this time period Kimmich marked approximately 100 Bog Turtles with small drill holes in the marginal scutes at one of these sites. Kimmich worked independently on this study, but provided his data and volunteer services to The Nature Conservancy after it acquired this property in 1989. Carl Ernst conducted research on Bog Turtles at this site between May 1982 and May 1989 and marked several additional Bog Turtles with square and triangular notches. Ernst also contributed data to the Conservancy for this analysis. In 1992 the Nature Conservancy, using staff and contractors, reinitiated mark/recapture surveys and conducted a short radio telemetry study at the site in 1992. Turtles marked during and after 1992 were marked exclusively with triangular notches in the marginal scutes. Turtles were sexed, and measurements of the carapace length and width, plastron length and width, and shell height were recorded. Shell wear and injuries were also noted at subsequent captures. These characteristics, as well as the configuration of markings on the marginal scutes, were used for the data comparison. At least 29 turtles (9 males and 20 females) that were marked as adults prior to 1982 were recaptured after 1992. Positive identification of some of these turtles has not been made because of erosion of holes to the edges of the scutes, the possible addition of marks to some turtles, predator damage to the marginal scutes, and drill holes filling with mud, making their detection difficult. Fourteen turtles were confirmed to be positive matches between the two data sets. Three of these turtles were recaptured in 1993, 1994 and 1997 respectively, and eleven of these turtles were recaptured after 2000. The most recent of these captures was made during the 2008 field season.

The average annual growth rate of Bog Turtles is rapid during the first years after hatching, and gradually decreases as the turtle ages. Ernst (1977. Herpetologica 33: 241-246) documented annual growth rates of 34.6 percent at hatchling with a gradual decline to 5.2 percent at age twelve, indicating that Bog Turtles reach their maximum size at some time after age 12. Comparison of Kimmich's data and that collected by The Nature Conservancy reveals an average size variation of 0.56 mm between initial and subsequent captures, indicating that these turtles were fully grown adults when first captured, and were presumed to be at least thirteen years old at first capture. Counting the number of scute annuli appears to be a reasonable method of determining approximate ages of Bog Turtles up to about 10 to 15 years, after which time growth may nearly cease and their burrowing habit will begin to wear away the annuli. While young Bog Turtles have distinct annuli, the annuli on the shells of turtles that were calculated to be more than 40 years old had been worn completely smooth. The earlier data did not note annuli count or wear and it is possible that several of these turtles are considerably older than the calculated ages. Many factors influence the speed and amount of wear on the shell, and shell wear may vary greatly between sites.

The ages of turtles in these studies were estimated using the aforementioned criteria. One turtle is estimated to be at least 25 years old, two turtles to be at least 35 years old, seven turtles to be at least 38 years old, three turtles to be at least 45 years old, and one turtle is estimated to be at least 49 years old. Notably, one female whose age is calculated to be more than 48 years old had all toes missing on both left feet at both captures, and thus had survived for at least 35 years in the wild in this condition.

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GOPHERUS AGASSIZII (Desert Tortoise). **MORTALITY.** In 1990, populations of *Gopherus agassizii* in the Mojave Desert were listed as Threatened under the US Endangered Species Act (Fish and Wildlife Service 1990. Federal Register 55:12178–12191). This action was deemed necessary because of the increase in habitat loss and degradation in the Mojave Desert due to the rapid growth of many cities and suburban communities (Boarman and Beaman 2002. The Sensitive Plant and Animal Species of the Western Mojave Desert. U.S. Geological Survey, Western Ecological Research Center, Sacramento, California). Although anthropogenic activities undoubtedly contribute to *G. agassizii* mortality, many natural causes of mortality have also been reported. Many of the natural dangers to *G. agassizii* appear to affect young tortoises more than older individuals. Among the many threats are predation, parasites, disease, dehydration, and being crushed when dens collapse (Luckenbach 1982. *In* R. B. Bury [ed.], North American Tortoises: Conservation and Ecology, pp. 1–37. Wildl. Res. Rep. 12, U.S. Fish and Wildlife Service, Washington, DC). Here we report the first observations of *G. agassizii* mortality caused by individuals falling into and being trapped in rock fractures on a basalt flow.

The habitats where *G. agassizii* can be found in the Mojave Desert vary from sandy valleys filled with Creosote Bush (*Larrea tridentata*), to rocky bajadas and hillsides (Riedle et al. 2008. Copeia 2008:414–420). Studies of *G. agassizii* in the Sonoran Desert suggest that preferred den sites may occur in rugged terrain with high densities of boulders (Barrett 1990. Herpetologica 46:202–206). Several reserves have been established with the aim of protecting critical tortoise habitat. The Red Cliffs Desert Reserve, Washington Co., Utah, was established in 1996 to protect a large tract of desert habitat suitable for *G. agassizii* and other desert wildlife. This reserve contains a diverse suite of habitats, from Blackbrush (*Coleogyne ramosissima*) covered mesas, to sandstone and basalt rock outcrops, to creosote bush flats.

On two occasions on separate basalt flows in the Red Cliffs Desert Reserve, carcasses of adult *G. agassizii* were found. These individuals had apparently fallen headfirst into fractures in the rocks, become stuck, and died from exposure, likely from overheating. Both individuals had their hind legs in the air and their forelegs and head dangling down into the crack. No noticeable marks were found on the tortoise carcasses that would suggest they were killed and placed in the cracks by predators. It is unknown what caused the tortoises to wander onto the basalt flows.

