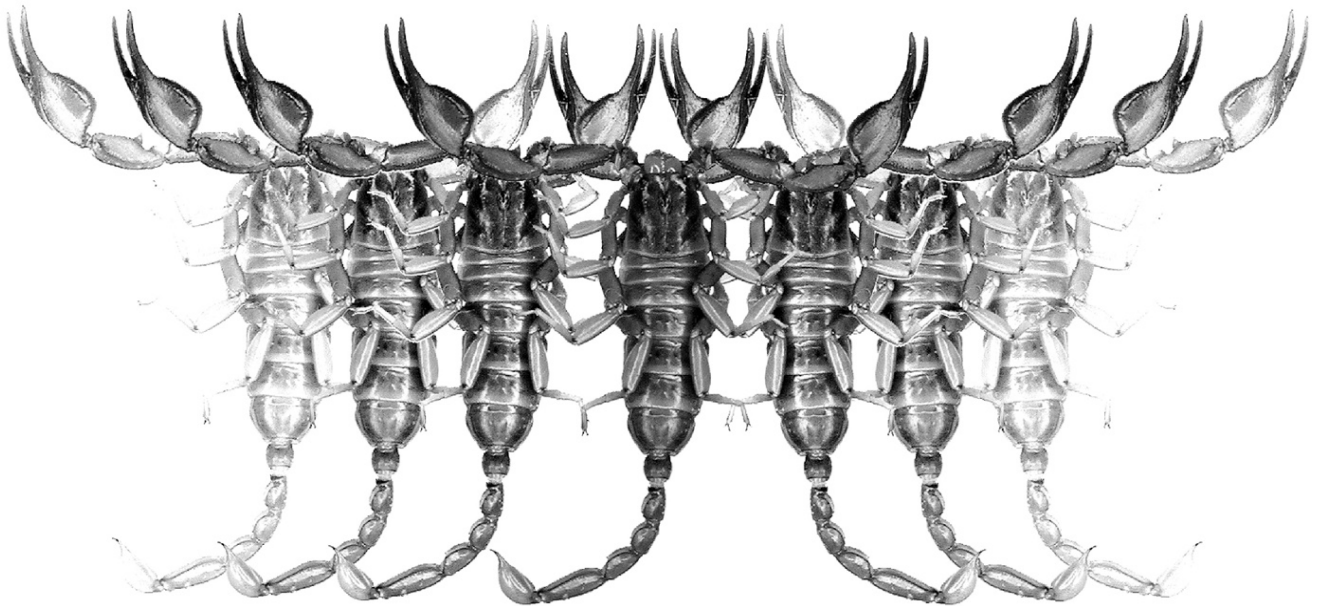


Euscorpilus

Occasional Publications in Scorpiology



In Memoriam Richard F. Ayrey

(1948 – 2024)

DeBoer-Ayrey, Myers, Bryson, Webber, Graham, Lowe, Fet & Kovařík

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Euscorpius

Occasional Publications in Scorpiology

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In Memoriam Richard F. Ayrey

(1948 – 2024)

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<http://zoobank.org/urn:lsid:zoobank.org:pub:383E2A21-BBE2-44FD-907B-653ED6641313>

Summary

This is a memorial issue honoring Richard F. Ayrey (1948 – 2024), a US scorpiologist. A full list of his 26 works is appended, as well as a list of scorpion taxa described by Richard (two genera and 19 species of Vaejovidae), and a map of their type localities in the USA and Mexico.

He can make springs flow into desert lands.

Psalm 107:35

Richard Francis Ayrey passed from this world on January 4, 2024, in Flagstaff, Arizona. He was born in Manhattan, New York on August 17, 1948.

Even as a young boy he loved frogs and read books on scorpions and snakes and dreamed of moving to Arizona to explore the desert. He was an original member of the American Arachnological Society.

He was an RN in New York in his early 20's. He moved to Tucson, AZ in the early 70's to work as an RN while completing a BS in Wildlife Management at the University of Arizona. He later moved to Flagstaff to pursue a Master's at Northern Arizona University. He was also employed by W.L. Gore and Associates as a Machinist/Maintenance Associate where he rose to be a Product Specialist for Gore-Tex Suture using his nursing background to promote Gore-Tex Suture to surgeons around the world. He was in Real Estate for over 35 years and Owner/Broker of Northland Realty LLC. He worked for USA

Oncology for 13 years and loved his clients with humor and innate nursing expertise.

