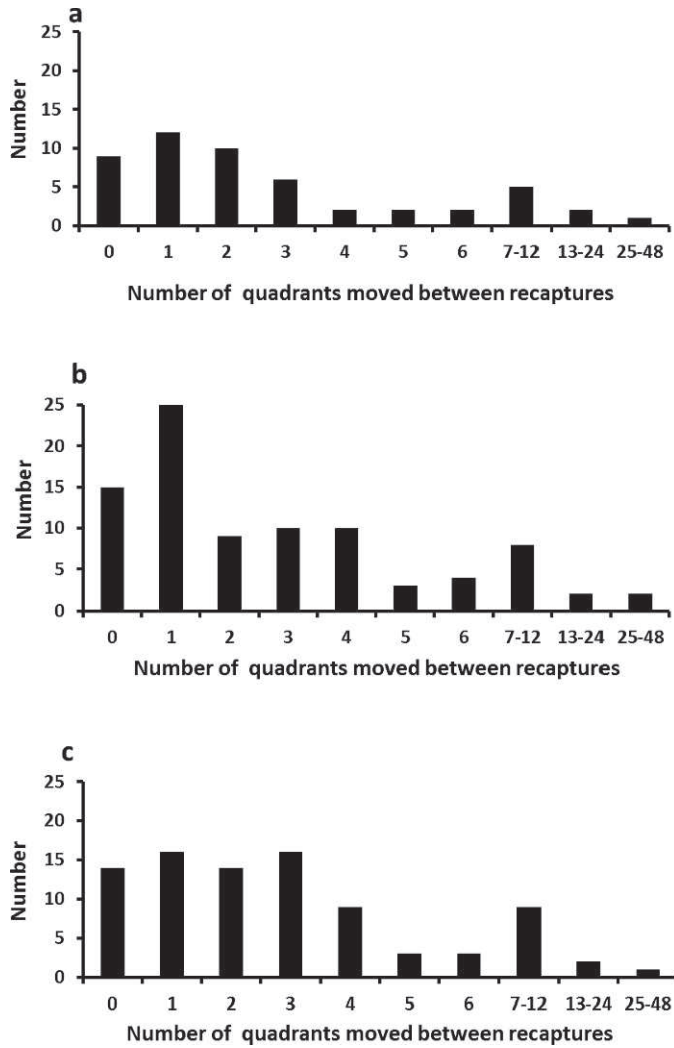


FIG. 1—Number of quadrants moved between recaptures of adult (sexes combined) Mediterranean geckos (*Hemidactylus turcicus*) on Smith Hall, McNeese State University, Lake Charles, Louisiana, for three intervals of recaptures: a) <30 days within a calendar year (mean of 3.6 ± 0.69 SE, ca. 5.0 m); b) >30 days within a calendar year (mean of 5.2 ± 0.92 SE, ca. 7.3 m); c) in succeeding years (mean of 4.8 ± 0.79 SE, ca. 6.7 m).

April 2003, was recaptured within the same quadrant on 6 June 2003, then moved 33 quadrants back to the quadrant of its first capture in 2002 by 15 September 2003. Similarly, one female moved 39 quadrants (54.6 m) between 29 August 2002 and 26 April 2003; it then moved back to the quadrant of its first capture by 13 July 2003. Another female moved 17 quadrants (23.8 m) between 23 September 2003 and 26 August 2004 but then moved back to the quadrant of its first capture by 8 September 2004.

There was no difference between adult males and females in the number of quadrants moved between captures (Yate's $\chi^2 = 30549$, $df = 2$, $P = 0.94$; Fig. 2). When the data were collapsed into short versus long moves, there was no significant difference between the

