

John Banister, Virginia's First Naturalist

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The journal *Banisteria* is named for a naturalist whose Virginia collections have been known to many botanists only through the citations in Linnaeus' *Species plantarum* as *Ray, hist., Pluk. aim. or phyt.* or *Moris. hist.* The Reverend John Banister (1650-1692) was Virginia's first university-trained naturalist. At the age of seventeen he had shown abilities and interests which earned him a scholarship as a chorister at Magdalen College, Oxford University. Although he was in training as a minister in the Anglican Church, he soon discovered nearby Oxford Physick Garden with its plants from much of the known world, and took particular interest in those from America. He attended Professor Robert Morison's lectures given in the Garden, and prepared specimens for an herbarium and a catalog. Professor Morison was busily engaged on his *Plantarum historiae universalis Oxoniensis*, a compendium of native and introduced plants. Having been impressed with Banister's interest and abilities, Morison influenced the Bishop of Oxford, Henry Compton, to send Banister as a minister to the James River area, but with his own interests in mind.

On shipboard after commenting on the *Sargassum* and boobies, which Banister called "gannetts," Banister landed in 1677 in Barbados and again at St, George, Granada. Sometime before Christmas 1677, the sailing ship *Hopewell* arrived in Jamestown, Virginia, with Banister hoping to meet the Governor. Because the Governor had returned to England, and the Deputy Governor had been killed, Banister proceeded upriver to the Falls, where he met William Byrd I, a young man of his own age. Byrd had come to Virginia, where in 1671 he inherited from his uncle several thousand acres of land, a few slaves, and a thriving trade with the Indians, particularly in rum, guns, hardware, and woolen yardage. Byrd was a practical businessman, interested in whatever natural products might be developed and traded with the mother country. Tobacco was at first the only export permitted by the Crown, but after 1682 trade in other commodities was developed. Iron production was one of Byrd's hopes, and after his purchase of Westover in 1688, he enthusiastically ordered plants from England. Byrd also acted as agent for Virginians for imports. He

became particularly important to Banister for arranging for the import of drawing materials, paper, gum arabic, and books. Ordering from such a distance had its disadvantages. As an example, on 8 August 1690 Byrd wrote to a London dealer, "I wonder you doe not So much as mention mr Banister's mony, though he gave me an Order for all in your hands (Which I know you reed) so that is imposible for mee to reckon with mr Banister." On 25 October he wrote again: "pray lett mee know what money you have reed & given credit for, on Mr Banisters account that hee & I may be able to Reckon."

In his letter written from "The Falls Apr. 6. 1679 To my much Esteemed Friend Dr. Robert Morison, Worthy Sir," Banister refers to a letter written perhaps in Barbados, but which we have not been able to locate. He tells of conflicts with "barbarous Enemies the Natives, not our Neighbors but some from the Northward . . . plundering & destroying all as well Indian as English Dutch or French that lye in their way, & are unprovided for them." After some detail of the conflict Banister turned to an account of the natural history. "This is a Country excellently well water'd & so fertile that it does or might be made to yield anything that might conduce to the pleasure or necessity of life. But want of Peace, too much land & ye great croppes of Tobacco men strive to make[,] hinders Virginia from improving. Sir Will Berkeley [who was governor of Virginia 1642-1677] & others in his time endeavor'd something at the Silk Trade: but that of Flaxe I believe if once introduc'd would in a small time turn to very good account" He then went on to give an account of the plants and animals, and an account of Indian sweating. He ends his long letter with "This is all I have yet Observed. You may perhaps find one better able, you cannot I am sure find one more willing to Serve you and his Country than Sir Your Obliged Humble Servant John Banister."