He was loved for his love of nature, photos of birds, and especially scorpions. He has published, alone or as a co-author, 26 papers, and described two new genera and 19 species. In 2019, a new species of scorpion from California, *Catalinia ayreyi*, was named in his honor.

Rich loved to name the new species after those who helped collect specimens like *Vaejovis deboerae* named after his wife, Melinda DeBoer-Ayrey. Rich received an email about a scorpion sighting on Mt. Lemon just outside of Tucson, AZ. It was a pleasure to take a trip to that famous Sky Island, going to flip some rocks to look for the reported scorpions. Sure enough, Melinda found the first one.

Rich was forever making people aware that he had dropped the “-chard” off his name years ago and went by “Rich”. He was born rich, and he would die rich, even though he was the son of a garbage man who drove tanks in World War II and the Mayor's limo in Manhattan, New York.

Melinda DeBoer-Ayrey



Figure 1. Rich Ayrey in 2010, in Pune, India, while flipping rocks.

Robert W. Bryson, Jr.

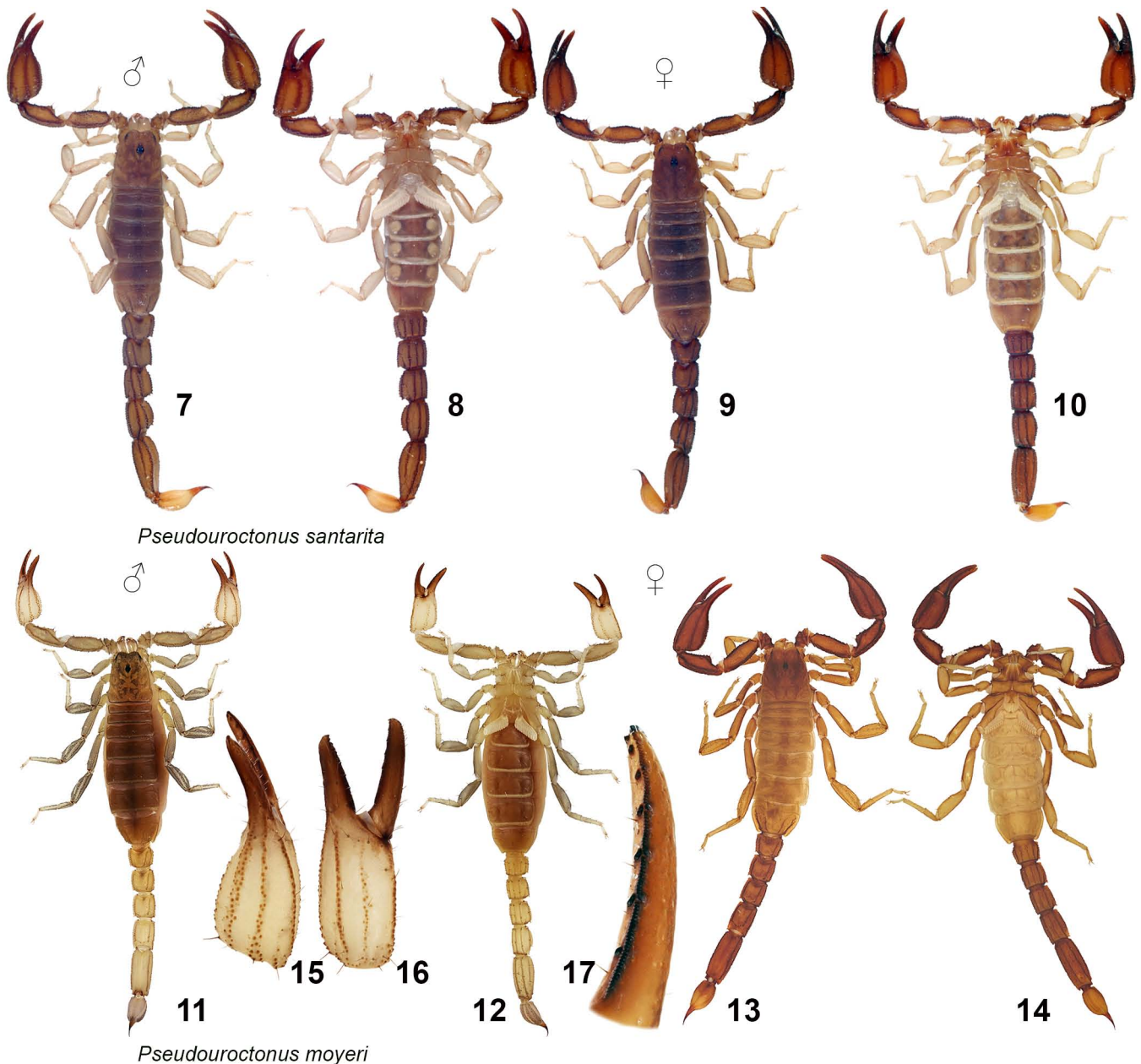
The world lost a great person with the passing of Rich Ayrey. Rich was passionate, knowledgeable, patient, and generous - a combination as unique and rare as the scorpions he studied. I first met Rich around 2008 while I was a graduate student at UNLV. I had found a few interesting scorpions in the pine-oak forests of Arizona and was told he would help identify them. This fortuitous meeting led to a fifteen-year-long friendship with a person as kind and caring as they come. He readily shared all his knowledge about montane scorpions during those first few conversations, and immediately invited me to collaborate with him on future projects. A few years later, he selflessly gave up a new species he was working on describing so that I could finish describing the same species with a different group of researchers (*Vaejovis tenuipalpus*; Sissom et al., 2012). He even shared with me spots where I could find the new species in areas I hadn't yet searched. Shortly afterwards I was able to return the favor and we collaborated on the description of a new montane scorpion species from

