

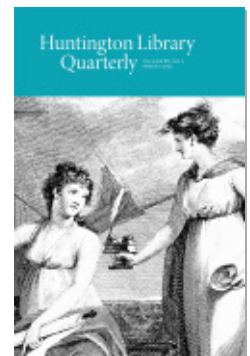


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Flesh, “Discovery,” and Loss in Colonial Sumatra: The Case of the Corpse Flower in Eighteenth- and Nineteenth-Century Botany

Elaine Ayers

ABSTRACT In May 1818, Joseph Arnold—a surgeon and naturalist working under British statesman Thomas Stamford Raffles—came across what he called the “vegetable of the prodigy world,” a flower so unbelievable in its size, putrid odor, and fleshiness that it would challenge the limits of floral life for colonial naturalists thereafter. Tracing the material history of the so-called corpse flower, *Rafflesia arnoldii*, over the course of the eighteenth and nineteenth centuries and its place—or lack thereof—in colonial collections, this article explores how natural historical knowledge develops when specimens cannot be fully collected, described, or possessed outside of the field. Facing a lack of physical evidence and the utter inability to preserve, pack, and ship the massive, stinking, and ephemeral corpse flower to Britain and Europe from its Sumatran home, naturalists like Arnold struggled with disbelief and self-doubt while moving through colonial networks of exploration, competition, and death in the rainforests of Southeast Asia. Loss, this article argues, held significant weight in colonial collecting, challenging notions of material abundance in herbaria and natural history museums. **KEYWORDS:** botany; colonialism; British history; Southeast Asia; history of science; natural history museums; material culture

☞ **THE STORY OF THE CORPSE FLOWER** is a story of loss. Other words could be used to describe this floral life history, indicative, maybe more than any other plant, of the strangeness and unattainability of the Indonesian tropics: death, decay, rotted, missing, destroyed, displayed, forgotten; but the overwhelming volume of archival records and empty herbarium spots dedicated to *Rafflesia* reek of loss. Just a few specimens of the genus live, or rather, are held, dead, in the herbarium of the Natural History Museum, London. One, a medium-sized, dried flower of *Rafflesia kerrii*, collected in Thailand in 1929 and pasted to a sheet of white paper; another, a single spongy pistil of *Rafflesia arnoldii*, preserved in alcohol in a glass jar, the last surviving evidence of

this botanical discovery in the mountainous Sumatran rainforest in 1818.¹ Attempts at collecting and describing this corpse flower, the largest flower in the world, claimed countless lives over the course of the nineteenth century, changing the practices and limits of natural history writ large. Monstrous in appearance, scale, and—most importantly—fragrance, *Rafflesia arnoldii* confounded all “natural” bounds of floral life, resisting natural historical order while seemingly situating primeval grandiosity amid the contested colonial Sumatran rainforest. More than two hundred years after its European discovery, of the millions of specimens stored in herbaria across Britain and Europe, the “prodigy of the vegetable world” barely exists in natural historical collections, its fleshy petals reduced to brown, shapeless masses filed away for only the most dedicated of researchers. Not a single specimen of the genus grows outside of Southeast Asia, unlike the wildly popular “other corpse flower,” the *Amorphophallus titanum*.²

The type of loss associated with the strange history of the corpse flower in and out of its endemic home, the rainforests of Sumatra, is markedly different from Londa Schiebinger’s account of agnotology in another history of a singular plant: the peacock flower (*Poinciana pulcherrima*). Following the peacock flower through its *nontransfer* in medical epistemology between the eighteenth-century Caribbean and Europe, Schiebinger argues that “culturally produced ignorance” is as indicative of social and political knowledge construction as what we do know; Europeans’ ignorance of the peacock flower’s abortifacient properties (well-known to Caribbean islanders), then, is telling of a larger story of shifting early modern European pharmaceutical and medical structures along political, gendered, and racialized lines.³ While knowledge about the peacock flower failed to cross oceans, the plant itself *did* move, and moved quite easily. This, then, is where the corpse flower’s biography differs, begging questions of *nontransfer* along entirely divergent lines; unlike the peacock flower, European naturalists proved unable to collect viable specimens of *Rafflesia*, pack them into wooden boxes, ship them across oceans, and force them to grow in cold or artificial climes.