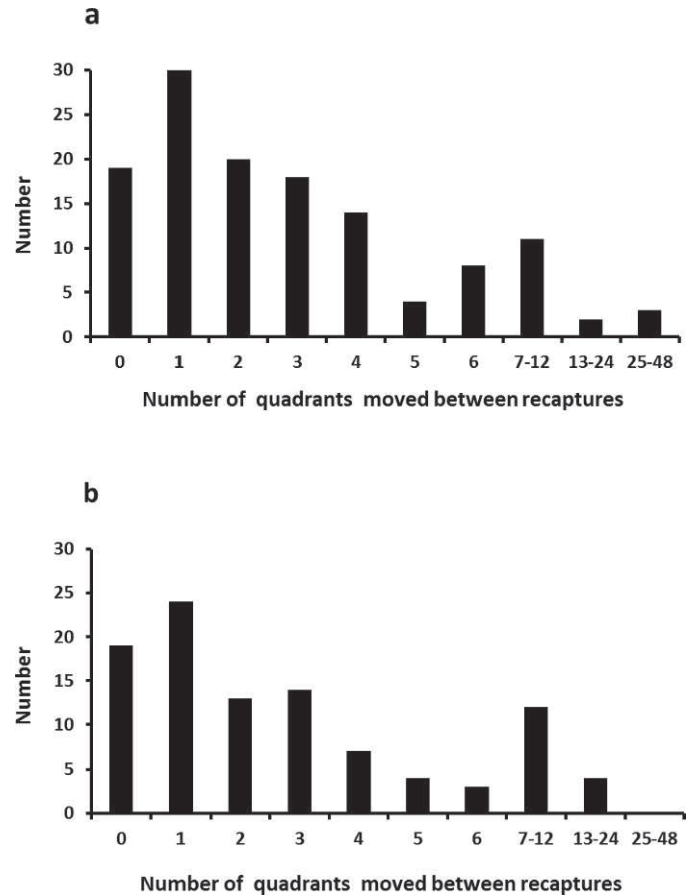


FIG. 2—Number of quadrants moved between recaptures of a) adult male (mean of 4.6 ± 0.67 SE, ca. 6.4 m) and b) adult female (mean of 4.8 ± 0.75 SE, ca. 6.7 m) Mediterranean geckos (*Hemidactylus turcicus*) on Smith Hall, McNeese State University, Lake Charles, Louisiana (data from all recapture intervals combined).

sexes regardless of whether the time between recaptures was <30 days (Pearson's $\chi^2 = 0.433$, $df = 1$, $P = 0.51$), was >30 days but within a year (Pearson's $\chi^2 = 0.687$, $df = 1$, $P = 0.41$), or occurred in succeeding years (Pearson's $\chi^2 = 1.818$, $df = 1$, $P = 0.18$; Table 1). These results suggest adult males and females have identical patterns of movement on Smith Hall.

The limited data for juvenile geckos suggest a different story; the mean number of quadrants juveniles moved between recaptures was 15.7 ± 4.05 (the equivalent of about 22 m). Juveniles make long moves of four or more quadrants proportionately more often than did adults (Table 1). However, for recaptures >30 days apart but within a year, the difference was not significant (Yate's $\chi^2 = 0.546$, $df = 1$, $P = 0.46$). For recaptures in succeeding years, the difference was statistically significant (Yate's $\chi^2 = 6.199$, $df = 1$, $P = 0.01$). A common pattern for juveniles was to make a single long move resulting in a new location on the building, and then subsequent recaptures (if any) would be within a few quadrants of the new location.

TABLE 1—Number of short-distance (zero to three quadrants) and long-distance (four or more quadrants) movements between recaptures for adult and juvenile Mediterranean geckos (*Hemidactylus turcicus*) on Smith Hall, McNeese State University, Lake Charles, Louisiana.

Interval of recaptures	Age and sex	Short-distance moves	Long-distance moves
<30 days	Adult males	20	9
	Adult females	17	5
>30 days	Adult males	31	20
	Adult females	29	13
	Juveniles	3	4
Succeeding years	Adult males	36	14
	Adult females	24	17
	Juveniles	2	8

Mediterranean geckos associate with each other infrequently on Smith Hall. Of the 578 geckos captured, only 120 (20.8%) were found in a pair (defined as two geckos being within 50 cm of each other) for which we were able to identify the sex and age-class of both individuals. Analysis of pairs of adults shows that the frequency of male-male, female-female, and male-female pairs did not differ from what is expected if males and females associate randomly (Table 2; Pearson's $\chi^2 = 0.22$, $df = 2$, $P = 0.90$). However when all pairs (including pairs involving juveniles) are considered, there is a statistically significant difference from expectation of random association in that there were fewer adult-juvenile pairs recorded than expected (Table 2; Yate's $\chi^2 = 8.09$, $df = 2$, $P = 0.02$). These data suggest juvenile geckos avoid adults, but that adult geckos of both sexes do not avoid, nor are they attracted to, each other.

