

A biographical account of John Paul Richard Thomas, the man who leaves no stone unturned

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Abstract

This biographical account summarizes the professional career and scientific contributions of John Paul Richard Thomas, a contemporary leading figure in the systematics of West Indian amphibians and non-avian reptiles, especially of blind snakes of the families Typhlopidae and Leptotyphlopidae. Since his first expedition to the West Indies in 1957, Richard's vast field experience (including three trips to Peru between 1968 and 1974), impressive collecting skills, and remarkable ability to detect phenotypic variation among natural populations have resulted in the description of more than 70 species of snakes (24 typhlopids, 4 leptotyphlopids), lizards, and frogs in 16 genera and 11 taxonomic families. Richard joined the faculty of the Department of Biology, University of Puerto Rico, Río Piedras, in 1976 and ever since his efforts significantly advanced organismal biology research at the institution. Although primarily a systematist, his desire to understand multiple aspects of an organism's biology and contagious passion for becoming intimately familiar with animals in their natural environments provided his students the opportunity to conduct research in fields such as behavioral and evolutionary ecology. Richard's mentoring fostered the scientific interests of his graduate students, who were exposed first-hand to every aspect of research, an invaluable experience that served as a springboard for the development of their professional careers inside and outside academia. This Commentary is a fitting tribute to an influential, unassuming scientist whose passion for turning over rocks has led to the discovery of many interesting species.

KEYWORDS

blind snakes, Caribbean Sea, systematics, West Indies

1 | COMMENTARY

This Festschrift is an overdue tribute to John Paul Richard Thomas, a respected, charismatic, and unassuming scientist whose work during a career spanning more than 60 years made him one of the most influential figures in West Indian herpetology. Since 1976, Richard's efforts

advanced organismal biology research at the University of Puerto Rico, Río Piedras. His desire to understand multiple aspects of an organism's biology provided a number of young students the opportunity to participate in projects ranging from systematics to behavioral and evolutionary ecology. Although the majority of Richard's research is centered on the systematics of blind snakes,

sphaerodactylid geckos, anole lizards, amphisbaenians (worm lizards), and eleutherodactylid frogs, his scientific curiosity extends beyond taxonomy and phylogenetics. A naturalist with a contagious passion for becoming intimately familiar with animals in their natural environments, Richard's mentoring fostered the scientific interests of his graduate students. His students were made to deal first-hand with every aspect of research, from the conception of a project to its publication in a peer-reviewed journal. This exposure proved to be an invaluable experience for the development of their professional careers inside and outside academia. Richard officially retired from the University of Puerto Rico, Río Piedras in December 2017, but unsurprisingly continues to work on research projects.

2 | EARLY ADVENTURES (1938–1975)

Richard was born in Jacksonville, Florida, USA, on May 2nd, 1938. As a child, he spent considerable time wandering the woods of the Tampa area in Florida, and by the age of seven, it was clear that “creepy-crawly” animals, especially snakes, were his passion. During this time, Richard had an encounter with what he then believed was the second snake he ever saw in the wild, but which turned out to be a different kind of squamate reptile, the legless Florida Worm Lizard (*Rhineura floridana*), an amphisbaenian, one of the groups in which he would specialize in his professional career. (The first snake that Richard saw in the wild was the Ring-necked Snake, *Diadophis punctatus*.) Between 1948 and 1958 Richard lived in Bogotá and Barranquilla, Colombia (where he learned Spanish), Long Island (New York), Jacksonville and Tampa (Florida), and Cheraw (South Carolina). In each of these places, Richard familiarized himself with the local herpetofauna. As a teenager in Cheraw he kept a couple of snake pits, one at his house (only for a short period of time) and another one on a property outside of town, where his family allowed him to keep some venomous snakes. Although the latter was not so much a snake pit as a large snake cage sunk into the ground, it allowed Richard to be near his favorite animals. One day, he collected a Northern Cottonmouth (*Agkistrodon piscivorus*) and put it in a container, which he “secured” with a t-shirt. He got in trouble when this venomous snake escaped—in his parents' car. Nevertheless, this incident helped Richard to appreciate how patient his parents were with him.