1. *Rafflesia kerrii* Meijer (collected in Thailand, February 1929), BM000901269, Natural History Museum (London); *Rafflesia arnoldii* R.Br. (collected in Sumatra, 1818), BM001122243, Natural History Museum (London).

2. Throughout this paper, there are numerous spellings and name changes (some historic, some due to British misinterpretations) of islands and places in Southeast Asia. I use the most current designations unless directly quoting a source, including referring to the archipelago as “Indonesia” (established in 1945).

3. Londa Schiebinger, *Plants and Empire: Colonial Bioprospecting in the Atlantic World* (Cambridge, Mass., 2004), 3. Schiebinger defines her use of “agnotology” here: “While much literature on colonial science has focused on how knowledge is made and moved between continents and heterodox traditions, I explore here instances of *nontransfer* of important bodies of knowledge from the New World into Europe. In doing so, I develop a methodological tool that Robert M. Proctor has called ‘agnotology’—the study of culturally-induced ignorances—that serves as a counterweight to more traditional concerns for epistemology. Agnotology refocuses questions about ‘how we know’ to include questions about what we do *not* know, and why not.”

Rather than European cultural ignorance or a refusal to take Indonesian Indigenous knowledge seriously, *Rafflesia*'s biography was missing its very materiality. While valued Southeast Asian plants like orchids, carnivorous pitcher plants, and fragrant woods all presented distinct problems to traditional eighteenth- and nineteenth-century practices of observation, collection, preservation, illustration, description, and display, the corpse flower completely defied all human attempts to transform natural curiosities growing in the field into scientific specimens in gardens, herbaria, and museums. Over the course of the eighteenth and nineteenth centuries, botanists struggled against material loss to overcome such cultural ignorance in the case of the corpse flower, forced to work with fragments of its body, and, most importantly, written and illustrated observations made in the field, sketched quickly and roughly before the flower's blossom rotted away and disappeared for another decade or more.

Near total reliance on hasty in situ accounts by a series of young naturalists, constantly haunted by the specter of tropical disease and death, shaped the corpse flower's objecthood into one inextricable from colonial fears of the chaos, fecundity, and decay of the tropical rainforest. The plant's sheer size, animalistic form, and offensive fragrance pushed the limits of what horrors the "primeval" forest might produce; its material absence, I argue, transformed colonial botany into work partly defined by what it could not describe, could not make visible, could not contain. This view represents a marked shift in approaching eighteenth- and nineteenth-century natural history, a set of nested fields that depended on physical collections to function and grow. As Dorinda Outram has helpfully argued, for instance, "new spaces" of natural history—namely, museums and botanical gardens—concentrated the study of plants, animals, minerals, and other objects in metropolitan centers like Paris and London, managed and often tightly controlled by men who no longer *needed* to travel to draw foundational theories about the world.⁴ While elite men like Georges Cuvier, Joseph Banks, Robert Brown, William Jackson Hooker, and Joseph Dalton Hooker depended on explorers working in the field to send them reports, sketches, and specimens, some believed that "it [was] only really in one's study (cabinet) that one can roam freely throughout the universe"; this type of work, which included taxonomy and theorization, required, in Cuvier's words, "courage which comes from unlimited devotion to the truth."⁵ In a floral paradox that came to challenge natural

4. Dorinda Outram, "New Spaces in Natural History," in *Cultures of Natural History*, ed. James Secord, Emma Spary, and Nicholas Jardine (Cambridge, 1996), 249–65.

