A Tribute to J. P. Richard Thomas

1974

ca. 1952

ca. 2003

"The Man Who Leaves No Stone Unturned"

June 6, 2009 – 8:30 A.M. - 5:00 P.M.

University of Puerto Rico, Río Piedras Campus

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Symposium

A Tribute to J. P. Richard Thomas

"The Man Who Leaves No Stone Unturned"

June 6, 2009

University of Puerto Rico, Río Piedras

Organizing Committee

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A Biographical Account of John Paul Richard Thomas

This symposium was conceived as an informal homage to a person that so many of us admire and respect, John Paul Richard Thomas, or, as his graduate students affectionally call him, "Dr. Gadget," in reference to all the gear that he brings to the field. We wish to emphasize that Richard has no intentions of hanging up his collecting rake in the foreseeable future. To the contrary, he continues to be actively involved in research. For instance, he recently coauthored an article describing 11 species of blindsnakes of the genus *Typhlops* from La Española (Hispaniola) and Cuba (Thomas and Hedges, 2007), is currently working on comprehensive taxonomic revisions of Caribbean species of *Sphaerodactylus* geckos and worm-lizards of the genus *Amphisbaena*, and continues to describe new species of West Indian amphibians and reptiles.

This conference is an overdue tribute to a respected and well-liked scientist who has been one of the most influential figures in West Indian herpetology for the last five decades. Since 1976, Richard's efforts have continued to advance herpetological research at the University of Puerto Rico, Río Piedras, a program of study that has given a number of young students the opportunity to participate in research, and, in several cases and under Richard's watchful eyes, has served as a springboard to the development of their professional careers. Although the majority of Richard's research is centered on systematics (the study of the diversity of life), and focuses on blindsnakes, sphaerodactylid geckos, and leptodactylid frogs, his scientific curiosity extends beyond taxonomy and phylogenetics. He is a *true naturalist* who is concerned with all aspects of organismal biology, and the scientific program of this symposium reflects the broad scope of his interests.

Richard was born in Jacksonville, Florida, on May 2, 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. Between 1948 and 1958 he lived in Bogotá and Barranquilla, Colombia (where he learned Spanish), New York (Long Island), Florida (Jacksonville [again] and Tampa), and South Carolina (Cheraw), and at all 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 (for a short period of time) and another on a property outside of town, where his father allowed him to keep some venomous snakes. Although the latter was not so much a snake pit as a large snake cage sunk in the ground, it allowed Richard to be in close proximity to his favorite animals.

While attending high school in Cheraw, Richard met Albert Schwartz (1923–1992), the most influential contributor to West Indian systematics (Duellman, Thomas, and Henderson, 1993, 1996). At the time, Al was the curator of vertebrates at the Charleston Museum (Charleston, South Carolina) and was engaged in various projects on turtles, frogs, salamanders, and shrews from the southeastern United States. Al invited Richard to the field, an invitation that had marked the beginning of a close personal friendship that would later become a lasting professional collaboration.

Richard's collecting activities led to his first scientific contribution: a donation of a series of *Nerodia sipedon* (Northern Watersnake) x *N. fasciata* (Southern Watersnake) hybrids to Roger Conant, specimens that were cited in Conant's article on hybridization in *N. fasciata* (Conant, 1963) 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, during which he was stationed in Texas (Houston), France, Morocco, and Florida (Port Richey). 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.

Wilfred T. Neill, Jr. (1922–2001) also exerted an early positive influence on Richards' career. Neill never completed his doctoral degree, but he was a recognized herpetologist and a true polymath who published numerous articles and books on herpetology, biogeography, archaeology, 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 talking about a wide variety of topics and conducting local fieldwork.

In 1957, Richard accompanied Albert Schwartz on a trip to Cuba. This was Richard's first collecting trip to the West Indies, and the experience defined his professional career. During the expedition, Richard collected for the first time various species of *Sphaerodactylus* and *Typhlops*, two genera on which he later became one of the world's leading experts. The trip also marked the official beginning of a scientific collaboration between Al and Richard that extended for two decades and resulted in 14 publications that collectively described eight species and 27 subspecies of lizards and snakes of various genera. One of these contributions was the first checklist of West Indian amphibians and reptiles (Schwarz and Thomas, 1975).