northern Sonora, Mexico (*Vaejovis bandido*; Graham et al., 2012). We published it in the *Journal of Arachnology*, helping Rich accomplish one of his long-time goals of publishing in his favorite journal.

In the spring of 2012, we shared a memorable trip to northwestern Arizona in search of *Wernerius mumai*, a scorpion that at the time was known from less than a dozen specimens. I had been fortunate to find a small juvenile on a previous trip, and Rich had yet to find the species despite many attempts. The excitement was palpable as we left Kingman loaded up with snacks and headed out into the rocky desert foothills as evening fell. After sharing several great stories, we arrived at the destination and started walking along the roadside with blacklights. *Serradigitus* were common, and each one crawling along the rocks caused our hearts to skip a beat, hoping it was a *Wernerius*. After an hour of false sightings, we came upon an unusual sight: a small adult scorpion hanging upside down under a rock jutting out of a rocky embankment. The scorpion's body was elevated off the rock in an erect position, and the tail was curled over the body. The scorpion remained motionless until we gently collected it with forceps.



Figure 2–6: Scorpion taxa (Vaejovidae) described by Rich Ayrey, FKCP (personal collection of František Kovařík, Prague, Czech Republic). **Figure 2.** *Serradigitus miscionei* Ayrey, 2011, female paratype. **Figure 3.** *Vaejovis brysoni* Ayrey & Webber, 2013, female paratype. **Figure 4.** *Vaejovis deboerae* Ayrey, 2009, female topotype. **Figure 5–6.** *Vaejovis crumpi* Ayrey & Sogleglad, 2011, male (5) and female (6) topotypes. Photographed by František Kovařík.



Figures 7–14: Scorpion taxa (Vaejovidae) described by Rich Ayrey. **Figures 7–10.** *Pseudouroctonus santarita* Ayrey & Soleglad, 2015, USA, Arizona, Madera Canyon, Santa Rita Mts., 31°43.599'N 110°52.528'W, 5062 ft a. s. l., FKCP, male and female, dorsal (7 and 9) and ventral (8 and 10) views. **Figures 11–17.** *Pseudouroctonus moyeri* Ayrey, Kovařík & Myers, 2021, USA, Arizona, Graham Co., Pinaleno Mnts, 32.65077°N 109. 80945°W, 1868 m a. s. l., male paratype, FKCP dorsal (11) and ventral (12) views, pedipalp chela dorsal (15) and external (16) and movable finger (17), female holotype, USNM (United States National Museum, Smithsonian Institution, Washington, DC, USA), dorsal (13) and ventral (14) views.