5. Georges Cuvier, qtd. in Dorinda Outram, *Georges Cuvier: Vocation, Science and Authority in Post-Revolutionary France* (New York, 1984), 62–63. For more on the rise of collections in natural history and their elite management, see Richard Drayton, *Nature's Government: Science, Imperial Britain, and the "Improvement" of the World* (New Haven, C.T., 2000); Jim Endersby, *Imperial Nature: Joseph Hooker and the Practices of Victorian Science* (Chicago, 2008); and Thierry Hoquet, "Botanical Authority: Benjamin Delessert's Collections Between Travelers and Candolle's Natural Method (1803–1847)," *Isis* 105 (2014): 508–39, among others.

historical collections, then, *Rafflesia*'s corporeality—the very thing that generated the sense of wonder and monstrosity that surrounded it—made the plant ungraspable and nontransferable, leaving the largest plant in the world absent from gardens and shelves, transforming the herbarium into a type of dream-space in the construction of tropical rainforests, while elite naturalists struggled to piece together fragments approaching some version of “truth.”

This essay centers around one herbarium specimen situated between “the natural” and artifice, allowing it to speak, in Lorraine Daston’s words, to a larger “supersaturated cultural solution” of the object’s movement from field to museum collection.⁶ The brown, mottled, spongy pistil of *Rafflesia arnoldii* R.Br., pickled in clear ethanol in a large glass jar at the Herbarium of the Natural History Museum, London, is, to a nonspecialist, virtually indistinguishable from any other plant-form, akin more to a common fungus than to any symbol of tropical floral gigantism. Labeled “BM001122243,” the specimen’s approximate latitude and longitude of collection are given (00.36.12 South by 101.54.40 East), its “author” is designated as Robert Brown (“R.Br.”), and its status is protected as a lectotype, but little other information about the pistil or its source is provided.⁷ This specimen, though, was the first fragment of corpse flower collected by European hands, responsible for most knowledge production about the prodigy of the vegetable world for much of the nineteenth century. Taking Samuel Alberti’s contention that objects held in museum collections, and not just textual sources, should be treated as critical traces in the history of science, I question how natural historical knowledge develops when those objects can never be fully possessed.⁸ Over the course of this essay, I will trace the material movement (or lack thereof) of *Rafflesia* in its transformation into a figurehead for tropical parasitism in and out of colonial Sumatra and then into natural history collections: first as a drawing, then as a pistil, and finally as a partial bud. Read as a uniquely immaterial material specimen, *Rafflesia*’s strange biography becomes an objectless history of an undeniably fantastic object, challenging the notion of a “collection” altogether.

Drawing

The first European encounter with *Rafflesia* was a false start, an inadvertent discovery, or maybe half-discovery, bound up in narratives of Enlightenment expeditionary science and nationalist competition, the tentacles of war reaching across

6. Lorraine Daston writes, “Like seeds around which an elaborate crystal can suddenly congeal, things in a supersaturated cultural solution can crystallize ways of thinking, feeling, and acting”; *Things That Talk: Object Lessons from Art and Science*, ed. Daston (New York, 2008), 20.

7. A lectotype is a specimen later designated as the species’ type specimen to which all others must be compared, but not originally designated as such by the first author (in this case, Robert Brown, who named very few botanical type specimens during his career).