While attending high school in Cheraw, Richard met Albert Schwartz (1923–1992), who had a special interest in West Indian systematics (Duellman, Thomas, &

Henderson, 1993, 1996). At the time, Schwartz was the Curator of Vertebrates at the Charleston Museum in South Carolina, and was working on various projects on turtles, frogs, salamanders, and shrews from the southeastern United States. Schwartz invited Richard to the field, an invitation that marked the beginning of a friendship that was to become a lasting professional collaboration. Richard's collecting activities led to his first scientific contribution: a donation of a series of *Nerodia sipedon* (Common Water Snake) x *N. fasciata* (Southern Water Snake) hybrids to Roger Conant (1909–2003), the Curator of Reptiles at the Philadelphia Zoological Garden—specimens that were cited in Conant's article on hybridization in *N. fasciata* (Conant, 1963), a paper in which Richard was acknowledged.

After graduating from high school in 1956, Richard enrolled in the University of South Carolina, Columbia. However, his undergraduate education was punctuated by his military service (as a medic), during which he was stationed in Fort Sam Houston in San Antonio, Texas; France; and Port Richey, Florida. After attending various undergraduate institutions (University of South Carolina, Columbia [1957–1959], University of Maryland Overseas [1961], and Miami Dade Community College, North Campus [1964]) Richard received his B.A. in Zoology from the University of South Florida, Tampa, in 1969.

In addition to Albert Schwartz, Wilfred T. Neill, Jr. (1922–2001) also exerted an early influence on Richard's career. Neill never completed his doctoral degree, but he was a recognized herpetologist and a polymath who published numerous articles and books on herpetology, biogeography, archeology, and anthropology. Neill happened to move to Port Richey, where Richard lived while enrolled at the University of South Florida. Shortly after their first meeting, Richard and Neill became friends, and spent long hours discussing a wide variety of topics and conducting local field work.

In 1957, Richard accompanied Schwartz on a trip to Cuba. This was Richard's first collecting trip to the West Indies, an experience that defined his professional career. During the expedition Richard collected, for the first time, various species of *Sphaerodactylus* geckos and *Typhlops* (sensu lato) blind snakes, taxa on which he was to become one of the world's leading systematics experts. The trip also marked the official beginning of a scientific collaboration between Schwartz and Richard that extended for two decades and resulted in 14 publications that collectively described six species (1 *Anolis*, 5 *Sphaerodactylus*) and 28 subspecies of lizards (2 *Anolis*, 19 *Sphaerodactylus*) and snakes (1 *Caraiba*, 1 *Cubophis*, 2 *Hypsirhynchus*, 1 *Ialtris*, 2 *Tropidophis*). One of these contributions was a checklist of West Indian amphibians and non-avian reptiles (Schwartz & Thomas, 1975).

Starting in 1963, Richard made numerous collecting trips to the West Indies (Figure 1) and South America. With Schwartz, he traveled to the Bahamas, Cayman Islands, the Lesser Antilles, the Dominican Republic, Haiti, and Jamaica. Richard's first visit to Puerto Rico for field work was in 1963, with successive trips in 1964 and 1965. He first traveled to Peru in 1968 while he was still an undergraduate student at the University of South Florida. George H. Lowery, Jr. (1913–1978), the Director of the Museum of Zoology at Louisiana State University, Baton Rouge (LSU) was looking for an experienced undergraduate to join his expedition, and Richard earned the invitation. Richard made two additional trips to Peru in 1971 and 1974 (Figure 2).

Richard has a keen eye for detecting phenotypic variation among natural populations. Two examples of this notable ability are his recognition that the Puerto Rican *Eleutherodactylus coqui* (Puerto Rican Coqui) and *Anolis cooki* (Dry Forest Anole) are distinct species within their genera. Richard's perception of coloration, vocalization, and habitat differences among frog populations led him to describe *E. coqui* (Thomas, 1965b), and his detailed morphological and behavioral observations cemented the case for elevating *A. cooki* to species level (Gorman, Thomas, & Atkins, 1968).