Starting in 1963, Richard made numerous collecting trips to the West Indies and South America. With Al Schwartz, he traveled to the Cayman Islands, the Lesser Antilles, the Dominican Republic, Haiti, Jamaica, and the Bahamas. His first visit to Puerto Rico for field work was in 1963, with successive trips in 1964, 1965, and later. Richard first went to Perú in 1968. He was still an undergraduate student at the University of South Florida, but George H. Lowery, Jr., 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 Perú, in 1971 and 1974.

Richard obtained his Ph.D. at LSU, working in the laboratory of Douglas A. Rossman, and expert on the systematics of *Thamnophis* gartersnakes. For his doctoral dissertation, Richard conducted a comprehensive revision of blindsnakes of the genus *Typhlops* in the West Indies (Thomas, 1976), a study that laid the foundation for all future systematic work on the genus, which has since doubled in number of species, thanks in great part to Richard's efforts. Not surprisingly to those who have been with Richard in the field, during the extensive fieldwork for his dissertation he collected

a wide variety of "herps" (*i.e.*, amphibians and reptiles), an effort that resulted in the description of a significant number of new species, including representatives of the genera *Eleutherodactylus*, *Amphisbaena*, *Anolis*, *Diploglossus*, and *Sphaerodactylus*. By the end of his doctoral studies Richard had become the world's leading authority on the systematics of West Indian *Amphisbaena, Sphaerodactylus,* and *Typhlops*, three of the most speciose genera of the Caribbean herpetofauna, and of threadsnakes of the genus *Leptotyphlops*. 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, a mammal systematist, died in an automobile accident within two years of taking a professorial appointment at Clarion University, Pennsylvania.)

Shortly after receiving his doctoral degree, Richard joined the faculty of the Department of Biology at the University of Puerto Rico, Río Piedras (UPRRP). Ever since 1976 he has maintained an active research program at this institution, producing approximately 60 publications and graduating 14 Master's and doctoral students. The latter achievement is a testament to Richard's familiarity with various fields of study, and of his ability to encourage students to become actively involved in biological research. Under Richard's supervision, students have conducted research on topics as diverse as feeding and behavioral ecology, venom function in snakes, community structure of *Anolis* lizards, thermal ecology of *Sphaerodactylus* geckos, and systematics of *Eleutherodactylus*, *Anolis*, and *Sphaerodactylus*. Few researchers have contributed as much as Richard has to the development of organismal biology at UPRRP, and none of his graduate or undergraduate students has ever regretted working with him. *Working with him* is an accurate expression, because Richard treats his students as junior colleagues, not simply as data collectors, and he is more than just a mentor to them. He is first and foremost a friend who often goes the extra distance to provide his help when such additional assistance is needed.

Richard and S. Blair Hedges (then a doctoral student at the University of Maryland, College Park) met for the first time at the annual meeting of ichthyologists and herpetologists in Raleigh, North Carolina, in 1982. Although meeting a colleague for the first time at a scientific gathering is a relatively common event, the encounter between Richard and Blair perhaps was facilitated by divine intervention, because Richard rarely attends scientific conferences, preferring instead "to spend that time conducting fieldwork, 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 and productive collaboration. This collaboration represented the 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 close friends and colleagues, an association that has resulted in 23 publications (and counting) and descriptions of 35 new species of anurans, lizards, and snakes. An excellent example of the their complementary expertise is the description of a new species of blindsnake from Puerto Rico, *Typhlops hypomethes* (Hedges and Thomas, 1991). This discovery

was made possible by Richard's keen eye and ability to quantify morphological differences, combined with Blair's intimate knowledge of molecular systematics, a combined effort that produced compelling evidence for the recognition of a species whose holotype was collected by Richard on the UPRRP Campus!

VIGNETTES

- Those who have had the opportunity to be with Richard in the field are well aware of his remarkable collecting skills. For him it is second nature to glance at an area and accurately point out the precise spot where collecting will result in a nice series of specimens. This ability is even more impressive when one considers than in most cases Richard is looking for highly secretive (*e.g.*, *Amphisbaena, Sphaerodactylus, Typhlops*) species.