8. Samuel Alberti, “Objects and the Museum,” *Isis* 96 (2005): 559–71.

the South Pacific, leaving ships and their crews lost in uncertain waters subject to human and environmental violence. The traces of this first encounter are scant: a yellowing, penciled illustration, confiscated and subsequently lost in the shelves of the Natural History Museum until the mid-twentieth century, when it was rediscovered by archivists reorganizing the collections. The term “discovery” is, of course, a messy and contested one, often used to obscure or deny the identities of the Indigenous peoples who encountered, observed, and used their native plants far before European intervention. In this case, discovery is made more complicated by its material traces in natural history collections—does a sketch, a hurried note “count” as discovery? Does an encounter? Who determines the definition, stakes, and credit of discovery? In the case of the corpse flower, Indigenous Western Sumatrans were clearly aware of the gigantic plant, referring to it as *krubut* (among other various spellings and mis-translations)—the devil’s betel box. As European explorers noted in their own accounts, though, the fleshy flower held little human use value, and was mostly avoided by Sumatrans because of its corporeal impermanence and malodor; even to those living in the forested mountains outside of Manna, the flower was rare and largely undesirable. While Indigenous interpretation of and interaction with the blooms warrant further study, I am interested, here, in understanding how explorers encountered the floral monstrosity for the first time—how a single specimen became bound up in issues of communication, preservation, and display, seemingly inextricable from British interactions with the “unknowability” of the Indonesian rainforest in the early nineteenth century.

On September 25, 1791, two French ships left the port of Brest on a joint research and rescue mission, sailing across the vast expanse of the Pacific Ocean in search of the French ships *L’Astrolabe* and *La Boussole*, which had disappeared somewhere off the coast of Botany Bay in 1788 during a massive, enterprising scientific expedition under the command of Jean-François de Galaup, comte de Lapérouse (1741–ca. 1788)—an expedition that came to stand in for the promises and perils of international exploration during the so-called Age of Discovery.⁹ Aboard the aptly named *La Recherche* was Louis Auguste Deschamps (1765–1842), a twenty-six year-old surgeon with (like many surgeons) an interest in botany. By the end of the eighteenth century, Deschamps would watch most of his fellow crew members die, survive capture by Dutch and British naval forces, and amid all the turmoil, discover—and then lose—the corpse flower. The mission failed in its primary objective.

9. Paul Carter, *The Road to Botany Bay: An Exploration of Landscape and History* (New York, 1998); John Dunmore, *French Explorers in the Pacific, Vol. I: Eighteenth Century* (Oxford, 1965); John Dunmore, *Where Fate Beckons: The Life of Jean-François de la Pérouse* (Fairbanks, Ala., 2008); Frank Horner, *Looking for La Pérouse* (Melbourne, 2016); Roger Lawrence Williams, *French Botany in the Enlightenment: The Ill-Fated Voyages of La Pérouse and His Rescuers* (Dordrecht, 2003); and Roger Lawrence Williams, *Botanophilia in Eighteenth-Century France: The Spirit of the Enlightenment* (Dordrecht, 2001).

The frigates found no evidence of Lapérouse's whereabouts, apparently lost somewhere in the treacherous waters north of Australia's coast.¹⁰ Aboard the ships, Captain Antoine Bruni d'Entrecasteux's men were ravaged by disease, and Deschamps proved unable to use his medical training to save most of them. Within just two years of leaving France, both captains of the ships, d'Entrecasteux and Jean-Michel Huon de Kermadec, had died at sea, leaving their men disorganized and vulnerable to attack. As they sailed for the Javan port city of Surabaya, hoping to restock and refuel before heading back to France, both ships were seized by Dutch naval forces, interned in enemy waters and their natural historical collections confiscated.

Upon arriving in Surabaya in 1793—while hearing ongoing news about the French Revolution back home—the crew awaited their fate. Taking pity on the few left alive, Dutch governor Pieter Gerardus van Overstraten allowed them to leave on the next ship out, but Deschamps decided to stay. Committed to exploring the island and building up a collection that he could later sell, the young naturalist won Overstraten's favor, building up a small team of Javan assistants and some collecting materials in exchange for knowledge of what he found. Over the next ten years, Deschamps covered most of the island, scaling its mountains and volcanoes, learning some Malay, Javanese, and Sundanese, making his botanical and zoological collections in the mornings and dining with Dutch officers in the evenings. He consulted Dutch natural historical libraries (primarily referencing Georg Eberhard Rumpf's 1741 *Herbarium Amboinese*), comparing the species he found to plates and descriptions, hoping to publish his own flora of Java when back on French ground.¹¹