Banister's friendship with Byrd made possible his accompanying Byrd's party on longer expeditions up to, and a little into, the mountains. His first Virginia shipment of plant and insect specimens was sent to Morison in 1680, with plant specimens (some living, or as seeds)

to Compton, now Bishop of London, in his spare time developing his garden of exotics at Lambeth Palace. Among the one hundred fifty plant specimens was the "Sidesaddle flower," the Pitcher plant "of a shape so strange and monstrous that I am afraid," wrote Banister, "that they may be thought to be chamaeras to be found no where but in his brain that drew them. . . . But considering that dried plants tho illustrated in the work to explain the description can but lead the Limonio [i.e., *Sarracenia*] or diligence into many errors ... I betook myself therefore to drawing which how well I have or with a little more practice I may perform I must leave you and others to be judge of." Banister's drawing of *Sarracenia purpurea* L. is lost, but Linnaeus cites Plukenet, who published Banister's modified drawing as Pl. CCCLXXVI fig. 6.

From 1682 drawings were sent to Leonard Plukenet, who published them in his *Phytographia (1691-1705)*, and plant catalogues to John Ray. Specimens and drawings of insects, spiders, and molluscs were sent to Martin Lister in 1680. In a letter to Bishop Compton in 1689, Banister recognized and described the function of balancers of flies. Robert Hooke in 1665 had also noticed the tiny outgrowths, but had not recognized their function. Banister described a living snail, and left dorsal and ventral drawings of "Cancer Moluccanus, or King Crabb," today known as *Limulus polyphemus* (Linn.). His writings are rich reading.

In 1683 Morison was, accidentally killed as he crossed an Oxford street Sometime later Jacob Bobart the younger, Gardener to the Physick Garden, was persuaded to continue Morison's *Historia universalise* He was fortunate in having the aid of highly trained William Sherard, who later also assisted Ray with his *Historia plantarum*. In London the Temple Bar Coffee House Botany Club hosted a number of folk interested in natural history and Banister's activities in Virginia. Such were Plukenet, Lister, Doody, Compton, George London, Tancred Robinson, and Adam Buddle. Banister had found himself handicapped by the financial uncertainties of the times. Virginians for the most part found the support of ministers by large tobacco donations burdensome, and support of science by the crown was at a low ebb. A flood in 1685 carried away much of Byrd's and neighbors' tobacco. As Plukenet wrote to Byrd, "patron" to Banister, "that which is the great alloy to our alacrity and a cleared damper upon the serenity of our Enjoyment will be the Consideration of our Empty hand offerings to the Encouragement of that worthy and Reverend Gentleman." In order to continue with his natural history, sometime in 1690 Banister acquired 1735 acres of land in Charles City County, and two

Mricans. That same year a committee met to plan for the establishment of the College of William and Mary. Commissary Blair and Banister were among "the gentlemen that ye said School and Colledge bee founded in ye name of." Due to the difficulties of raising funds for the college, both in Virginia and in the Motherland, the college did not receive its charter until after Banister's death.

His last letter was dated 12 May 1692. With a party he accompanied Byrd on the old Occaneechee trading trail to the Roanoke River in early May. He was probably mistaken for an animal as he stooped to examine a plant, and was shot by one of the woodsmen of the party. Banister left a young son and a wife of two years. His natural history collections were gathered together, and after copies were made of his catalogues, were shipped to Bishop Compton. His library of natural history books was sequestered by Byrd, who hoped with others that a successor would come to Virginia to carry on the work begun by Banister.

Since there was no successor, the books added to the fame of the Byrd library. Linnaeus in composing his *Species plantarum* (1753) cites Banister's plant specimens as he came across references to them in the works of Morison, Plukenet, Ray, and Petiver. Robert Beverley, working in the statehouse after the move from Jamestown to Williamsburg, was fascinated with Banister's "Account of the Natives," and so in his *History and Present State of Virginia* (1705) he published Banister's account verbatim, or but slightly altered. Banister had also been moved by the new animals he found. Of the beaver he wrote: "the Indians call Perecue, ye Overseer of ye Gange whose care it is to see his hands mind their work." The opossum is "a sort of creature with a false belly, into which it receives its young when in danger."

