the diet of *U. brucei* was not unexpected. However, this is the first record of a prey item for *U. brucei*, which was first discovered in 2007 (Camp et al., *op. cit.*). Additionally, we also observed captive adult *U. brucei* feeding on newly hatched house crickets (*Acheta domestica*) and a variety of collembolan species.

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ANURA — FROGS

DENDROPSOPHUS RUBICUNDULUS **(Lagoa Santa Treefrog). PREDATION.** Amphibians are common prey for a great variety of vertebrates (Toledo et al. 2007. J. Zool. 271:170–177), invertebrates (Toledo 2005. Herpetol. Rev. 36:395–400), and carnivorous plants (Duellman and Trueb 1994. Biology of Amphibians. McGraw-Hill, Baltimore and London. 670 pp.). Belostomatids are medium to large-sized predaceous aquatic insects that occupy many types of aquatic habitats in tropical and temperate regions (Lauck and Menke 1961. Ann. Entomol. Soc. Amer. 54:644–657). *Dendropsophus rubicundulus* is a small tree frog that inhabits the Cerrado biome and occurs on the emergent or marginal herbaceous vegetation in permanent and temporary ponds (Bastos et al. 2003. Anfíbios da Floresta Nacional de Silvânia, Estado de Goiás. Goiânia, 82 pp.; Napoli and Caramaschi 1999. Bol. Mus. Nac., N.S., Zool. Rio de Janeiro 407:1–11). Here, we report the predation of an adult *D. rubicundulus*, by an adult water bug, *Lethocerus annulipes*.

At 2118 h on 07 January 2012, during the field work at the municipality of Chapadão do Céu, state of Goiás, Brazil (18.234944°S, 52.606222°W; datum SAD 69), we observed an adult *L. annulipes* feeding on an adult male *D. rubicundulus* (SVL = 22.28 mm) in a permanent pool. During the observation, the water bug remained submerged in the water to a depth of approximately 4 cm, and was feeding while attached to the frog by its venter. Predator and prey were collected and are housed at the Coleção Zoológica da Universidade Federal de Goiás (ZUFG), Goiânia, Goiás, Brazil (ZUFG 7334). Although there have been some reported cases of predation of amphibians by belostomatids, new cases may help in understanding the relationships between these predators and their anuran prey (Toledo 2005, *op. cit.*), and this note represents the first documentation of a belostomatid predating *D. rubicundulus*.

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HYLA CINEREA **(Green Treefrog). DORSAL SPOTS.** *Hyla cinerea* have a uniformly white venter and a uniformly green dorsum. Many individuals show a white lateral stripe, and they may also show small white or yellow spots on their dorsum (Conant and Collins 1991. A Field Guide to Amphibians and Reptiles of Eastern and Central North America. Houghton Mifflin Company, New York. 640pp.). Here we provide information on the prevalence, number, size and pattern of geographic variation of these dorsal spots.

We examined 60 mature female *H. cinerea* from multiple locations within Jasper Co. Texas (N = 17), Rapides Pa. Louisiana (N = 21), Perry Co. Alabama (N = 13), and Ben Hill Co. Georgia, USA (N = 9). We took digital pictures of each frog, from which we (i) counted the number of spots of each frog, and (ii) measured the size (area in mm^2) of the largest spot of each frog. Variation in spot number ranged from 0–37 spots (Fig. 1), with the majority of frogs (98%) having at least one spot. Frequently (85%), at least one spot was bordered by a dark line (Fig. 1B, D). The same individual may have spots with and without a dark border (Fig. 1B). Spot size varied from 0.09–3.65 mm^2 (mean ± SD: 0.78 ± 0.6 mm^2). Individual frogs can have only small spots, only large spots, or a mixture of spot sizes. Average number of spots did not vary across sites (ANOVA: $F_{3,59} = 0.53$; $p = 0.66$). There was geographic variation in spot size, however: frogs from Texas had

