the assumption of Briggs and Miller (1960), later confirmed by Miller based on examination of the Paris specimen, that the population from Río Chapalagana is *G. fluviatilis*.

Resumen—Se confirma la presencia de *Gobiesox fluviatilis* in el Río Chapalagana en el Estado de Zacatecas, también se reafirma la hipótesis de Briggs y Miller (1960) acerca de que las poblaciones por ellos colectadas en otros estados, pertenecen a la misma especie colectada por Pellegrin en 1901.

We are grateful to O. J. Polaco for donating the specimen and for field data used in this study, as well as for his comments and observations. We also thank 2 anonymous reviewers for their comments on the paper. We thank Madame Beauchot for the loan of Pellegrin's specimen and the United States National Science Foundation grant DEB 80-02017.

Literature Cited

Briggs, J. C. 1951. A review of the clingfishes (Gobiesocidae) of the eastern Pacific with descriptions of new species. Proceedings of the California Zoological Club 1:57–108.

Briggs, J. C. 1955. A monograph of the clingfishes (Order Xenopterygii). Stanford Ichthyological Bulletin 6:1–224.

Briggs, J. C., and R. R. Miller. 1960. Two new freshwater clingfishes of the genus *Gobiesox* from southern Mexico. Occasional Papers of the Museum of Zoology, University of Michigan 616:1–15.

Burr, B. M., and D. G. Buth. 1977. New localities for the rare Mexican clingfish, *Gobiesox fluviatilis*, from Durango and Chihuahua. Southwestern Naturalist 22:125–128.

Espinosa, P. H., and J. L. Castro-Aquirre. 1996. A new freshwater clingfish (Pisces: Gobiesocidae) from Baja California Sur, Mexico. Bulletin of the Southern California Academy of Sciences 95:120–126.

Espinosa, P. H., P. Fuentes Mata, and J. L. Castro-Aguirre. 1987 (1988). Presencia de *Gobiesox fluviatilis* Briggs y Miller (Pisces: Goiesociformes) en el río Cuitzmala, Jalisco, México y sus implicaciones zoogeográficas. Anales del Instituto de Biología, Universidad Nacional Autónoma de México. Serie Zoología 58:727–734.

Miller, R. R., and M. L. Smith. 1986. Origin and geography of the fishes of central Mexico. In: Hocutt, C. H., and E. O. Wiley, editors. The zoogeography of North American freshwater fishes. John Wiley & Sons, New York. Pp. 487–517.

Nelson, J. S. 1994. Fishes of the world, Third ed. John Wiley & Sons, New York.

Pellegrin, J. 1901. Poissons recueillis par M. L. Diguet dans l'État de Jalisco (Mexique). Bulletin du Muséum National D'Histoire Naturelle, Paris 7:204–207.

Submitted 5 April 1999. Accepted 29 December 1999. Associate Editor was David R. Edds.

THE SOUTH AMERICAN SUCKERMOUTH ARMORED CATFISH, *PTERYGOPLICHTHYS ANISITSI* (PISCES: LORICARIIDAE), IN TEXAS, WITH COMMENTS ON FOREIGN FISH INTRODUCTIONS IN THE AMERICAN SOUTHWEST

Leo G. Nico* and R. Trent Martin

United States Geological Survey, Florida Caribbean Science Center, 7920 N.W. 71st Street, Gainesville, FL 32653-3071 (LGN)
6310 Overdale, Houston, Texas 77087 (RTM)
**Correspondent: Leo_Nico@usgs.gov*