Relying heavily on a team of Javan guides and, especially, illustrators, Deschamps built up a massive volume of natural historical descriptions—although any preserved specimens were lost either in Java or at sea by the time he left in 1803. Deschamps held more than two hundred descriptions of flora and their Indigenous names, most of them new, and dozens of pencil-and-watercolor illustrations ready

10. Lapérouse's two ships were not located until 1827, when an Irish ship found evidence of *L'Astrolabe* and *La Boussole* in the Solomon Islands. What happened to the crews remains somewhat of a romanticized mystery, but it seems as though both ships wrecked off the coast of one of the islands, and some of the crew were massacred while the others escaped and were lost to the sea. The waters around the Torres Strait were (and are) notoriously rough and dangerous, and claimed a number of ships sailing between Australia and Indonesia in the eighteenth and nineteenth centuries. Captain d'Entrecasteux died of pulmonary tuberculosis and Captain Kermadec died of scurvy. See Dunmore, *Where Fate Beckons*; Williams, *French Botany*; and, for more on Deschamps's mission, Jacques Labillardière, *Relation du Voyage a la Recherche de la Pérouse* (Paris, 1800); and Louis Antoine Milet-Mureau, *Voyage de La Pérouse, Autour du Monde*, vols. 1–4 (Paris, 1797).

11. For more on Rumphius and his legacy, see Genie Yoo, "Wars and Wonders: The Inter-Island Information Networks of Georg Everhard Rumphius," *British Journal for the History of Science* 51 (2018): 559–84.

for drafting into publication.¹² At some point during these ten years, the naturalist and his team found a dark red, fleshy, foul-smelling plant springing from a vine on the ground in the middle of the rainforest. Deschamps was informed that the flower, about a foot in diameter with buds shaped like tightly bound cabbages, bloomed only rarely, its gigantic, cavernous blossom lasting for just a few days. One of his Javan draftsmen drew up the bud in pencil and conducted a dissection of its reproductive organs, and Deschamps bound the sketch up with his other illustrations. Just a few miles away from France's shore, Deschamps's ship was seized by the English yet again, and his extensive collections, including the illustration of the giant flower, were sent to London's India House.¹³

In the interest of scientific collaboration and gentlemanly conduct, Joseph Banks (1743–1820), upon receiving Deschamps's papers, attempted to return them to France. "Mr. Deschamps, the Companion of La Billiardière on board *L'Entrecasteux* ship arrived here, a prisoner," Banks wrote to his colleague in Paris. "I have great pleasure," he continued, "in telling you that, as soon as our Government heard of the Capture, they gave order, that, if any part of the collection should be deemed by the Captors too valuable to be abandoned . . . those things should be purchased at the expense of the Government, and returned gratis to M. Deschamps."¹⁴ Deschamps's collection, though, never made it back to France—whether lost in the shuffle or intentionally concealed, the manuscript papers and drawings remained uncatalogued and unseen until the twentieth century.

Although Joseph Banks apparently knew of some of the content of Deschamps's papers, later advising British naturalists to publish Javan species quickly so as to beat the French to naming rights and therefore building up his own elite authority, the single illustration of what was later named *Rafflesia patma*, a small,

12. Deschamps did publish two short articles while in Java: "Notice on the Poison Upas Tree" and "Mores, Amusements and Shows of the Javanese," both in *Annales des Voyages, de la Géographie et d l'Histoire*, ed. Conrad Malte-Brun (Paris, 1809, 1810). For more on the process of illustration in the field, see Daniela Bleichmar, *Visible Empire: Botanical Expeditions and Visual Culture in the Hispanic Enlightenment* (Chicago, 2012).