After a quick examination, we both cheered in triumph at our first *Wernerius*, an adult male! A few *Serradigitus* later, we encountered another adult male *Wernerius* on top of a flat rocky ledge, also with its body in a stilted erect position with its tail curled over its back. This one too remained motionless until collected. Soon after finding the second *Wernerius* the moon rose higher in the night sky and scorpion activity ceased. On our drive back to Kingman we celebrated our findings, hypothesized about early season scorpion activity, told a few

more tall tales, and ultimately called it a night. Rich went on to find many more *Wernerius* that year, and later published an article about *W. mumai* (Ayrey & Myers, 2020), noting bimodal periods of activity in the species. Turns out that prior to our spring 2012 trip, he was searching for the species when it was just too hot!

Rich, you will be missed.



Figure 18. Rich with his grandson, Eli, on the trip they found the type specimens of *Vaejovis elii*. Images 1 and 18 kindly provided by Melinda DeBoer-Ayrey.

Victor Fet

Unlike others who wrote here, I did not have the privilege to know Rich Ayrey personally. However, his flow of contributions to our *Euscorpius* journal, of which he was among the most loyal authors for over 14 years, made him a longtime virtual friend. Rich's first described taxon was *Vaejovis deboerae*, named after his wife in 2009 — and one of the last ones, *Vaejovis elii*, named after his grandson in 2020.

Like many of us who love mountains and deserts, I could feel and appreciate Rich's endless energy and enthusiasm. He was faithful in pursuing his passion as a "classical naturalist", every year revealing to us more and more remarkable Sky Island endemics. This was an expected but never documented, amazing diversity, first of all of the genus *Vaejovis*, trapped on the mountaintops of the American Southwest. And I gladly use Rich's taxa and their maps of distribution as textbook examples in my Biogeography class to illustrate the spectacular historical dynamics of these ecosystems.

Rest in peace, dear colleague.

Matthew R. Graham

Rich was a remarkable scorpion taxonomist whose infectious enthusiasm and genuine warmth left an indelible mark on the field. Rich's unwavering enthusiasm for scorpions was a constant source of inspiration, and his jovial nature brought joy to all who had the privilege of knowing him.

I vividly recall one unforgettable night when Rich, Mike Webber, and I embarked on an adventure in the Cerbat Mountains, equipped with our trusty ultraviolet lights. As we drove along the long, dark, and somewhat slippery dirt road that wound its way up into the mountains, a mixture of anticipation and nervousness filled the air of the vehicle—for me and Mike, that is. However, Rich, ever fearless and undeterred, radiated a sense of calm and happiness. At the 6,000' ridge line, we made a surprising discovery—the presence of *Centruroides sculpturatus* at a much higher elevation than Mike and I had anticipated. To my amazement, Rich, who had collected the species from various habitats throughout the Sonoran Desert, was not surprised at all. He'd seen them at such elevations before. Nonetheless, to Rich, every scorpion we encountered that night became a cause for celebration, met with exclamations of delight. His descriptions ranged from calling them "cute" to exclaiming "what a beauty!"

Rich's dedication to his scorpions was unwavering, and his childlike wonder infused every moment we spent together. Rich's legacy is a reminder to all of us to cherish our work, approach it with boundless curiosity, and embrace unbridled enthusiasm. As we say goodbye to our friend and colleague, may his contributions to vaejovid taxonomy inspire us as we explore the fascinating world of these enigmatic creatures.

Graeme Lowe

Although I only met Rich briefly in 2011, I was profoundly impressed by his warmth, friendliness, and his deep passion and love of nature, especially scorpions. Ours was a fortuitous encounter in the desert, scorpion hunter meets scorpion hunter, with a long backstory. In the Fall of 1992, I was surveying a remote site in the Black Mountains of Arizona (Locality #023 in my notebook), on a trip with a friend. While UV scanning a roadcut, a small scorpion moving across a rock face caught my attention. Safely captured in a plastic Ziploc, under a flashlight I saw a subaculear tubercle and imagined that I had rediscovered *Vaejovis spicatus*, an enigmatic species whose last recorded collection was from California in 1973. In 1993, David Sissom described the Arizona form as a related but different species, *V. mumai*, based on a male holotype in AMNH collected in 1969 from a different site in the same mountains.