Fishes of the family Loricariidae, commonly known as suckermouth armored catfishes, are bottom-dwelling species that are naturally distributed in fresh waters of South and Central America. The family is quite diverse with more than 600 described species. At least 2 loricariids of the genus *Pterygoplichthys* (subfamily Hypostominae) have established populations in the United States, *P. multiradiatus* in Florida and Hawaii and *P. disjunctivus* in Florida (Fuller et al., 1999). An introduced population of *P. multiradiatus* is also established in Puerto Rico (Bunkley-Williams et al., 1994). Commonly known as sailfin catfishes, members of the genus are characterized by large dorsal fins with 9 or more (usually 10+) dorsal-fin rays (Armbruster, 1997). Several other loricariid catfishes also have breeding populations in warm-water sites of the United States. However,

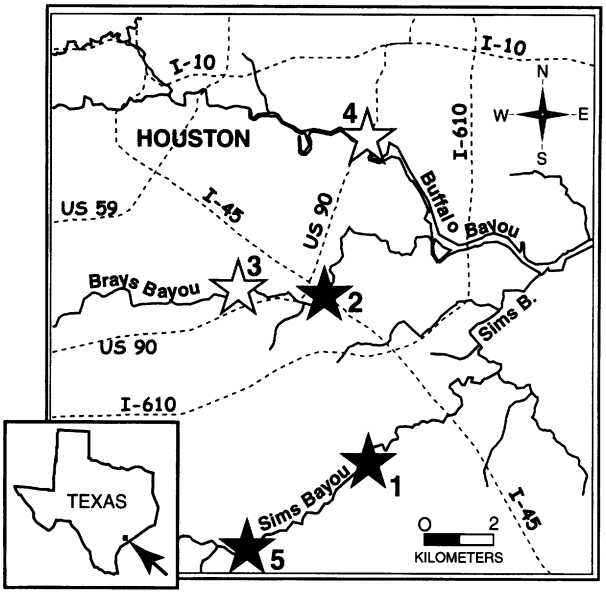

FIG. 1—Map of waterways and major roadways in a portion of Buffalo Bayou drainage, Harris Co., Texas, showing sites where suckermouth armored catfish have been captured or observed (stars; 1, Sims Bayou upstream of State Highway 35 at Hemingway Avenue; 2, Brays Bayou near Interstate 45; 3, Brays Bayou at MacGregor Park; 4, Buffalo Bayou near Wayside Drive; 5, Sims Bayou near Anna Held Road). Solid stars represent records of *P. anisitsi* supported by museum voucher specimens; other records are unconfirmed.

there are only 3 documented cases of established populations of loricariids in the American Southwest, and all are based on records of 1 or more unidentified species assignable to the genus *Hypostomus*. Two populations are known from Texas, 1 occurring in the headwaters of the San Antonio River, Bexar Co., and another in Comal Springs, Comal Co. (Barron, 1964; Hubbs et al., 1978, 1991; Whiteside and Berkhouse, 1992). Another unidentified *Hypostomus* population is known from Nevada in Indian Spring, a thermal spring in Clark Co. (Courtenay and Deacon, 1982; Fuller et al., 1999).

This note documents the occurrence of an apparently reproducing nonindigenous population of the South American loricariid catfish *Pterygoplichthys anisitsi* recently discovered in the Buffalo Bayou drainage, Harris Co. (Houston area), southeastern Texas (Fig. 1). During the period July 1998 to November 1999, one of the authors (RTM) captured 29 *P. anisitsi* (120 to 502 mm total length, TL) with a cast net in Sims Bayou just upstream from State Highway 35 at Hemingway Avenue (29°40′05″N, 95°17′51″W), ca. 13 km upstream from the stream's confluence with Buffalo Bayou. Additional *P. anisitsi* were observed at the site, but not captured. Two of the larger *P. anisitsi* (479 mm TL and 470 mm TL), taken in June to July 1998, were gravid females. The smallest specimen (120 mm TL) was captured on 30 June 1999. The largest specimen captured was a gravid female taken 17 May 1999; live it measured 502 mm TL and 380 mm standard length, SL. On 6 June and 18 September 2000, armored catfish were taken from an upstream site of Sims Bayou near Anna Held Road (29°38′45″N, 95°20′05″W; K. K. Schlicht, Texas Parks and Wildlife Department, pers. comm.). We were sent 3 specimens (ca. 260 to 290 mm SL) from the September collection, and we identified all as *P. anisitsi*.