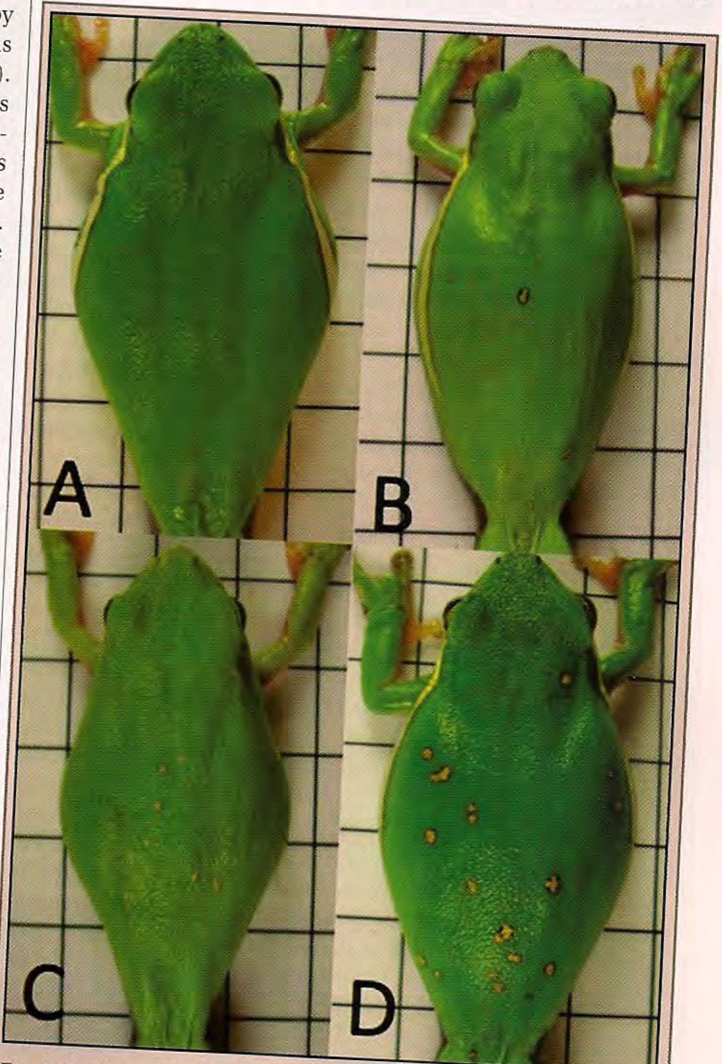

FIG. 1. Variation in dorsal spot number and size in *Hyla cinerea*. A) Individual with two very small spots. B) Individual with small and large spots, only some of which are bordered by a dark margin. C) Individual in which all spots are without dark border. D) Individual in which all spots show a dark border.

larger spots than those from the other three study sites (ANOVA: $F_{3,59} = 4.74$; $p = 0.005$).

To examine whether spots remained constant over time, we repeated the measurements after 3 months (N = 38). Both the number and the size of spots varied over time. Spot number remained constant in 36% of frogs, decreased in 32%, and increased in 32%. Spot size remained constant in 6% of frogs, decreased in 42%, and increased in 52%. Color pattern thus does not lend itself as a characteristic to be used in pattern mapping, a non-invasive method of identifying individuals for long-term studies (Heyer et al. 1994. Measuring and Monitoring Biological Diversity: Standard Methods for Amphibians. Smithsonian Institution Press, Washington, DC. 384 pp.). For spots to be useful for individual identification, they must be unique to each individual and they must remain relatively unchanged over time, and in *H. cinerea* neither spot number nor size fulfilled those criteria. While morphology and mating calls of *H. cinerea* show geographic variation (Höbel and Gerhardt 2003. Evolution 57:894–904), the color pattern (lateral stripe length; spots) is highly variable within populations, but not always different among populations (Aresco 1996. Am. Midl. Nat., 135: 293–298; this study). *Hyla cinerea* is not the only species showing yellow or white spots (also termed dots, warts or pustules because of the elevated shape they sometimes can take). While they appear to be absent from other species of North American treefrogs with a green dorsum, such as *H. andersonii* or *H. squirella*, they do occur in some individuals of *H. gratiosa*, the sister species to *H. cinerea* (pers. obs). Similar spots can also be found in members of the Neotropical genera *Agalychnis* and *Phyllomedusa* (Savage 2002. The Amphibians and Reptiles of Costa Rica: a Herpetofauna between Two Continents, between Two Seas. University of Chicago Press, Chicago, Illinois. 954 pp.). Origin and function of these spots are unknown.

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***HYLA VERSICOLOR* (Eastern Gray Treefrog). LACRIMAL SPOT.** *Hyla versicolor* commonly have a bright spot under the eye, a characteristic they share with *H. chyrsoscelis* and *H. avivoca* (Conant and Collins 1991. A Field Guide to Amphibians and Reptiles of Eastern and Central North America. Houghton Mifflin Co., New York. 640 pp.). This spot is often quite conspicuous in this otherwise well-camouflaged treefrog (Fig. 1). Here we provide information on the prevalence, size, color, and relative brightness of the lacrimal spot, as well as on patterns of sexual dimorphism.