Many years later on a trip to Arizona in 2011, by myself this time, I returned to Locality #023 to look for *V. mumai* (= *Wernerius mumai*). This was not an easy site to find on a pitch-black night, nearly 20 years later. As I was beginning nocturnal UV searches, I noticed vehicle headlights approaching in the distance. This was unexpected in such a remote and isolated locality, far from human habitation, and could have been cause for some concern. However, I need not have worried. As the car pulled up, the occupants cautiously asked me what I was doing, so I said, "collecting scorpions". Coincidentally, they were doing the same thing. It was Rich and Melinda, out for a fun night of their own, looking for *W. mumai*! The rest of the evening passed by too quickly, as we strangers in the night, our paths crossing by chance under the dark skies of a New Moon, got to know each other. We exchanged tales of exciting desert collecting trips and enjoyed discussing anything and everything about scorpions. Only afterwards did I realize that this was not a totally random rendezvous. Earlier, I had relayed Locality #023 coordinates to Mike Soleglad, who was working with Rich on the taxonomy of vaejovids. But we did not coordinate our field trips. That night we found several more *W. mumai*, and later Rich and Brandon Myers would write an important paper about this elusive species.

My surprise encounter with Rich and Melinda was one of my most memorable and pleasant field experiences in a lifetime of studying scorpions. It was an honor to meet them both. Rich was a regular author of many outstanding articles in *Euscorpius*. He was a tireless contributor to our knowledge about these fascinating animals, a champion in promoting their appreciation, and an invaluable mentor to younger scientists. He will be sorely missed.

Brandon T. Myers

My first conversation with Rich started with a Facebook message. A friend had found what he thought was a new species of *Vaejovis* in southeastern Arizona. Rich replied

Scorpion taxa described by Rich Ayrey			
Genus	Family Vaejovidae		
1	<i>Catalinia</i> Soleglad, Ayrey, Graham & Fet, 2017	Type species <i>Vejoavis minimus</i> Kraepelin, 1911	
2	<i>Graemeloweus</i> Soleglad, Fet, Graham & Ayrey, 2016	Type species <i>Uroctonus iviei</i> Gertsch & Soleglad, 1972	
Species	Type locality	Coordinates	
	Genus <i>Kochius</i> Soleglad & Fet, 2008		
1	<i>Kochius colluvius</i> Ayrey, Jones & Myers, 2019	USA, Arizona, Pima County, near Tucson, Avra Valley	32.23694, -111.17148
	Genus <i>Pseudouroctonus</i> Stahnke, 1974		
2	<i>Pseudouroctonus kremani</i> Ayrey & Soleglad, 2015	USA, Arizona, Pima County, Santa Catalina Mountains, Catalina Highway, Seven	32.35202, -110.72495
3	<i>Pseudouroctonus santarita</i> Ayrey & Soleglad, 2015	USA, Arizona, Santa Cruz County, Santa Rita Mountains, Madera Canyon, 1641 m	31.71325, -110.87507
4	<i>Pseudouroctonus brysoni</i> Ayrey & Soleglad, 2017	USA, Texas, Jeff Davis County, Hwy 118 N Alpine, Musquiz Canyon, 1470 m	30.53603, -103.84914
5	<i>Pseudouroctonus moyeri</i> Ayrey, Kovařík & Myers, 2021	USA, Arizona, Pinaleño Mountains, Graham County, Mount Graham, 1868 m	32.65077, -109.80945
	Genus <i>Serradigitus</i> Stahnke, 1974		
6	<i>Serradigitus miscionei</i> Ayrey, 2011	USA, Arizona, Cochise County, Walnut Gulch	35.23728, -112.11234
	Genus <i>Vaejoavis</i> C. L. Koch, 1836		
7	<i>Vaejoavis deboerae</i> Ayrey, 2009	USA, Arizona, Pima County, Santa Catalina Mountains, Mt. Lemmon	32.38694, -110.69583
8	<i>Vaejoavis crumpi</i> Ayrey & Soleglad, 2011	USA, Arizona, Yavapai County, Prescott	34.54000, -112.46861
9	<i>Vaejoavis halli</i> Ayrey, 2012	USA, Arizona, Gila County, Mount Ord	33.90504, -111.40930
10	<i>Vaejoavis bandido</i> Graham, Ayrey & Bryson, 2012	Mexico, Sonora, Sierra de los Ajos, 1840 m	30.98017, -109.96685
11	<i>Vaejoavis trinityae</i> Ayrey, 2013	USA, Arizona, Coconino County, Mogollon Rim	34.52010, -111.50740
12	<i>Vaejoavis brysoni</i> Ayrey & Webber, 2023*	USA, Arizona, Pima County, above Molino Basin on Catalina Highway near Seven	32.35796, -110.72538
13	<i>Vaejoavis grayae</i> Ayrey, 2014	USA, Arizona, Yavapai County, Yarnell	34.22250, -112.74972
14	<i>Vaejoavis grahami</i> Ayrey & Soleglad, 2014	USA, Arizona, Pima County, Santa Rita Mountains, Madera Canyon	31.72510, -110.88010
15	<i>Vaejoavis troupi</i> Ayrey & Soleglad, 2015	USA, Arizona, Cochise County, Whetstone Mountains, 1607 m	31.81093, -110.39370
16	<i>Vaejoavis patagonia</i> Ayrey, 2018	USA, Arizona, Santa Cruz County, Patagonia	31.46630, -110.73477
17	<i>Vaejoavis stetsoni</i> Ayrey & Myers, 2019	USA, Arizona, Graham County, Galiuro Mountains	32.46248, -110.29403
18	<i>Vaejoavis elii</i> Ayrey, 2020	USA, Arizona, Yavapai County, Mingus Mt., 2291 m	34.70111, -112.13939
19	<i>Vaejoavis miscionei</i> Myers & Ayrey, 2021	USA, Arizona, Cochise County, Mule Mountains, 1834 m	31.45870, -109.94304
	Scorpion taxa named after Rich Ayrey (Vaejovidae)		
	<i>Catalinia ayreyi</i> Teruel & Myers, 2019	USA, California, Orange County, 2.2 km E of Villa Park	33.81611, -117.81111