During the past few years, armored catfish have been reported from several other sites in the Buffalo Bayou drainage. M. J. Kelly (Texas Natural Resource Conservation Commission, pers. comm.) reported the occurrence of suckermouth armored catfish in nearby Brays Bayou, a tributary of Buffalo Bayou in the south Houston area ca. 5 km north of the Sims Bayou site. He observed the catfish gulping air in the bayou near the Interstate 45 crossing shortly after a large fish kill event in July 1998; Kelly also sight-

ed a possible suckermouth armored catfish in Brays Bayou at MacGregor Park during the same period. Based on that information, the second author visited Brays Bayou (ca. 29°42′43″N, 95°18′40″W) on 17 May 1999 and successfully netted a single *P. anisitsi* (390 mm TL, 285 mm SL). Texas Parks and Wildlife Department biologists captured 2 specimens (356 and 458 mm TL) originally identified as "plecostomus" on 10 January 1996 during fish survey work in the main channel of Buffalo Bayou, Houston (M. Webb, Texas Parks and Wildlife Department, pers. comm.). Their capture site was at an outflow from a wastewater plant near Wayside Drive (29°45′14″N, 95°17′58″W) and is ca. 10 km north of the Sims Bayou capture site (Fig. 1). We presume the species involved is *P. anisitsi*; however, because no specimens were preserved, the identity of those fish is unconfirmed. If valid, the Buffalo Bayou record indicates *P. anisitsi* is fairly widespread and has been in Texas waters since at least the beginning of 1996 and probably earlier.

To our knowledge, the Texas records represent the first documented case of *P. anisitsi* in open waters outside South America and also provide the first evidence for reproduction by any species of *Pterygoplichthys* in the American Southwest. Voucher specimens of the Texas *P. anisitsi* are deposited in fish collections of the Texas Cooperative Wildlife Collection at Texas A&M University (TCWC 10815.01 [1]) and the Florida Museum of Natural History (UF 111706 [1]; 111707 [1]; 111708 [1]; 111709 [1]; 114798 [3]). The source of the Texas introduction is unknown, but is likely the result of an aquarium release. Several members of the genus are popular in the aquarium trade. *Pterygoplichthys anisitsi,* or a closely-related species, is sold in local pet stores in the Houston area as plecostomus. Plecostomus (or pleco) is a name loosely applied by hobbyists to many suckermouth armored catfishes of the subfamily Hypostominae, especially *Hypostomus.* In the aquarium trade, *P. anisitsi* is sometimes given the common name snow-king plecostomus (J. W. Armbruster, Auburn University, pers. comm.). We suggest that, in view of its native distribution, it be called the southern sailfin catfish.

Pterygoplichthys anisitsi belongs to the *P. multiradiatus* group (*Liposarcus* sensu Weber, 1991, 1992) and is native to the Paraná and Uruguay river drainages (La Plata River basin) in south-central South America (Weber, 1992). The species was originally described by Eigenmann and Kennedy (1903). Like all loricariid catfishes, *P. anisitsi* has a body covering of bony plates and a ventral mouth modified into a sucking disk. Members of the genus *Pterygoplichthys* are somewhat distinct in having 9 to 14 dorsal fin rays. Texas specimens we examined (n = 14) have 11 to 12 dorsal fin rays (counts do not include the dorsal spines). In contrast, *Hypostomus* and most other loricariids have 7 (very rarely 8) dorsal fin rays (Weber, 1991, 1992; Armbruster 1997). Color pattern on the fins and dorsal body of *P. anisitsi* typically is dark with white spots, although some large individuals are very dark above with few spots. Weber (1992) used abdominal color pattern as an important trait in distinguishing many of the closely-related members of the genus. In adult and large juvenile *P. anisitsi,* the abdomen is covered by large white spots, many of which are irregularly joined to form a vermiculate pattern. The abdominal pattern observed in the majority of Texas *P. anisitsi* agree with the pattern described and illustrated for this species in Weber (1992). However, the same pattern is similar to that of a subset of Florida specimens all identified by Page (1994) as *P. disjunctivus,* a species endemic to the Amazon River basin and recently described as new by Weber (1991). One Texas specimen (SL = 274 mm; UF 111701) has an unusual abdominal color pattern in that the white spots are small and only a few are interconnected.