While examining a series of LSU specimens that Richard collected in 1968 in Peru, Douglas A. Rossman (1936–2015) became impressed by Richard's collecting and preservation skills (Figure 3). Rossman, an expert on the systematics of *Thamnophis* (North American garter snakes), invited Richard to join his laboratory at LSU as a doctoral student, which he did in 1969, completing his Ph.D. in 1976. For his dissertation, Richard conducted a comprehensive revision of *Typhlops* (sensu lato) blind snakes in the West Indies (Thomas, 1976). This study laid the foundation for all future systematic work on the g, which has since more than doubled in the number of species, thanks in great part to Richard's more than 40 years of collecting efforts and work on the morphology of these snakes. Unsurprisingly to those who have been with Richard in the field, during the extensive field work for his dissertation he collected a wide variety of specimens. This effort resulted in the description of several species, including taxa in the genera *Amphisbaena* (worm lizards), *Anolis* (anoles), *Diploglossus* (galliwasp), *Eleutherodactylus* (frogs), and *Sphaerodactylus* (geckos). Before he finished his doctorate, Richard had already become a leading authority on the systematics of West Indian amphibians and non-avian reptiles.

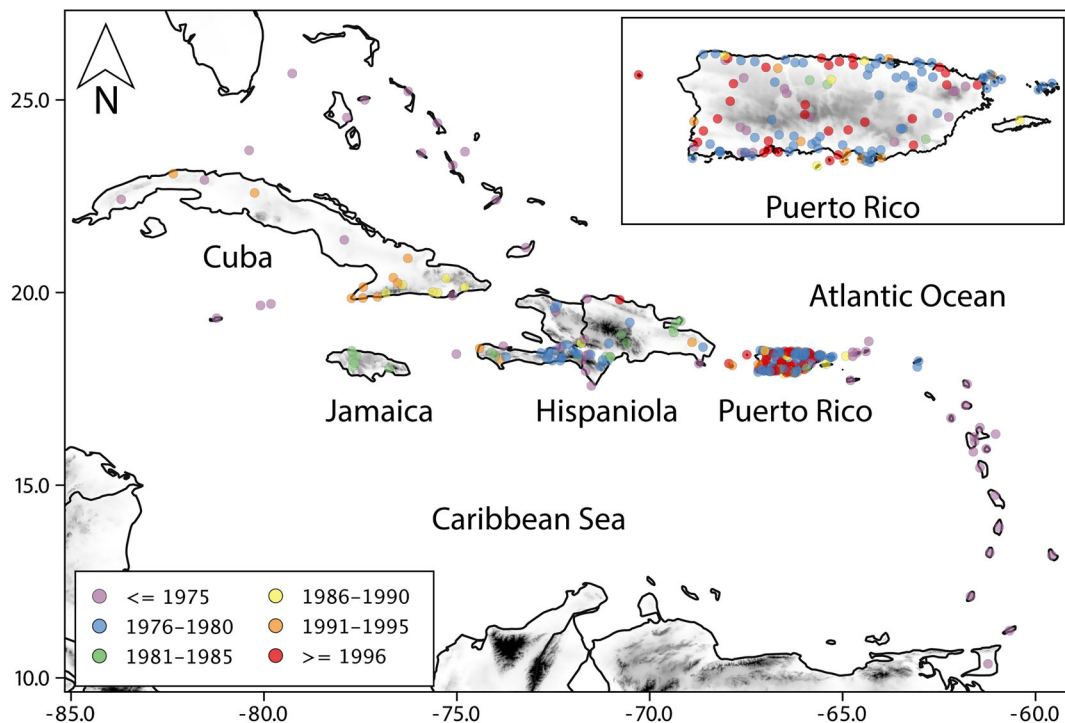


FIGURE 1 Map of the West Indies illustrating the widespread distribution of the localities visited by Richard Thomas during nearly 50 years of field work in the region. Colored circles indicate the approximate geographic locations of Richard's collecting sites in the Bahamas, Greater Antilles, and Lesser Antilles (including Trinidad and Tobago), grouped into six temporal categories. The localities were obtained from eight of Richard's field notebooks, and from the catalog of the National Museum of Natural History, Smithsonian Institution, Washington, D.C., and may not represent an exhaustive account of Richard's collecting efforts in the West Indies. The inset shows Richard's collection sites in Puerto Rico. The map was created using QGIS v3.10 (QGIS Development Team, 2021)



FIGURE 2 A rare photograph of a bearded Richard Thomas. The picture was taken outside the Museum of Zoology, Louisiana State University, Baton Rouge, during the summer of 1974, before Richard's third collecting expedition to Peru

During his time at LSU, Richard married Kim R. Rutherford, whose parents lived close to a lake full of alligators (although that was not the only reason why he married her). Kim, who was a mammalian systematist specializing in rodents, coauthored three publications with Richard (Thomas & Thomas, 1977a, 1977b; Thomas & Thomas, 1978). Tragically, she died in an automobile accident only 2 years after taking a professorial appointment at Clarion University, Pennsylvania.