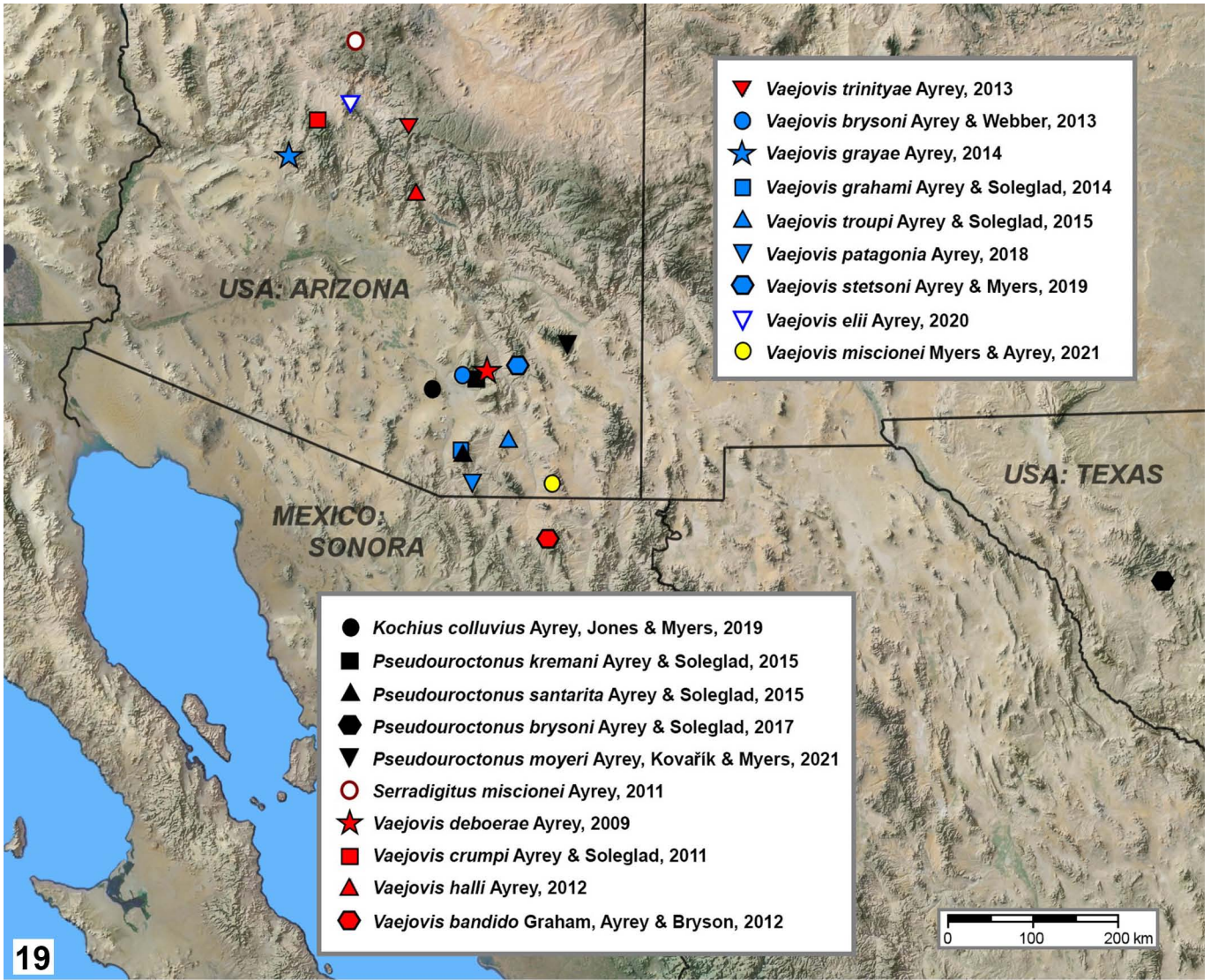
Table 1. Scorpion taxa (Vaejovidae) described by Rich Ayrey and named after him.