The existence of seemingly abnormal or intermediate abdominal color patterns in some specimens from introduced *Pterygoplichthys* populations in Texas (and elsewhere) suggests the possibility of introgressive hybridization. Indeed, J. W. Armbruster (Auburn University, pers. comm.) has seen a number of *Pterygoplichthys* in the aquarium trade that he considers the products of artificial hybridization. Because of the variety of unusual patterns commercially available, Armbruster believes that several different combinations of crosses have occurred. In his brief review of *Pterygoplichthys,* Armbruster (1997) listed 21 nominal species, of which 13 were considered to be valid. Many different forms are in the aquarium trade. Genetic work, in progress, comparing introduced populations of *Pterygoplichthys* with specimens

collected in South America may help resolve the hybridization issue.

Buffalo Bayou is a 72-km-long stream flowing though Houston and is part of the Galveston Bay basin of the Texas-Gulf region in southeastern Texas. Its lower course is the Houston Ship Channel. Sims Bayou is an urban stream ca. 38 km long and draining an area ca. 200 km^2 that feeds into Buffalo Bayou where the bayou forms part of the estuarine reach of the Houston Ship Channel. Sims Bayou flows along the southern margin of the Houston metropolitan area and drains mostly agricultural and residential land. The stream has relatively poor water quality and an unstable flow regime. According to United States Geological Survey data, during low flow Sims Bayou is largely sustained by wastewater effluent from Houston suburbs and from industrial wastes. The stream is currently being re-channelized to be deeper, wider, and lined with concrete blocks. As a result of this disturbance and poor erosion controls, Sims Bayou carries a large sediment load. In the capture reach, Sims Bayou is ca. 15 to 20 m wide and 1.3 m deep.

The presence of juveniles and gravid females suggests that *P. anisitsi* is reproducing in the Buffalo Bayou drainage. No nest burrows were seen, but detection was greatly limited because of low water clarity. In general, the most important factor affecting potential survival of introduced loricariid catfishes is their general lack of tolerance to low temperature. Thus, whether *P. anisitsi* will become permanently established in areas outside its native range depends heavily on its ability to survive short periods of low temperature or adapt to a low temperature regime. In South America, *P. anisitsi* naturally occurs from near 15°S to approximately 34°15′S latitude (Weber, 1992). It is the only *Pterygoplichthys* with a native range extending well outside the tropical zone. Thus, its tolerance to cold temperatures is most likely greater than that of other members of the genus. The most southern natural records reported by Weber are from the lower Uruguay River basin. Annual mean air temperature in that region is ca. 16°C (Walter et al., 1973). Weather information available for nearby Colonia del Sacramento, Uruguay (34°27′S, 57°50′W; elevation 23 m), for 1997 shows monthly air temperature minimums ranging from 1.0°C (July) to 15.4°C (January); data recorded in 1997 at the Houston Hobby Airport (29°39′N, 95°17′W; elevation 14 m) show minimums ranging from −0.8°C (January) to 23.2°C (July; National Climatic Data Center and United States Air Force Combat Climatology Center, 1998). For the period of record (13 July 1993 through the end of 1997) the water temperature minimum for Sims Bayou at the United States Geological Survey gage station at Highway SR 35 near the site of capture was 6.0°C (13 January 1997—Fig. 2).