13. There is strikingly little information, primary or secondary, about this period in Deschamps's life. The main source of his collections, including the only reference to his discovery of the corpse flower, is C.G.G.J. van Steenis, M. J. van Steenis-Kruseman, and C. A. Backer, "Louis Auguste Deschamps: A Prominent but Ill-Fated Early Explorer of the Flora of Java, 1793-1798," *Bulletin of the British Museum (Natural History), Historical Series* 1 (1954): 51–68. Working with a number of Deschamps's plates and notes at the Natural History Museum, the authors were able to identify most of the plants Deschamps described; they are listed in a series of tables in that paper along with a detailed itinerary of Deschamps's travels in Java.

14. Joseph Banks to Barthélemy Faujas de St. Fond, July 29, 1803, Banks Correspondence, vol. 14, f. 101, Natural History Museum (London). For a wonderful account of scientific communication and codes of conduct (including Banks) between France and Britain during the Napoleonic Wars, see Iain Watts, "Current Events: Galvanism and the World of Scientific Information, 1790-1830" (PhD diss., Princeton University, 2015).

slightly more common species of corpse flower, was lost amid the thousands of other papers, illustrations, letters, and specimens accumulating in the already too-small confines of the British Museum. Deschamps's papers were transferred to the new Natural History Museum along with countless other unseen specimens and descriptions in 1881, still uncatalogued. Visiting the Natural History Museum in the 1940s, Cornelis Gijsbert Gerrit Jan van Steenis, director of the Dutch Rijsherbarium, and his wife, botanist M. J. van Steenis, worked with archivists and librarians to unearth Deschamps's manuscripts, analyzing them for the first time.¹⁵ The van Steenises and museum staff members, then, revealed what had been lost, or perhaps never held, to or by European botanists outside of Indonesia. Just as later explorers struggled to communicate what they considered an "unbelievable" plant that could not be physically collected and preserved for the herbarium, Deschamps's interaction with *Rafflesia* challenged the definition of what constituted "discovery" in Western science. Without received, recognized, and read evidence of its existence—without its incorporation into European taxonomy via archives and libraries, was the corpse flower really "discovered" at all at in this early period? Providing proof of *Rafflesia*'s existence outside of Indonesia continued to plague naturalists well through the nineteenth century even as written records and drawings circulated more freely and entered natural historical catalogs. The next European encounter with the flower—its first "scientific" discovery upon its incorporation into taxonomic systems, would not occur until almost twenty years later.

Pistil

In April of 1815, Mount Tambora erupted for the first time in centuries, spewing deadly flames and launching thousands of pounds of black ash into the air, its rumblings and sulfurous odors detectable across most of the Indonesian Archipelago. The volcanic eruption, the largest in history, killed tens of thousands of Indonesians, destroyed entire tracts of rainforest, and triggered worldwide famine, turning skies across the world dark and cold.¹⁶ This "Year Without a Summer," responsible for significant Romantic works from J. M. W. Turner's landscapes to Mary Shelley's *Frankenstein* (1818), penned under tephra-yellow clouds at Lake Geneva in 1816, marked the end of the five-year British Interregnum in Java, leaving the island back in the

15. van Steenis, van Steenis-Kruseman, and Backer, "Louis Auguste Deschamps"; and John Bastin, "Dr. Joseph Arnold and the Discovery of *Rafflesia Arnoldi* in West Sumatra in 1818," *Journal of the Society of Bibliography of Natural History* 6 (1973): 305–72.

16. For more on Tambora, see Clive Oppenheimer, "Climatic, Environmental, and Human Consequences of the Largest Known Historic Eruption: Tambora Volcano (Indonesia) 1815," *Progress in Physical Geography* 27 (2003): 230–59; William and Nicholas Klingaman, *The Year Without Summer: 1816 and the Volcano that Darkened the World and Changed History* (New York, 2013); Gillen Wood, *Tambora: The Eruption that Changed the World* (Princeton, N.J., 2014); and William J. Broad, "A Volcanic Eruption That Reverberates 200 Years Later," *The New York Times*, Science, August 24, 2015.