3 | LIFE IN THE ENCHANTED ISLAND (1976–PRESENT)

Richard visited the University of Puerto Rico, Río Piedras (UPR-RP) on November 24–26, 1975, to interview for a tenure-track position. He gave two seminars at the Department of Biology. David Bruck, who at the time was the Chair of the Recruitment Committee, became one of Richard's closest friends. Richard joined the Department in July 1976, shortly after receiving his doctoral degree at LSU. Ever since, Richard has maintained an active research program at UPR-RP, authoring more than 60 publications and graduating 14 Master's and five doctoral students (as of December 2020; Table 1).

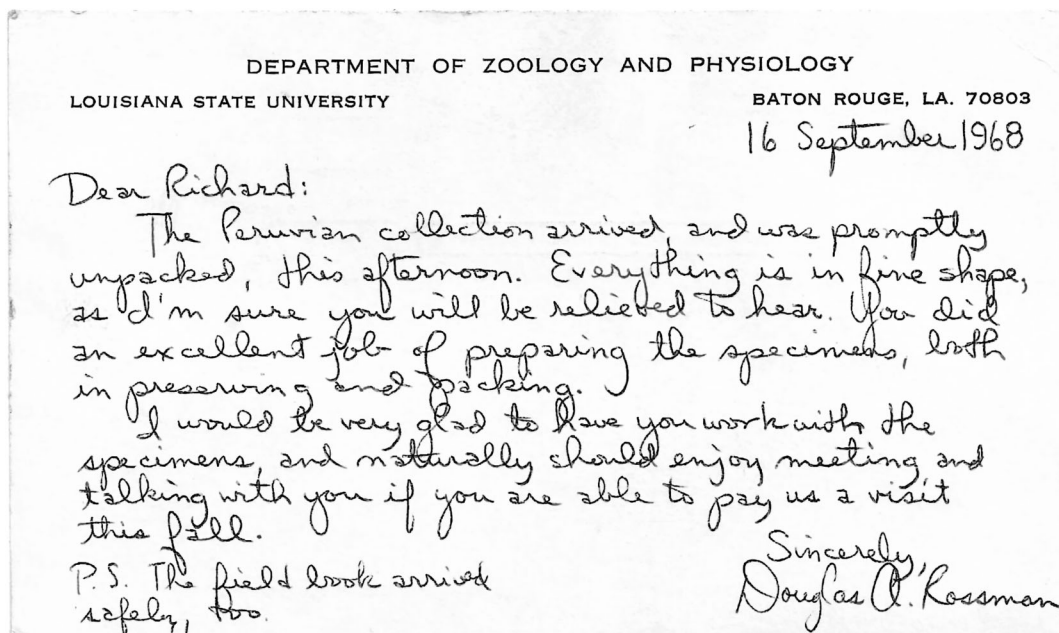


FIGURE 3 Postcard sent by Douglas Rossman to Richard Thomas on September 16, 1968, expressing his interest in having Richard work at the Museum of Zoology, Louisiana State University, Baton Rouge, studying the specimens collected during a 1968 expedition to Peru that Richard was part of. The postcard was mailed to Richard's residency in Port Richey, Florida. Richard joined Rossman's laboratory as a doctoral student in 1969, graduating in 1976

TABLE 1 Graduate students advised by Richard Thomas at the Department of Biology, University of Puerto Rico, Río Piedras