- Richard is also adept at collecting arboreal taxa. The first specimen of the Puerto Rican *Anolis occultus* was collected in 1963 in Jayuya by Juan A. Rivero, but only one additional specimen was obtained (in Maricao) before Ernest E. Williams (1914–1998; 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 Richard and Al Schwartz collected 39 additional specimens of this lizard at five localities in the mountains of southern and northeastern Puerto Rico, significantly extending the geographic distribution of the new species to encompass most of the Cordillera Central of Puerto Rico, and the Sierra de Luquillo (Williams, Rivero, and Thomas, 1965).

- Equally notable is Richard's ability to quickly identify, in most instances to the species level, many of the vascular plants, invertebrates, and birds present in the area.

- Richard's description of the threadsnake *Leptotyphlops pyrites* (Thomas, 1965c) added a new taxonomic *family* (Leptotyphlopidae) to the herpetofauna of Hispaniola.

- Richard has *twice* described the world's smallest amniote vertebrate: first was *Sphaerodactylus parthenopion* from Virgin Gorda, British Virgin Islands (Thomas, 1965a), followed by the slightly smaller *Sphaerodactylus ariasae* (Hedges and Thomas, 2001) from Isla Beata, Hispaniola.

- Richard has described four new species of Puerto Rican herps: *Eleutherodactylus coqui* (Thomas, 1965b (1966)), *Amphisbaena xera* (Thomas, 1966), *Typhlops hypomethes* (Hedges and Thomas, 1991), and *Eleutherodactylus juanariveroi* (Ríos-López and Thomas, 2007). Since Richard's description of *Eleutherodactylus coqui*, the word "coquí" has become synonymous with the genus *Eleutherodactylus* in Puerto Rico. Richard also coauthored the study that reported the chromosomal data that demonstrated that the "Lagartijo del Bosque Seco" (*Anolis cooki*) is as a species

distinct from the "Lagartijo Común" (*Anolis cristatellus*) from Puerto Rico (Gorman, Thomas, Atkin, 1968).

- Richard is an outstanding illustrator. He is responsible for the majority of the illustrations that appear in his publications, and the level of detail of his drawings is astonishing. One only needs to look at his drawings of *Typhlops* hemipenes to appreciate his ability to illustrate complex structures.

- At least five species and one subspecies have been named in Richard's honor: a Cuban coquí, *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 and Schwartz, 1966), a Cuban gecko, *Sphaerodactylus richardi* (Hedges and Garrido, 1993), a Cuban millepede, *Amphelictogon thomasi* (Pérez-Asso, 1996), and a butterfly from Haiti, *Calisto thomasi* (Johnson and Hedges, 1998).

Today (June 6, 2009), many of Richard's colleagues, former and current undergraduate and graduate students, and personal friends from Puerto Rico, various states in the United States, and Australia have gathered to recognize his invaluable contributions to West Indian herpetology, and his influential role in educating the next generation of Puerto Rican herpetologists.

Richard, we sincerely thank you for enthusiastically and kindly sharing your extensive knowledge with us during all these years, for your sincere friendship, and for all those educational and productive collecting trips in which we got to see the latest gadgets you purchased. Please sit comfortably and enjoy this extremely well-deserved conference in your honor.

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Scientific Program

INTRODUCTION TO THE SYMPOSIUM

8:30 A.M. **A tribute to J. P. Richard Thomas: "the man who leaves no stone unturned"**
Javier A. Rodríguez Robles* and Manuel Leal*

9:00 A.M. **Richard Thomas: the man behind the rake**
S. Blair Hedges

TURTLES AND IGUANAS FROM MONA ISLAND

9:30 A.M. **Two decades of sea turtle research on Mona Island, Puerto Rico**
Carlos E. Diez* and Robert P. van Dam

9:45 A.M. **The road to the recovery of the Mona Island Iguana, *Cyclura cornuta stejnegeri***
Miguel A. García*, Néstor Pérez Buitrago, Alberto O. Álvarez, Raymond L. Tremblay, María E. Pérez, and Peter J. Tolson