**V. brysoni* has been synonymized with *V. deboerae* Ayrey, 2009 (Jochim et al., 2020).

quickly asking me to call him. From the beginning, talking with Rich felt like speaking with a friend I had known for my entire life. After some introductions and jovial conversation, we got back to the topic at hand. Immediately, Rich knew the scorpion was not a species of *Vaejoavis* but he wanted me to discover for myself what it was. He sent me some links with keys for various genera and species, with instructions on certain things to look for. After a few days of reading and hard work, I determined it was in fact *Serradigitus miscionei*. Once

I got back in touch with Rich, we spent hours on the phone discussing what led me to my discovery.

Over the next few years, Rich and I would talk on the phone for hours, multiple times a week. He gave me homework, lectured me in all aspects of scorpion biology, and provided me with an education that I otherwise would have never received. More than that, he taught valuable life lessons, and we talked about everything we could fit in our short time frame, never running out of topics to discuss.



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Figures 19–20. **Figure 19.** A map of type localities of scorpion taxa described by Rich Ayrey. **Figure 20.** Type locality of *Pseudouroctonus moyeri* Ayrey, Kovařík & Myers, 2021 (see fig. 35 in Ayrey & al., 2021: 10)



Figures 21–22. *Wernerius mumai* (Sissom, 1993) (Photo by Graeme Lowe), male, and its type locality Gold Road, Arizona (see fig. 18 in Ayrey & Myers, 2020: 8).

Eventually, Rich trusted me enough to bring me into his process of describing a new species of scorpion. He worked with me in every step, from etymology to systematics and ecology. He pushed me to learn more, to get outside of my comfort zone and learn from other scientists. I learned so many valuable things from people all across the realm of scorpion biology thanks to Rich's encouragement. All of this allowed me to increase my knowledge and assist him in anything he needed.

I was fortunate enough to work on many papers with Rich, with plans for much more. One of my favorite moments in life was telling him that Dr. Rolando Teruel and I had decided to name a new species of *Catalinia* after him, *Catalinia ayreyi*. That is a phone call I will never forget. He was appreciative and nearly speechless, which was an accomplishment on its own!

I will forever cherish the conversations I had with Rich. I wish there could have been more over the years to come. But I know my life is so fulfilled in many ways thanks to Rich Ayrey.