hands of the Dutch, and British civil servants and officers focused on the islands they *did* still control; namely, Sumatra.¹⁷ A young British surgeon sailing from Sydney to Batavia in July of 1815 found himself caught up in Tambora's aftermath, using its natural historical interest to launch a career for himself. Nearing the Torres Strait—the same stretch presumably responsible for the wrecking of Lapérouse's ships—the surgeon noticed, quite suddenly, "that the sea was covered with small pieces of a black substance resembling coal."¹⁸ The crew sailed on through the ominous sea until they reached Lombok and finally the port of Batavia, where they finally learned of the black water's explosive cause. Surveying Dutch officers about the eruption, the surgeon noted that the eruption, "if not the most violent on record, was certainly one of the most destructive in its effects than we have any history of."¹⁹

Born in the small town of Beccles, Suffolk, in December of 1782 to a middle-class tanner, surgeon Joseph Arnold distinguished himself at an early age as someone determined to rise above his station. Deciding to pursue a career in medicine—a way rural men could attend university, travel, and make an adequate living in the early nineteenth century—Arnold apprenticed under a surgeon and apothecary in Beccles while studying classical languages. Starting his maritime career as a surgeon aboard voyages to the Baltic Peninsula and Sydney, Arnold served for years aboard a host of warships in the Napoleonic Wars, engaging in devastating battles in the Mediterranean and Adriatic Seas.²⁰ This period of war plagued Arnold for his whole life, triggering nightmares and constant unrest that he recorded meticulously in daily journals. "Purulent discharges, poultices, groans, foetor, putrid exfoliating bones, fear of haemorrhagy and other accompanying disagreeables" filled the lines of his diaries alongside tallies of the men he had lost; these memories were his "portion," he noted, "without much hope of a diminution of them for a length of time to come."²¹ After a series of horrific nightmares and military trauma, Arnold stopped writing for a year; his next diary entry, written on his voyage to Sydney, described his first

17. Mary Shelley, *Frankenstein; or, The Modern Prometheus* (London, 1818), and, for example, Joseph Mallord William Turner, *Chichester Canal*, c. 1828, oil on canvas, 93.2 × 163.0 × 14.1 cm., Tate London, N00560; on the British Interregnum in Java (1811–1816), see Peter Carey, *The British in Java, 1811–1816: A Javanese Account* (Oxford, 1992); Paul Fregosi, *Dreams of Empire: Napoleon and the First World War, 1792–1815* (New York, 1989); John Bastin, "Palembang in 1811 and 1812," in *Bijdragen tot de Taal- en Volkenkunde* 110 (Leiden, 1954); and Bastin, *The Native Policies of Sir Stamford Raffles in Java and Sumatra* (Oxford, 1957).

18. Joseph Arnold, "History of an Eruption from the Tomboro Mountain on the Island of Sumbawa," MSS SP31, Linnean Society Library and Archives, London, England.

19. Joseph Arnold, "History of an Eruption from the Tomboro Mountain on the Island of Sumbawa," MSS SP31, Linnean Society Library and Archives, London, England.

20. Joseph Arnold to William Crowfoot, May 6, 1809, 1845–1847, Mitchell Library Special Collections, State Library of New South Wales (NSW) [hereafter MLSC]. For a full account of their mission to escort Bligh to Sydney, see Joseph Arnold to [anonymous, possibly Edward Arnold], March 18, 1810, Papers Relating to Joseph Arnold, 1810–1931, Aa72, MLSC.