Student	Degree	Graduation year	Thesis/Dissertation title	Doctoral institution	Present affiliation
Bruck, Tanya	M.Sc.	1978	The structure of the male genital system of <i>Alagoasa bicolor</i> (L.) (Coleoptera: Chrysomelidae), with special regard to sperm transportation. 137 pp. (Co-Advisor: Niilo Virkii)	—	Retired from the University of Puerto Rico, Río Piedras
García Moll, Alberto	M.Sc.	1978	Abundance studies of the <i>Anolis</i> lizards and insect populations of altitudinally different tropical forest habitats. 65 pp.	Rutgers University, New Brunswick, New Jersey	Independent Consultant, Invasive species and medical and forensic entomology
Cely Fajardo, José E.	M.Sc.	1981	Variación geográfica de <i>Anolis pulchellus</i> Duméril y Bibron en Puerto Rico e Islas Vírgenes. 85 pp.	—	Professor and Independent Consultant, Universidad Distrital Francisco José de Caldas, Bogotá, Colombia
Tirado Rivera, Wilmer	M.Sc.	1982	Rate of water loss in two species of <i>Sphaerodactylus</i> . 37 pp.	—	—
Gaa Ojeda, Ava	M.Sc.	1983	Aspects of the life history of two species of <i>Sphaerodactylus</i> (Gekkonidae) in Puerto Rico. 42 pp.	—	Morgantown Art Association, West Virginia
Reyes Pérez, Carlos E.	M.Sc.	1987	Comparative study of the effect of temperature on digestive and assimilation efficiencies in <i>Ameiva exsul</i> (Teiidae) and in <i>Hemidactylus brooki</i> (Gekkonidae). 70 pp.	—	Physician, Shands Lake Shore Regional Medical Center, Lake City, Florida
Rodríguez Robles, Javier Augusto	M.Sc.	1990	Feeding behavior and the effect of venom on the digestion of prey in the Puerto Rican racer, <i>Alsophis portoricensis</i> (Serpentes: Colubridae). 53 pp.	University of California, Berkeley	Professor and Vice Provost for Academic Programs, University of Nevada, Las Vegas
Álvarez Pérez, Héctor Joel	Ph.D.	1992	Thermal characteristics of <i>Sphaerodactylus</i> species in Puerto Rico and their implications for the distribution of the species in Puerto Rico. 105 pp.	University of Puerto Rico, Río Piedras	Retired from the University of Puerto Rico, Río Piedras
Leal, Manuel	M.Sc.	1994	Antipredator behaviors of <i>Anolis cristatellus</i> (Sauria: Polychrotidae). 53 pp.	Washington University, St. Louis	Professor, University of Missouri, Columbia
García Bermúdez, Miguel Antonio	M.Sc.	1995	The role of elevation and vegetation structure on upland <i>Anolis</i> assemblages in Puerto Rico. 64 pp.	University of Michigan, Ann Arbor	Fish and Wildlife Administrator, Science Application Program, United States Fish and Wildlife Service, San Juan

(Continues)

TABLE 1 (Continued)

Student	Degree	Graduation year	Thesis/Dissertation title	Doctoral institution	Present affiliation
Daza Vaca, Juan Diego	M.Sc.	2005	The skull of the gecko <i>Sphaerodactylus roosevelti</i> (Reptilia: Squamata). 176 pp.	University of Puerto Rico, Río Piedras	Assistant Professor, Sam Houston State University, Huntsville, Texas
Vargas Salinas, Fernando	M.Sc.	2005	Breeding behavior in the cane toad <i>Bufo marinus</i> and the Cuban treefrog <i>Osteopilus septentrionalis</i> (Amphibia, Anura), two successful invasive species. 114 pp.	Universidad de Los Andes, Bogotá, Colombia	Professor, Universidad del Quindío, Armenia, Colombia
Padilla García, Luis Felipe	M.Sc.	2006	Geographic variation in color pattern of the gecko <i>Sphaerodactylus macrolepis</i> (Sauria: Gekkonidae). 153 pp.	—	Instructor, University of Puerto Rico, Bayamón
Ríos López, Neftalí	Ph.D.	2007	The structuring of herpetofaunal assemblages in human-altered coastal ecosystems. 233 pp.	University of Puerto Rico, Río Piedras	Associate Professor, University of Puerto Rico, Humacao
Daza Vaca, Juan Diego	Ph.D.	2008	Cladistic analysis of the Gekkota (Reptilia) by means of craniological data. 227 pp.	University of Puerto Rico, Río Piedras	Assistant Professor, Sam Houston State University, Huntsville, Texas
Herrera Martínez, Alexandra	M.Sc.	2008	Taxonomic review and affinities of Puerto Rican spiny rats (Rodentia, Echimyidae, Heteropsomyinae). 55 pp.	George Washington University, Washington, D.C.	Molecular Researcher, Texas Invasive Species Institute, Sam Houston State University, Huntsville, Texas
Puente Rolón, Alberto Rubén	Ph.D.	2012	Reproductive ecology, fitness and management of the Puerto Rican boa (<i>Epicrates inornatus</i> , Boidae). 151 pp.	University of Puerto Rico, Río Piedras	Associate Professor, University of Puerto Rico, Mayagüez
Ramírez Gallego, Cristián	M.Sc.	2015	Genetic diversity of leatherback turtles (<i>Dermochelys coriacea</i>) from Puerto Rico. 42 pp.	—	Chief Executive Officer, Fundación Tortugas del Mar, Colombia
Ospina Tobón, Óscar Eduardo	Ph.D.	2018	An integrative approach to the evolution in populations of a fossorial reptile—population genetics, morphometrics, and habitat modeling of the Puerto Rican worm lizard, <i>Amphisbaena caeca</i> Cuvier (Reptilia: Amphisbaenidae). 146 pp.	University of Puerto Rico, Río Piedras	Postdoctoral Fellow, Department of Biostatistics and Bioinformatics, Moffitt Cancer Center, Tampa, Florida