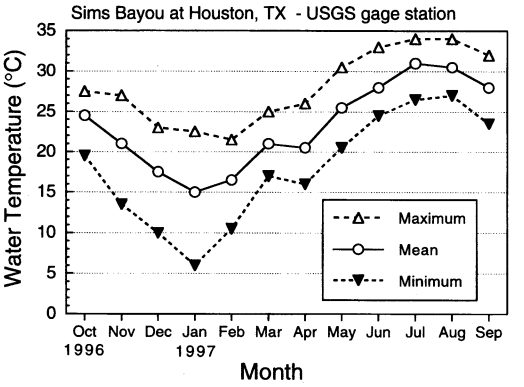

FIG. 2—Monthly water temperatures (minimum, mean, and maximum) for Sims Bayou at Houston, Harris Co., Texas for October 1996 to September 1997. (Source: United States Geological Survey hydrologic gage station 08075500.)

Some loricariids in southern South America naturally occur in very cold water in mountain streams (J. W. Armbruster, Auburn University, pers. comm.). However, the lower lethal temperature of *P. anisitsi* has yet to be determined. In their study on temperature tolerance of foreign fishes introduced to Florida, Shafland and Pestrak (1982) examined 6 specimens of a loricariid and reported lethal temperature to be 11 to 12°C. These authors reported the Florida loricariid as *Hypostomus* sp., but recent evidence suggests they were likely examining *P. multiradiatus* (Fuller et al., 1999). During recent years, 1 *Pterygoplichthys* species in peninsular Florida has invaded as far north as 29°30′N latitude (L. G. Nico, pers. obser.). In addition, these catfish are likely able to survive cold spells by taking refuge in burrows. In the urban streams of the Houston area, *Pterygoplichthys* apparently is using outflow from sewage treatment plants as thermal refugia (M. Webb, Texas Parks and Wildlife Department, pers. ob-

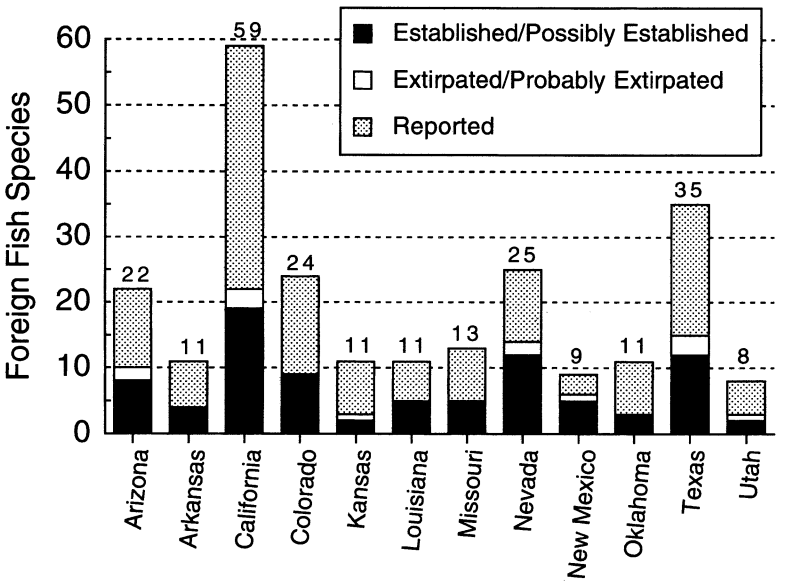

FIG. 3—Numbers of nonindigenous foreign fishes recorded from each of the 12 southwestern states. Established species are those having one or more breeding populations; extirpated fishes include species previously considered established but whose only known reproducing population (or populations) has been either eradicated or became extirpated naturally; reported species are fishes known or recorded from one or more localities, but with no evidence of reproduction. (Modified from information given in Fuller et al., 1999.)

ser.). Based on the above, the continued survival of *P. anisitsi* in Texas is a possibility.