Michael M. Webber

The passing of Rich has left a profound void in our community. He was a colleague, friend, and an inspiration to many. I'm sure anyone that knew him will remember his infectious enthusiasm, boundless knowledge, and unwavering kindness. I first met Rich when he extended me an invitation to describe a new scorpion species. His dedication to scorpion biology was undeniable, and evident in his many published contributions. His impact extended far beyond his academic achievements. His genuine warmth and encouragement fostered a welcoming environment for researchers new to the field as I was several years ago. Although he will be missed by family and friends, his legacy will live on through the countless lives he touched, research he inspired, and the knowledge he so freely shared, which will continue to ripple through the scientific community. We can honor his memory by carrying forward his spirit of collaboration, enthusiasm, and kindness.

A full list of publications (26) by Rich Ayrey

- AYREY, R. F. 2009. Sky island *Vaejovis*: A new species (Scorpiones: Vaejovidae). *Euscorpius*, 86: 1–12.
- AYREY, R. F. 2011a. *Serradigitus miscionei* (Scorpiones: Vaejovidae), a new species from southern Arizona. *Euscorpius*, 111: 1–13.
- AYREY, R. F. 2011b. An anomaly of pectinal organs in *Vaejovis lapidicola* (Scorpiones: Vaejovidae). *Euscorpius*, 130: 1–6.
- AYREY, R. F. & M. E. SOLEGLAD. 2011. A new species of *Vaejovis* from Prescott, Arizona (Scorpiones: Vaejovidae). *Euscorpius*, 114: 1–15.
- AYREY, R. F. 2012. A new *Vaejovis* from the Mogollon Highlands of Northern Arizona (Scorpiones: Vaejovidae). *Euscorpius*, 148: 1–13.
- GRAHAM, M. R., R. F. AYREY & R. W. BRYSON, Jr. 2012. Multivariate methods support the distinction of a new highland *Vaejovis* (Scorpiones: Vaejovidae) from the Sierra de los Ajos, Mexico. *Journal of Arachnology*, 40(3): 281–290.
- AYREY, R. F. 2013a. A new species of *Vaejovis* from the Mogollon Rim of northern Arizona (Scorpiones: Vaejovidae). *Euscorpius*, 176: 1–13.
- AYREY, R. F. 2013b. Reproduction and birth in the “vorhiesi” group of the genus *Vaejovis* (Scorpiones: Vaejovidae). Part I. Clutch size. *Euscorpius*, 166: 1–15.
- AYREY, R. F. & M. M. WEBBER. 2013. A new *Vaejovis* C. L. Koch, 1836, the second known *vorhiesi* group species from the Santa Catalina Mountains of Arizona (Scorpiones, Vaejovidae). *ZooKeys*, 270: 21–35.
- AYREY, R. F. 2014. A new species of *Vaejovis* from chaparral habitat near Yarnell, Arizona (Scorpiones: Vaejovidae). *Euscorpius*, 188: 1–13.
- AYREY, R. F. & M. E. SOLEGLAD. 2014. New species of *Vaejovis* from the Santa Rita Mountains, southern Arizona (Scorpiones: Vaejovidae). *Euscorpius*, 183: 1–13.
- AYREY, R. F. & M. E. SOLEGLAD. 2015a. New species of *Vaejovis* from the Whetstone Mountains, southern Arizona (Scorpiones: Vaejovidae). *Euscorpius*, 194: 1–10.
- AYREY, R. F. & M. E. SOLEGLAD. 2015b. New analysis of the genus *Pseudouroctonus* with the description of two new species (Scorpiones: Vaejovidae). *Euscorpius*, 211: 1–53.
- AYREY, R. F. 2016. *Pseudouroctonus peccatum* Tate et al., 2013, rediscovered. *Euscorpius*, 214: 1–5.
- SOLEGLAD, M. E., V. FET, M. R. GRAHAM & R. F. AYREY. 2016. *Graemeloweus*, a new scorpion genus from northern California, USA (Scorpiones: Vaejovidae). *Euscorpius*, 227: 1–38.
- AYREY, R. F. 2017. *Serradigitus miscionei*, the first vaejovid scorpion to exhibit parthenogenesis. *Euscorpius*, 241: 1–7.
- AYREY, R. F. & M. E. SOLEGLAD. 2017. A new species of the “apacheanus” group of genus *Pseudouroctonus* from western Texas (Scorpiones: Vaejovidae). *Euscorpius*, 237: 1–23.

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