TABLE 1 (Continued)

Student	Degree	Graduation year	Thesis/Dissertation title	Doctoral institution	Present affiliation
Barrientos Muñoz, Karla Georgina	M.Sc.	In progress	Estimating sex ratio in the offspring of the hawksbill turtle (<i>Eretmochelys imbricata</i>), and climate change implications in Mona Island, Puerto Rico.	—	Fundación Tortugas del Mar, Colombia



FIGURE 4 Richard Thomas in his two favorite environments, the field and the laboratory. Left, Richard at José Martí's Bust, on top of Pico Turquino, Cuba (August 1989). Right, Richard at S. Blair Hedges' laboratory at Pennsylvania State University, State College (September 8, 2009). Photographs courtesy of S. Blair Hedges

S. Blair Hedges, then a doctoral student at the University of Maryland, College Park, and Richard met for the first time in 1982 at the annual meeting of ichthyologists and herpetologists in Raleigh, North Carolina. Although meeting a colleague for the first time at a scientific conference is a common occurrence, the encounter between Richard and Blair was unusual for Richard, who almost never attends scientific conferences, preferring instead “to spend that time conducting field work, rather than shaking hands”. The meeting was the catalyst for their first collecting trip together to Hispaniola in 1983, and the initiation of a longstanding collaboration (Figure 4). This association represented a perfect match between two superb field biologists: a senior herpetologist trained

as a classical systematist, who at the time was uncertain about the utility of molecular phylogenetics, and a young, driven student with a strong appreciation for classical systematics, but who also was at the forefront of the molecular systematics revolution. Richard and Blair became friends and colleagues. Their prolific collaboration has resulted (as of December 2020) in 22 publications describing 35 new species (8 frogs, 12 lizards, 3 amphibians, 12 snakes). An excellent example of their complementary expertise is the description of a new snake from Puerto Rico, *Antillotyphlops hypomethes* (Puerto Rican Coastal Blind Snake; Hedges & Thomas, 1991). This discovery was made possible by Richard's keen eye and ability to quantify morphological differences, and

Blair's intimate knowledge of molecular systematics. This combined effort produced compelling evidence for the recognition of a species whose holotype was collected by Richard on the UPR-RP Campus! Another noteworthy aspect of their productive association is that Richard and Blair described 11 species of blind snakes in a single paper (Thomas & Hedges, 2007).

In total, Richard has described 72 species (as of December 2020), including 1 *Bolitoglossa* (Plethodontidae) salamander, 10 *Eleutherodactylus* (Eleutherodactylidae) frogs, 5 *Amphisbaena* (Amphisbaenidae) worm lizards, 2 *Anolis* (Dactyloidae) anoles, 1 *Bachia* (Gymnophthalmidae) spectacled lizard, 2 *Celestus* and 1 *Diploglossus* (Diploglossidae) galliwasp, 19 *Sphaerodactylus* (Sphaerodactylidae) geckos, and 31 snakes in the families Colubridae (sensu lato; colubrids; Dipsadidae of some authors—1 *Dipsas*, 1 *Erythrolamprus*), Leptotyphlopidae (slender blind snakes; 4 *Mitophis*), Tropicophiidae (West Indian dwarf boas; 1 *Tropidophis*), and Typhlopidae (blind snakes; 1 *Amerotyphlops*, 5 *Antillytyphlops*, 9 *Cubatyphlops*, 9 *Typhlops*).