One of the richest descriptions lies among his manuscripts. It concerns Phyllitis (*Camptosorus rhizophyllus* (L.) Link), the Walking Fern: "In our March about 35 miles above the Falls of the James River, on the South side, our small path brought us to a vast Rock, or rather the side of a hill which seem'd to be of one entire stone part of which was very thinly overspread with a swift fall of water, which made a pleasant not loud noise, haveing noe Cragginess to interrupt it's course. A little lower downe this Rivulet is receiv'd into a naturall Bason & from thence conveyed into a small Vault of Craggie Rocks, where with it's fall it makes a dead hollow sound, something like that of a Kettle-drum, but more like an Indian one, which is a skin stretch'd over an earthen pot halfe full of water. It just shews it selfe, and is againe received into an open Arch of rough stone, where among other Capillaryes grows this small but rare kind of Harts

tounge, This Plant grows erect as others of the like kind, till Nature calls it downe to propogate; and when it's offsetts are strong enough to draw in their owne Aliment it leaves them & grows up as before" (Ewan and Ewan, 1970: 229-230). When Linnaeus included the fern in his *Species plantarum* (1753), he cited both Plukenet and Morison with their internal reference to Banister. Petiver in his *Memoirs* (December, 1707) called this "Virginia Hartstongue with proliferous Leaves." Linnaeus also commemorated Banister by giving the name *Banisteria* to a tropical genus of Malpighiaceae, although he had no dried specimen in his herbarium of Banister's West Indies collection. Andre Michaux commemorated Banister

in two genera, *Quercus* and *Woodwardia*, and de Candolle as a memorial named a Brazilian species *Mikania banisteriae*.

John Banister, as John Ray wrote, was "a most erudite man and an accomplished botanist" We honor Banister for the scope of his natural history interests, and the perceptive careful observations he left us.

Literature Cited

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Purse-web spiders (Atypidae) in Virginia (Araneida: Mygalomorphae)

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Even professional naturalists are often surprised to learn that the group of spiders commonly called "tarantulas" is represented in Virginia by a number of species in three families. At least one species is statewide and locally abundant, although like the others it is rarely seen because of secretive habits. The recent utilization of static, quantitative collecting techniques has greatly amplified our previously rudimentary knowledge of Virginia mygalomorphs, and provides a useful baseline insight into these interesting arachnids.

Spiders of the small Holarctic family Atypidae are commonly referred to as "purse-web spiders" because their capture webs have the form of cylindrical silken tubes lying along the ground and/or extended vertically on a tree trunk (the latter being typical of the Nearctic species). They are not sticky, and the spider, waiting inside, depends on its speed and alertness to get to the place where an insect is slowed or delayed in crossing. The spider's chelicerae are distinctly elongated to facilitate an upward or outward stab through the web into the victim, which is then dragged inside to be consumed at leisure. The tom entryway is later repaired.

Knowledge of American atypids was synthesized recently by Gertsch & Platnick (1980), who accounted

for eight species (four of them described as new). One species, known only from Philadelphia, was referred to the otherwise exclusively Palearctic genus *Atypus*, the other seven placed in *Sphodros*, a taxon endemic in southern and eastern United States. Except for *S. abbotti* in northern Florida and *S. niger* in the northern tier of states, these species were known only from widely scattered localities, one or a few per state. Only three species, *S. rufipes*, *S. atlanticus*, and *S. niger*, were known from Virginia, each from only a single locality.

It is now possible to provide a number of additional records for the last two species named, and to add a fourth *Sphodros* to the fauna of Virginia (as well as vastly augmenting the known range of that species). The ready availability of the excellent synopsis by Gertsch & Platnick obviates the need for diagnoses and illustrations at this time. All four species are basically piceous or black; males of *S. rufipes* are easy to recognize because their legs are mostly a vivid carmine red, but males of the other three (and females of all four) must be distinguished by technical characters. The genus itself can be identified at sight by means of the long, porrect chelicerae, the basal segment of which is half or more as long as the cephalothorax. The cheliceral fang, on the ventral