This finding is interesting because tortoises in the Red Cliffs Desert Reserve often traverse steep sandstone outcrops with little difficulty (pers. obs.). It is likely a rare event for a tortoise to be trapped by falling into a crack in the rocks, yet given that two individuals were trapped and died in a similar manner, this may be a more common event than previously thought.

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HYDROMEDUSA MAXIMILIANI (Brazilian Snake-necked Turtle). **ALGAL COLONIZATION.** Algae of the genus *Basicladia* (Chlorophyta, Cladophoraceae) are often noted growing on the shells of freshwater turtles, which offer the algae an attractive substrate for colonization (Edgren et al. 1953. Ecology 34:733–740; Ducker 1958. Hydrobiology 10:157–174; Semir et al. 1988. Cienc. cult. 40:885–888). The relationship between algae and turtles has been described as commensal (assuming the turtles receive little or no benefit from the algae) or mutualistic (the turtle using the algae as camouflage, perhaps while foraging, and the algae using the turtle as a safe and mobile substrate) (Edgren et al., *op. cit.*; Niel and Allen 1954. Ecology 35:581–584; Proctor 1958. Ecology, 39:634–645; Dixon 1960. Texas J. Sci. 12:36–38).

In November 2004 we captured seven *Hydromedusa maximiliani* in Reserva Biológica Municipal Santa Cândida (21.6888889°S, 43.3444444°W, 770 m elev.), Juiz de Fora, Minas Gerais state, Brazil. Algae on the turtle's shells were collected with a scalpel and fixed in Transeau and formaline 4% solution. Biometric analysis suggested that six of these specimens were adults, with an average maximum carapace length of 150.60 ± 12.51 mm, and one was considered a juvenile, with a carapace length of 128.60 mm. All specimens had *B.* cf. *chelonum* adhering to their carapaces, on the vertebral plates, principally on the anterior and posterior regions, and on the marginal plates. The same distribution of algae was also noted for the chelids *Phrynops geoffroanus* and *Hydromedusa tectifera* from Brazil (Semir et al. 1988. Cienc. Cult. 40:885–888). The algae occurred mainly in the anterior and posterior regions of the carapace on the marginal scutes, there being little algae on the costal and central scutes.

A possible correlation between the feeding habits of turtles and frequency of epizoophyte growth is supported by the observation that carnivorous species that ambush or actively hunt their food may be more often subject to algal growth. Examples include include the chelydrids *Macrochelys* and *Chelydra*, kinosternids *Sternotherus* and *Kinosternon*, and the emydids *Deirochelys* and *Emys*. all of which hunt active prey, such as frogs, fish and aquatic insects (Niel and Allen 1954. Ecology 35:581–584). *H. maximiliani* has similar predatory feeding habits (Souza and Abe 1995. Chel. Cons. Biol. 1:320–322). The presence of algae on the carapace of this species may serve as protection against predators but would also decrease detection by prey. This record of *B.* cf. *chelonum* colonizing *H. maximiliani* is apparently the first report of the algae growing on this turtle species and supports a possible mutualistic relationship between the algae and the turtle host.

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MACROCHELYS TEMMINCKII (Alligator Snapping Turtle). **AERIAL BASKING.** *Macrochelys temminckii* is rarely observed out of the water. Terrestrial activity is typically limited to nesting females and hatchlings traveling from nest to water. Only two dead-on- road individuals are known (Ewert et al. 2006. *In* Meylan [ed.], Biology and Conservation of Florida Turtles, pp. 58–71. Chelon. Res. Monogr. No. 3, 376 pp.). Apparently, only four instances of observed or inferred aerial basking have been reported: on a log in Texas (Ewert 1976. Herpetologica 32:150–156; also see Ewert et al., *op. cit.*), on a fallen tree in Texas (Farr et al. 2005. Herpetol. Rev. 36:168), on a basking trap in Mississippi (Shelby and Jenson 2002. Herpetol. Rev. 33:304), and an adult basking on a river bank, also in Mississippi (Selman et al. 2009. Herpetol. Rev. 40:79). Here I report aerial basking of *M. temminckii* on land in Florida.

The observation was made as part of a long-term (since 2003) ecological study of *Macrochelys temminckii* in northern peninsular Florida. On 19 October 2008 at 1300 h, I found a juvenile (18.6 cm CL, 1.68 kg) *M. temminckii* on the northern bank of the Santa Fe River, Columbia Co. Florida, 1.7 km upstream from the US 27 bridge. This turtle was basking in partial sunlight at least 2 m from the water's edge. The turtle was found on sandy soil and appeared completely dry. Air temperature and water temperature (10 cm depth) were 23.3 and 22.5°C, respectively. Upon capture, this turtle was found to have been originally marked with a passive integrated transponder (PIT) on 9 July 2008, and had traveled ca. 2.5 km from the initial capture site. Additionally, I counted over 100 leeches that were attached to the turtle. This is the first report of aerial basking in Florida. Aerial basking in this species is certainly rare, but may occur sporadically in response to thermoregulatory needs of individual turtles.

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PHRYNOPS HILARII (Hilaire's Side-necked Turtle). **FEEDING BEHAVIOR.** The freshwater chelid turtle *Phrynops hilarii* is one of the most abundant chelonians in Rio Grande do Sul state, Brazil. Research by the Chelonia-RS Project in the lake at Moinhos de Vento Park, Porto Alegre city (30.0269444°S, 51.2011111°W) has been carried out intermittently since 2003. Between August and December 2008, 29 *P. hilarii* were captured and marked. Straight-line carapace length ranged between 113 and 387.2 mm (mean = 280.21; SD = 81.2). In the lake, which is ca. 4675 m^2 in area and has a maximum depth of 1.5 m, there are four other chelonian