Richard is an outstanding illustrator. He is responsible for the majority of the illustrations that appear in his publications, and the level of detail in his drawings is astonishing. One only needs to look at his drawings of hemipenes of blind snakes of the family Typhlopidae to appreciate his ability to illustrate small and complex structures. Occasionally, Richard's discoveries increased the number of taxonomic groups known from a particular region, as happened when he described the slender blind snake *Mitophis pyrites* (Leptotyphlopidae; Thomas, 1965c) from Hispaniola. Richard has twice described the world's smallest amniote vertebrate: first was the gecko *Sphaerodactylus parthenopion* from Virgin Gorda and Tortola, British Virgin Islands (Thomas, 1965a), followed by the slightly smaller *S. ariasae* (Hedges & Thomas, 2001) from Isla Beata and extreme southcentral Hispaniola.

Richard is an extraordinary field biologist, especially in terms of his remarkable collecting skills. He is always equipped with a Swiss army knife, Global Positioning System unit, camera, a pillowcase full of plastic bags, a potato rake, and various other devices, which gave rise to the affectionate nickname coined by some of his graduate students: "Dr. Gadget" (Figure 5), in reference to all the gear that he brings to the field. For Richard, it is second nature to glance at an area and accurately point out the precise spot where collecting will likely result in a nice series of specimens. This ability is even more impressive when one considers that in many cases Richard is searching for secretive species (*Amphisbaena*, *Sphaerodactylus*, typhlopids and leptotyphlopids blind snakes). Proof of his keen ability to find elusive animals is the re-discovery of one of the most secretive arboreal taxa from Puerto Rico, *Anolis occultus* (Twig Anole). The first specimen of this species was



FIGURE 5 A caricature of Richard Thomas based on a Charles Darwin cartoon (Sambourne, 1881). Like Darwin, Richard is an excellent naturalist whose study taxa include fossorial animals; in Richard's case, these taxa include blind snakes of the family Typhlopidae (in the foreground). Notice the gadgets in Richard's belt, the Igloo cooler, and the potato rake—his constant field companion. Illustration by Camilo A. Triana

collected in 1963 in Jayuya by the Puerto Rican herpetologist Juan A. Rivero (1923–2014), but only one additional specimen was obtained (in Maricao) before Ernest E. Williams (1914–1998; Curator of Herpetology, Museum of Comparative Zoology, Harvard University) mentioned to Richard the strange anole collected at two localities in the western part of the island. In 1965, Albert Schwartz and Richard collected 39 additional specimens of *A. occultus* at five localities in the mountains of southern and northeastern Puerto Rico, significantly extending the geographic distribution of the species to encompass most of the island's Cordillera Central and Sierra de Luquillo (Williams, Rivero, & Thomas, 1965).

Richard's ability to inspire Latinx students to explore science as a career path is laudable, particularly when taking into consideration that several of his mentorees were first-generation college students. Richard's mentoring style is based on the premise that graduate

students should be treated as junior colleagues, and that it is their responsibility to become experts on the subjects of their theses or dissertations, while he serves as a sounding board for their ideas. Those of us who embraced this approach to mentoring quickly learned that we could always count on Richard's support. Undoubtedly, the accomplishments of his students reflect in large part Richard's ability to instill in them the value of scientific curiosity. Under Richard's supervision, his students conducted research on topics as diverse as behavioral and feeding ecology; venom function in snakes; community structure of *Anolis* lizards; thermal ecology of *Sphaerodactylus* geckos; systematics of *Amphisbaena* worm lizards, *Anolis*, *Eleutherodactylus* frogs, and *Sphaerodactylus* using morphological and molecular approaches; population genetics of *Amphisbaena*; ecological studies of frogs and marine turtles; and even paleontological investigations of Caribbean caviomorph rodents. Few researchers have contributed as much as Richard to the development of organismal biology at UPR-RP, and none of his graduate students has ever regretted working with him. *Working with him* is an accurate expression, for Richard was more than just a mentor. He was first and foremost a friend who would often go the extra distance to provide help when additional assistance was needed.