10:00 A.M. COFFEE BREAK

SNAKES

10:25 A.M. **Adaptations of sea snakes**
Harold F. Heatwole

10:40 A.M. **What is the status of the Puerto Rican Boa (*Epicrates inornatus*) after 39 years since its designation as an endangered species?**
Alberto R. Puente Rolón*, Sondra I. Vega Castillo, and Coralys Ortiz Maldonado

10:55 A.M. **The demography of the Virgin Islands Boa (*Epicrates monensis granti*) on Cayo Diablo, Puerto Rico**
Peter J. Tolson, Miguel A. García*, Raymond L. Tremblay, and María E. Pérez

* = Presenter

SNAKES (CONTINUED)

11:10 A.M. Preys and predators of the Puerto Rican Racer, *Alsophis portoricensis*
Raúl A. Pérez Rivera*, Alberto C. Molina Opio, and Leopoldo Miranda

ENTOMOLOGICAL CONTRIBUTION

11:25 A.M. Gentle Africanized bees on an oceanic island (St. Croix, U.S. Virgin Islands)
Bert Rivera Marchand, Devrim Oskay, and Tugrul Giray*

LIZARDS

1:30 P.M. Phenotypic plasticity in lizard eggs among years and sites
C. Richard Tracy*, Keith A. Christian, and Warren P. Porter

1:45 P.M. Comparative thermal biology of four closely related *Anolis* lizards at Soroa, Cuba
Paul E. Hertz*, Jonathan B. Losos, Manuel Leal, Richard E. Glor, Lourdes Rodríguez Schettino, Ada Chamizo Lara, and Vilma Rivalta González

2:00 P.M. Predicting impacts of climate warming on the thermal biology of Puerto Rican lizards
Raymond B. Huey*, Joshua J. Tewksbury, Paul E. Hertz, Héctor J. Álvarez Pérez, and George C. Gorman

2:20 P.M. Visual motion perception and motion patterns in visual displays of *Anolis* lizards
Leo J. Fleishman

2:35 P.M. Genetic divergence in the "Lagartijo Jardinero del Sur" (*Anolis poncensis*) and the "Lagartijo del Bosque Seco" (*Anolis cooki*) from Puerto Rico
Javier A. Rodríguez Robles*, Tereza Jezkova, and Manuel Leal

2:50 P.M. Homing behavior in the "Lagartijo de Barba Amarilla" (*Anolis gundlachi*) from Puerto Rico
Brian J. Powell and Manuel Leal*

LIZARDS (CONTINUED)

3:05 P.M. **New perspectives on the evolutionary history of gekkotan lizards in the Caribbean**
Aaron M. Bauer* and Todd R. Jackman

3:20 P.M. COFFEE BREAK

3:40 P.M. **A new clade of sphaerodactyl geckos discovered using morphological and molecular data**
Juan D. Daza, Tony Gamble, Aaron M. Bauer*, Laurie J. Vitt, and Guarino R. Colli

3:55 P.M. **Gene flow in *Sphaerodactylus* geckos among islands of the Puerto Rican Bank**
Tony Gamble*, Juan D. Daza, Luis A. Padilla, and Richard Thomas

AMPHIBIANS

4:10 P.M. **Implications of skin reflectivity for basking behavior and body temperature of amphibians**
Christopher R. Tracy*, C. Richard Tracy, and Keith A. Christian

4:25 P.M. **Physiological characteristics of invasive Cane Toads (*Bufo marinus*): a comparison between the invading front and long-term resident populations**
Christopher R. Tracy, Keith A. Christian*, John Baldwin, Gregory Betts, and Ben L. Phillips

4:40 P.M. **Seasonality as a driver of enzootic chytrid infections in Puerto Rican coquíes**
Patricia A. Burrowes*, Ana V. Longo, and Rafael L. Joglar

4:55 P.M. **Reproductive biology of the "Coquí Llanero" (*Eleutherodactylus juanariveroi*) in a palustrine wetland in Puerto Rico**
Neftalí Ríos López

EPILOGUE

Concluding remarks
Richard Thomas

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