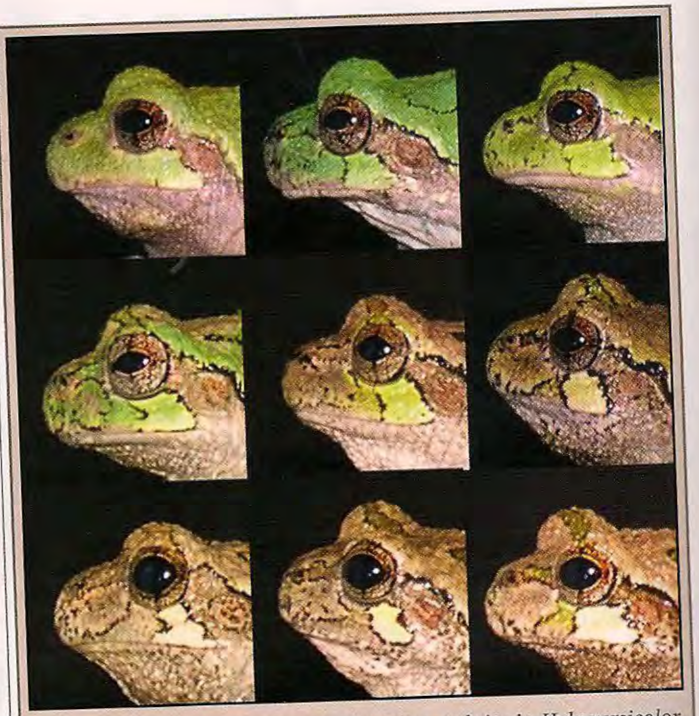

FIG. 1. Variation in lacrimal spot coloration and size in *Hyla versicolor*.

We examined 26 female and 30 male *H. versicolor* treefrogs from a pond near the University of Wisconsin-Milwaukee Field Station in Saukville, Wisconsin, USA (43.39000°N, 88.03000°W; datum: WGS 84). We took digital pictures of each frog (lateral view); each picture included a size reference, and a light and dark standard. We then scored the coloration of the spots (as either white or greenish), and used the program ImageJ (NIH, Maryland, http://imagej.nih.gov/ij/) to measure (i) the SVL (mm), (ii) the lacrimal spot size (area in mm^2), (iii) the lacrimal spot brightness, and (iv) the brightness of the dorsal color.

All except one frog had a clearly defined lacrimal spot. Lacrimal spot size was different between the sexes ($F_{1,52} = 4.16$; $p = 0.047$), with females having relatively larger spots than males (mean ± SD; 10.0 ± 2.2 vs. 7.8 ± 1.3 mm^2; SVL was used as a covariate in the model to account for sexual size dimorphism). Spot coloration was roughly split between white and greenish, and there was no difference between the sexes ($\chi^2 = 0.29$; $p = 0.59$). The absolute brightness of the lacrimal spot was also not different between the sexes ($F_{1,52} = 0.37$; $p = 0.54$). In both sexes the dorsum was darker than the lacrimal spot; contrast (the difference between dorsal brightness and lacrimal spot brightness) was larger in males, but this difference was not statistically significant ($F_{1,54} = 2.80$; $p = 0.099$).

The function of the lacrimal spot in this and other frog species is currently unknown. We suggest several hypotheses that might warrant further investigation. First, because of its conspicuousness the spot may function in intraspecific communication. Signals used in mate choice frequently show sexual dimorphism (Andersson 1994. Sexual Selection. Princeton University Press, Princeton, New Jersey. 599 pp.), and we did find some aspects of the lacrimal spot that differed between the sexes. Second, the lacrimal spot may be involved in camouflage via disruptive patterning, and help draw attention away from the body outline of the frog, or disguise the eye (Stevens and Merilaita 2009. Phil. Trans. R. Soc. B. 364:481–488). Finally, the bright spot might aid in nocturnal vision. Professional baseball and football players use eye black grease to reduce glare and improve contrast sensitivity in conditions of sunlight exposure (DeBroff and Pahk 2003. Arch Ophthalmol. 121:997–1001), and the opposite effect may occur with bright lacrimal spots at night.

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***HYPSIBOAS SEMILINEATUS* (Perereca Semilineada). BROMELIAD ASSOCIATE.** Many frogs use bromeliads as refuges (Peixoto 2005. Rev. Univers. Rural 17: 75–83). Most bromeliads have the capability to store rainwater between the leaves and are abundant across the sandy coastal plain of Brazil. Here we report