Members of the genus *Pterygoplichthys* share many ecological and life-history attributes typical of nonindigenous fishes actively spreading in other parts of the southern United States: medium to large body size, parental care of eggs or young, a generalized diet, ability to breathe air, and broad environmental tolerances (Nico and Fuller, 1999). *Pterygoplichthys* are large loricariids that commonly reach sizes of 40 cm TL or more. They are primarily detritivores, but also feed on aquatic benthic invertebrates and attached algae (Goulding et al., 1988; L. G. Nico, pers. obser.). Members of this genus also have the ability to breathe air and are able to survive up to 30 h out of water (Val and De Almeida-Val, 1995). Nevertheless, effects of introduced suckermouth armored catfishes in the United States have yet to be documented fully and the ultimate impact of the Texas introduction is unknown. In Hawaii, the thousands of nesting tunnels excavated by male *P. multiradiatus* in reservoir banks have contributed to siltation problems (Devick, 1989). In Florida, *Pterygoplichthys* species are locally abundant in degraded habitats with poor water quality (e.g., south Florida canals) as well as in less disturbed water bodies (i.e., natural streams and lakes). In Florida these catfishes may be causing significant changes in food web structure and also may be competing with native species for food and space. In their discussion of the suckermouth armored catfish *Hypostomus* sp. in Texas, Hubbs et al. (1978) reported possible local displacement of algae-feeding native fishes such as *Campostoma anomalum* by this introduced loricariid. *Pterygoplichthys anisitsi* may have a similar detrimental effect in Texas, particularly if it spreads into less disturbed water bodies in the state.

In southwestern states, the numbers of foreign fish species with currently established (i.e., reproducing) or possibly established populations range from 2 (Kansas and Utah) to 19 (California—Fig. 3). Many other foreign species have been reported but are not known to be reproducing. In their summary matrix, Fuller et al. (1999) reported 34 species of nonindigenous foreign fish taxa (i.e., species and several unidentified forms) for Texas; of these, as many as 9 have established or possibly established populations. In addition to the unidentified suckermouth armored catfish (*Hypostomus* sp.), foreign fishes

with reproducing populations in the state include blue tilapia (*Oreochromis aureus*), redbelly tilapia (*Tilapia zillii*), goldfish (*Carassius auratus*), grass carp (*Ctenopharyngodon idella*), common carp (*Cyprinus carpio*), guppy (*Poecilia reticulata*), green swordtail (*Xiphophorus hellerii*), and possibly Mossambique tilapia (*Oreochromis mossambicus*). Recently, Nile tilapia (*O. niloticus*) supposedly has been introduced to Sims Bayou and may be reproducing (R. T. Martin, pers. obser.). Several other foreign fishes may have had reproducing populations in Texas waters but are now considered extirpated. Based on our preliminary findings, the Texas population of *P. anisitsi* is successfully reproducing. However, additional monitoring in the Buffalo Bayou drainage will be required to fully assess the status of the *P. anisitsi* population and to evaluate potential impacts of this species on the native biota.

Resumen—Muestras de peces colectadas durante 1996–1999 en el drenaje de Buffalo Bayou, Texas, aportaron varios especímenes del bagre loricarido *Pterygoplichthys anisitsi*. Este reporte brinda el primer registro de *P. anisitsi* en los Estados Unidos. Asimismo, el ejemplo de esta especie sirve para discutir el magnitud de introducción de peces de aguas continentales del Suroeste.

We are grateful to J. W. Armbruster for verifying identification of Texas *Pterygoplichthys anisitsi* and for his comments on a draft of the manuscript. We also thank D. A. Sneck-Fehrer of the United States Geological Survey for providing hydrologic data, H. L. Jelks for accessing and decoding weather database files, L. G. Jelks and W. F. Smith-Vaniz for reading and commenting on the manuscript, M. J. Kelly of the Texas Natural Resource Conservation Commission for bringing to our attention the presence of *Pterygoplichthys* in Brays Bayou, M. Webb and K. Schlicht of the Texas Parks and Wildlife Department for providing us with other records of loricariid catfish, and R. H. Robins of the Florida Museum of Natural History and R. K. Vaughn of the Texas Cooperative Wildlife Collection for assistance in cataloguing voucher specimens.