Often, Richard's graduate students and researchers who visited Puerto Rico went to the field with him. Richard also led field trips for students in his Herpetology and Biogeography courses at UPR-RP, excursions during which he transmitted to the students his passion for field biology. One of Richard's many impressive abilities in the field is to abruptly jump out and catch a specimen that no one else had seen yet. Going on a field trip with him was always an academically enriching experience. All of us who were curious about organismal biology and pursued a professional career in one of its subdisciplines (e.g., evolutionary biology, behavioral and evolutionary ecology, systematics) were inspired by Richard. His vast knowledge of Caribbean natural history makes him a "human field guide". Richard can quickly identify, in many instances to the species level, many of the vascular plants, invertebrates, and vertebrates present in a particular area, and he regularly divulges facts about the geology and fauna of the region.

The dedication that many of us witnessed in the field was also evident in Richard's laboratory, which was an entropic environment packed with books, journals, maps, jars of myriad sizes, collecting equipment, and preserved specimens all around. His crepuscular and nocturnal habits are well known to his students and closest colleagues. He often worked until two or three in the morning, carefully studying series of specimens for his systematic investigations, which often resulted in the

description of new species, as we previously stated (see also Bauer et al., this volume). He kept meticulous notes about his many collecting trips in several journals, which included morphological data about thousands of specimens of various genera that he had collected. Despite the apparent high level of disorganization, all the materials that Richard needed for his research were present in his lab, although their precise location was not always immediately known. The number of books and journals in the lab was so large that it often saved his students a trip to the library. Paradoxically, these extensive bibliographic resources occasionally presented a bit of an inconvenience, as graduate students sometimes had to compete to secure a physical space to work.

Systematists honor well-respected colleagues by naming taxa after them. At least five species and four subspecies have been named in Richard's honor: a Cuban anole, *Anolis equestris thomasi* (Schwartz, 1958); a Cuban coqui, *Eleutherodactylus thomasi* (Schwartz, 1959); a gecko from the María Islands, Saint Lucia, Lesser Antilles, *Sphaerodactylus microlepis thomasi* (Schwartz, 1965); a bat from Guadeloupe, Lesser Antilles, *Sturnira thomasi* (de la Torre & Schwartz, 1966); a Hispaniolan ground lizard, *Pholidoscelis chrysolemus richardthomasi* (Schwartz & Klinikowski, 1966); a Hispaniolan curly-tailed lizard, *Leiocephalus lunatus thomasi* (Schwartz, 1967); a Cuban gecko, *Sphaerodactylus richardi* (Hedges & Garrido, 1993); a Cuban millipede, *Amphelictogon thomasi* (Pérez-Asso, 1996); and a butterfly from Haiti, *Calisto thomasi* (Johnson & Hedges, 1998).

4 | CONCLUDING REMARKS

In June 2009, three of Richard's former students (J. A. Rodríguez-Robles, M. Leal, M. A. García-Bermúdez) hosted a symposium at the University of Puerto Rico, Río Piedras, to honor Richard for his multiple scientific contributions. The event was attended by several of Richard's colleagues and former and then current students, many of whom gave talks on various aspects of the biology of lizards, snakes, frogs, and turtles; expressed their gratitude to Richard for readily sharing his extensive knowledge and for his almost perpetual willingness to lead field trips; and told entertaining stories involving "Dr. Gadget". Those who have had the fortune of interacting with Richard for various years, whether as an advisor or as a colleague, consider him an accomplished researcher who has lived his entire adult life expanding our knowledge of amphibians and non-avian reptiles. It is almost impossible not to admire Richard, a seasoned naturalist who can discover interesting species by simply turning over a rock.

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AUTHOR CONTRIBUTIONS

Javier Rodríguez-Robles: Conceptualization; investigation; writing-original draft; writing-review & editing. **Manuel Leal:** Conceptualization; investigation; validation; writing-original draft; writing-review & editing. **Juan Daza:** Conceptualization; investigation; visualization; writing-original draft; writing-review & editing. **Alexandra Herrera:** Investigation; writing-review & editing. **Oscar E. Ospina:** visualization.

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