Data collected in 2004 showed that 77 of 79 adult males (97.4%) and 86 of 88 adult females (97.7%) were found within 6 cm of the top of the outside wall of Smith Hall; the difference was not statistically significant (Yate's $\chi^2 = 0.158$; $df = 1$; $P = 0.691$). However, only 27 of 42 juveniles (64.3%) were found within 6 cm of the top of the wall; the other 15 were found ≥ 7 cm lower. The difference in height distribution between adults and juveniles was statistically significant (Yate's $\chi^2 = 41.139$; $df = 1$; $P < 0.001$) indicating that as a group juveniles tended to be found lower on Smith Hall than were adults.

DISCUSSION—Studies of populations of Mediterranean geckos have established that this species has low vagility: individuals rarely move from one building to another even when buildings are close to one another (Rose and Barbour, 1968; Selcer, 1986; Trout and Schwaner, 1994; Punzo, 2001; Locey and Stone, 2006). Our study suggests that adult male and adult female Mediterranean geckos generally show low vagility on the building they occupy. The distance between recaptures was usually three

TABLE 2—Observed versus expected composition of pairs (within 50 cm of each other when found) of Mediterranean geckos (*Hemidactylus turcicus*) on Smith Hall, McNeese State University, Lake Charles, Louisiana. Expected values are calculated based on a 50:50 ratio of adult males:adult females and a 78:22 ratio of adults:juveniles.

Pairs	Observed	Expected
Adults only		
Male-male	11	10.25
Male-female	21	20.50
Female-female	9	10.25
Adults and juveniles		
Adult-adult	41	36.50
Adult-juvenile	12	20.60
Juvenile-juvenile	7	2.90

quadrants (4.2 m) or less regardless of whether the time between recaptures was <30 days, >30 days, or succeeding years. These data suggest that, in general, adult Mediterranean geckos reside in a small area of 5–6 m on the side of a building and remain in that area not only during a single season but from year to year. Similar lack of long-distance movements on a building has been previously noted. Rose and Barbour (1968) found that 82% of recaptures were within 6 m of the original capture, and Selcer (1986) recorded an average movement between recaptures for geckos caught four or more times to be 0.93 m. However, neither of these studies gave data separately for males and females or for adults and juveniles. Klawinski (1991) found that the home range of geckos caught four or more times was ca. 4 m² and that there was no difference between males and females; however, the study involved intervals of recaptures of ≤ 6 weeks within a year. To our knowledge, the only data on distance moved between recaptures made in different years was an anecdotal reference in Rose and Barbour (1968) that some geckos (sex and age not stated) were not seen for over a year but, when recaptured, were caught within 75 cm of the original site of capture. Our study confirms that adult geckos generally move little between recaptures, that there is no difference in patterns of movement between adult males and females, and that adult geckos generally move very little from year to year.

However, our study documents a few instances of adult male and adult female geckos making long distance moves of 13 quadrants (18.2 m) or more (Fig. 1). Many of these moves are followed by much shorter moves suggesting that geckos may be moving from one area of the building to another and establishing a new home range. In other cases, geckos followed a long-distance move with a return long-distance move back to near the starting point. The purpose of these back and forth, long-distance moves is unknown; perhaps, it is associated with seeking new home ranges or sites with more arthropods for prey.

Unlike adults, juvenile geckos often make long-

distance moves. Part of this trend may be explained by the lack of recaptures of juveniles within 30 days. However, records for the other two intervals of recaptures, >30 days but within a year and in succeeding years, show juveniles make more long-distance moves than do adults (Table 1) especially from year to year. These results contrast with those of Klawinski (1991) who reported no difference in size of home range between adult and juvenile Mediterranean geckos. However, the long-distance moves we documented for juveniles occurred over longer intervals of time than those in Klawinski (1991). Several studies have noted that juvenile Mediterranean geckos are occasionally found between buildings (Rose and Barbour, 1968; Gomez-Zlatar and Moulton, 2005; Meshaka et al., 2006; Locey and Stone, 2008), leading to the hypothesis that movements by juveniles are the main means of dispersal from one building to another (Locey and Stone, 2008). The long-distance movements between recaptures found in our study may be evidence of dispersal from one area of Smith Hall to another. On the few occasions we recaptured a juvenile after it made a long-distance move, the subsequent recaptures were typically within a few quadrants of the point where the long-distance move ended, suggesting that the long-distance movements of juveniles enable them to colonize a new area on Smith Hall. Presumably, the paucity of recaptures of juveniles reflects either dispersal of juveniles to other buildings (which we did not survey) or high mortality of juveniles.