Literature Cited

Armbruster, J. W. 1997. Phylogenetic relationships of the sucker-mouth armored catfishes (Loricariidae) with particular emphasis on the Ancistrinae, Hypostominae, and Neoplecostominae. Unpublished Ph. D. dissertation, University of Illinois, Urbana.

Barron, J. C. 1964. Reproduction and apparent over-winter survival of the suckermouth armored catfish, *Plecostomus* sp., in the headwaters of the San Antonio River. Texas Journal of Science 16: 449–450.

Bunkley-Williams, L., E. H. Williams, Jr., C. G. Lilystrom, I. Corujo-Flores, A. J. Zerbi, C. Aliaume, and T. N. Churchhill. 1994. The South American sailfin armored catfish, *Liposarcus multiradiatus* (Hancock), a new exotic established in Puerto Rican fresh waters. Caribbean Journal of Science 30:90–94.

Courtenay, W. R., and J. E. Deacon. 1982. Status of introduced fishes in certain spring systems in southern Nevada. Great Basin Naturalist 42:361–366.

Devick, W. S. 1989. Disturbances and fluctuations in the Wahiawa Reservoir ecosystem. Project F-14-R-13, Job 4, Study I. Hawaii Department of Land and Natural Resources, Division of Aquatic Resources, Honolulu.

Eigenmann, C. H., and C. H. Kennedy. 1903. On a collection of fishes from Paraguay, with a synopsis of the American genera of cichlids. Proceedings of the Academy of Natural Sciences, Philadelphia 55:497–537.

Fuller, P. L., L. G. Nico, and J. D. Williams. 1999. Nonindigenous fishes introduced to inland waters of the United States. American Fisheries Society, Special Publication 27, Bethesda, Maryland.

Goulding, M., M. L. Carvalho, and E. G. Ferreira. 1988. Rio Negro, rich life in poor water. SPB Academic Publishing, The Hague, The Netherlands.

Hubbs, C., R. J. Edwards, and G. P. Garrett. 1991. An annotated checklist of the freshwater fishes of Texas, with keys to identification of species. Texas Journal of Science, Supplement 43:1–56.

Hubbs, C., T. Lucier, G. P. Garrett, R. J. Edwards, S. M. Dean, E. Marsh, and D. Belk. 1978. Survival and abundance of introduced fishes near San Antonio, Texas. Texas Journal of Science 30:369–376.

National Climatic Data Center and United States Air Force Combat Climatology Center. 1998. International surface weather observations, 1982–1997. Computer laser optical discs, 5 volumes. Jointly produced by United States Department of Commerce, National Oceanic and Atmospheric Administration, National Climatic Data Center and United States Department of Air Force, Air Force Combat Climatology Center, Asheville, North Carolina.

Nico, L. G., and P. L. Fuller. 1999. Spatial and temporal patterns of nonindigenous fish introductions in the United States. Fisheries 24(1):16–27.

Page, L. M. 1994. Identification of sailfin catfishes introduced to Florida. Florida Scientist 57:171–172.

SHAFLAND, P. L., AND J. M. PESTRAK. 1982. Lower lethal temperatures for fourteen non-native fishes in Florida. Environmental Biology of Fishes 7: 149–156.

VAL, A. L., AND V. M. F. DE ALMEIDA-VAL. 1995. Fishes of the Amazon and their environment. Zoophysiology Vol. 32. Springer-Verlag, Berlin, Germany.

WALTER, H., E. HARNICKELL, AND D. MUELLER-DOMBOIS. 1973. Climate-diagram maps of the individual continents and the ecological climatic regions of the earth. Springer-Verlag, Berlin, Germany.

WEBER, C. 1991. Nouveaux taxa dans *Pterygoplichthys* sensu lato (Pisces, Siluriformes, Loricariidae). Revue Suisse de Zoologie 98:637–643.

WEBER, C. 1992. Révision du genre *Pterygoplichthys* sensu lato (Pisces, Siluriformes, Loricariidae). Revue Francaise d'Aquariologie 19:1–36.

WHITESIDE, B. G., AND C. BERKHOUSE. 1992. Some new collection locations for six fish species. Texas Journal of Science 44:494.

Submitted 17 June 1999. Accepted 29 December 1999. Associate Editor was David R. Edds.

ATTEMPTED PREDATION OF COUCH'S SPADEFOOT (*SCAPHIOPUS COUCHII*) JUVENILES BY ANTS (*APHAENOGASTER COCKERELLI*)

KEVIN E. BONINE*, GAGE H. DAYTON, AND ROBIN E. JUNG

United States Geological Survey Patuxent Wildlife Research Center, 12100 Beech Forest Road, Laurel, MD 20708
Present address of KEB: Department of Zoology, University of Wisconsin, Madison, WI 53706
Present address of GHD: Department of Wildlife and Fisheries Sciences, Texas A&M University, College Station, TX 77843
**Correspondent: kebonine@students.wisc.edu*

Some amphibians may be potentially abundant and vulnerable prey, especially early in life. For example, newly metamorphosed southern spadefoot toads (*Scaphiopus multiplicatus*) are preyed on by submerged tabanid (horsefly) larvae as they move across muddy shores away from their natal pond (Jackman et al., 1983). However, only a handful of publications discuss predation of amphibians by ants. Ants prey on newly metamorphosed cane toads (Clerke and Williamson, 1992), on brooding salamanders (Forester, 1979), and on spadefoot eggs (Dayton and Jung, 1999). Fritz et al. (1981) observed that some aposematically colored frogs are distasteful to ants. Here, we report the attempted predation of juvenile Couch's spadefoot toads (*Scaphiopus couchii,* Pelobatidae) by the ant *Aphaenogaster cockerelli* (Myrmicinae) at 2 Texas localities in 2 different years.

Scaphiopus couchii is a southwestern desert-adapted spadefoot that breeds in ephemeral pools during the rainy season from May through September (Stebbins, 1985). This species can metamorphose from egg to terrestrial juvenile in as few as 8 days (Newman, 1989). Depending on size and duration of pool, thousands of newly metamorphosed Couch's spadefoots may emerge *en masse.*

Aphaenogaster cockerelli inhabit desert flatlands, build subterranean nests in the open (Creighton, 1950), and usually forage nocturnally on seeds, plant tissue, pieces of fruit, and dead or moribund insects (Whitford and Ettershank, 1975; Wheeler and Wheeler, 1986). They switch to a more insect-rich diet when possible, especially during brood-rearing when protein is limiting (Whitford et al., 1980). Typically, *A. cockerelli* forage individually. However, when requiring assistance to transport larger food items, they employ both short and long-range pheromone recruitment to attract nestmates (Holldobler et al., 1978).

On 30 June 1998 at 2157 h, we observed 1 individual *A. cockerelli* (8.7 mm total length) attempting to carry a newly metamorphosed Couch's spadefoot (10 mm snout–vent length; tail was 5 mm long) away from the water's edge at Paint Gap Tank, an old livestock tank in Big Bend National Park, Brewster Co., Texas (UTM zone 13, 3251979N, 0664754E, 1087 m elevation, T_{air} 28.6°C, T_{water} 28.2°C, pool dimensions: ca. 5 m by 14 m by 0.25 m deep). The ant and spadefoot struggled on the muddy bank about 10