Most adult Mediterranean geckos on Smith Hall were found alone suggesting that geckos space themselves and interact little when active. However, about 20% of the geckos were part of a pair in which two lizards were within 50 cm of each other. Considering adult geckos only, the results we obtained are similar to the 19.2% of adult geckos found in pairs or groups in a population in Florida by Gomez-Zlatar and Moulton (2005). Groupings of adult geckos have been hypothesized to be for reproduction (Klawinski, 1991; Gomez-Zlatar and Moulton, 2005). Other studies have reported that adult male geckos can act aggressively toward each other (Rose and Barbour, 1968; Briggs, 2002). These observations suggest we should have recorded more male-female pairs, fewer male-male pairs, or both. Neither result occurred; the number of different-sex and same-sex pairs of geckos did not differ from what was expected if males and females associated with each other randomly (Table 2). This suggests that association of adult geckos on Smith Hall is not strongly influenced by reproduction or territorial behavior. Support for this hypothesis is provided by anecdotal observations of geckos on another building on the campus of McNeese State University. The density of geckos on the other building was much higher than on Smith Hall (Hibbs et al., 2004), and large numbers of adult geckos were commonly found in close proximity to one another on the west side of the other building where banks of lights attracted enormous numbers of flying

insects from a nearby bayou. Presumably geckos aggregated on the west side of the other building to take advantage of the abundant food located there, something that is made possible by the lack of strong territorial behavior in geckos. On Smith Hall, where lights and presumably food are evenly distributed around the building, adult geckos are not concentrated in any one place.

Most juvenile geckos were found alone, >50 cm from another gecko. However, similar to the adults, about 20% of juveniles were found in pairs. This is a substantially higher percentage than the 1.4% of juveniles found in pairs by Gomez-Zlatar and Moulton (2005) in Florida. The difference may be attributable to the density of geckos being higher at our study site. Smith Hall is 4 m high and 135 m in circumference compared to the 50 one-story walls of 4 m in height sampled by Gomez-Zlatar and Moulton (2005). Juveniles were paired with adults significantly less frequently than expected if juveniles and adults associated randomly (Table 2). Furthermore, 2004 data show that juveniles tend to be found lower on the wall of Smith Hall than are adults. Taken together, these results suggest juvenile geckos avoid areas where adult geckos are located. This hypothesis has been advanced by many authors (Gomez-Zlatar and Moulton, 2005; Williams and McBrayer, 2007; Locey and Stone, 2008) and has been supported by results of staged behavioral encounters involving juveniles and adults in which juveniles attempt to avoid adults to escape aggressive or even cannibalistic attacks (Briggs, 2002; Locey and Stone, 2008).

Overall, the data we collected at Smith Hall show that, when Mediterranean geckos are juveniles, they usually move to places not occupied by adults, probably to avoid aggression or cannibalism. Juveniles often make long-distance moves on a building (our data) or to other buildings (Locey and Stone, 2008) to locate a suitable area to occupy. Once a juvenile becomes an adult, it remains near its home area, probably throughout its life; only rarely do adult geckos move long distances from their home areas, and, when they do, they may move back again. Within their home range, adult males and females are generally solitary when active but do associate with members of the same or opposite sex on occasion, though these pairings do not appear to be strongly driven by reproduction or territorial behavior.

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APPENDIX 1—Dates of collection of Mediterranean geckos (*Hemidactylus turcicus*) for each of the years of the study at Smith Hall, McNeese State University, Lake Charles, Louisiana.

Year	Dates of collection
1999	1 April, 1 May, 7 June, 1 July, 2 August, 4 September, 1 November
2000	16 February, 4 March, 31 May, 28 August, 6 September
2002	5 May, 2 June, 2 July, 7 and 29 August, 12 September, 14 October
2003	26 April, 6 June, 8 and 17 July, 15 and 24 August, 2 and 15 September, 14 October
2004	21 April, 27 May, 15 June, 19 July, 16 and 26 August, 8, 15, 22, and 30 September
2005	21 and 29 May, 8 and 14 June, 4 August, 15 September, 11 November