21. May 29, 1812, Joseph Arnold Journal, January–December 31, 1812, C720/2, MLSC.

observation of phosphorescence so typical, in his mind, “of the water which voyagers to tropical climates speak of.”²²

In early 1815, Arnold felt desperate to leave again, perhaps an attempt to escape his own stifling memories. After serving as a surgeon aboard an all-female convict ship bound for Sydney, he secured a return trip bound for London aboard the *H.M.S. Indefatigable*, determined to sell his collections and develop his study as a naturalist; this trip, though devastating in the short-term, brought him to Indonesia for the first time, putting him directly in the path of Mount Tambora and launching his short career. The *Indefatigable*, captained by Mathew Bowles, retraced the path of Deschamps’s trip in the 1790s, barely making it through the dangerous Torres Strait unscathed. Shortly after arriving at the port of Batavia in July, though, the unthinkable happened: the ironically named ship caught fire, and Arnold’s collections burned into the brackish waters, joining the black ash of Tambora’s eruption. “Thus,” the irascible naturalist wrote, “perhaps the most dreadful accident that can befall a sailor has befallen me.”²³ Counting among his lost possessions his boxes of South American, Australian, and recent Indonesian insects and other naturalia; a small library of books; a set of illustrations; and documents entrusted to him by Sydney officials, Arnold found himself completely devastated.²⁴

“What am I to do?—I have but little money,” he continued.²⁵ Stranded in Buitenzorg amid worsening violence between British and Dutch colonial forces—like Deschamps had been in the 1790s—the surgeon-naturalist feared for his fate. “It really seems like a dream to me,” he penned in his private journal, “that I should have been tolerably comfortable in a ship yesterday, and looking forward to a passage to England, and *now*, that I should be entirely adrift in the most unhealthy spot almost in the world, without a friend to assist me.”²⁶ Arnold had reason to be wary of Buitenzorg’s climate; since European military forces had invaded the Javan port city in the fifteenth century, tropical diseases exacerbated by poor drainage systems, ranging from infection to malaria, ravaged settlers at an unprecedented rate, even within the archipelago. In the immediate wake of Tambora’s eruption, conversations of death

22. July 14, 1809, Joseph Arnold Journal, 1808–1809, A1844, MLSC.

23. October 22, 1815, Joseph Arnold Journal, September 3, 1815–December 17, 1815, MLSC.

24. Arnold lists his lost collections in several sources, but his entry on October 22, 1815, is the most complete. Writing to his brother, Edward Arnold, he adds: “I have encountered most dangers in this voyage than all the time put together before . . . But my shells and other curiosities were destroyed, as well as some beautiful parrots I was bringing home for you. This place is dreadfully sickly for strangers, who die like rotten sheep”; Joseph Arnold to Edward Arnold, November 5, 1815 [Buitenzorg], bound with Joseph Arnold Journal September 3, 1815–17, December 1815, MLSC.

25. October 22, 1815, Joseph Arnold Journal, September 3, 1815–December 17, 1815, MLSC.

26. October 22, 1815, Joseph Arnold Journal, September 3, 1815–December 17, 1815, MLSC.

and decay—compounded by Java's Sepoy conspiracy within its court system—wound their through everyday conversation. Indeed, adding up the names of those who had died under his watch on the ship since arriving in Batavia (he did not list any deaths prior to arrival), Arnold wrote: "A passenger, who went on shore to see the city, came on board and died in 24 hours . . . Seven of us came together from New Holland in the *Indefatigable*: three of the party are dead."²⁷ Nevertheless, the surgeon-naturalist remained determined to make his time on the island useful, and decided to rebuild his collections before sailing back home. Soon after making introductions in Batavia, moreover, Arnold learned that he *did* have "a friend to assist" him: Charles Assey, a Beccles-born civil servant working as a secretary for the colonial government. Assey apparently drew on his own network to arrange accommodation and connections for Arnold, and somewhere during this short time, the surgeon-naturalist met his lifelong patron and friend, Sir Thomas Stamford Raffles (1781–1826).²⁸

During the almost four months he spent in Java working under Raffles's direction, Arnold built up a taste for exploration and natural history, trekking through the tropical rainforest while presenting his work in terms informed by Romantic tradition. Seizing on Tambora's eruption as a way to fashion himself as an expert vulcanologist, Arnold organized a small-scale expedition to Tangkuban Perahu, an active volcano located slightly north of Bandung, Western Java. After traveling for more than a week through dense rainforest "of enormous magnitude" and "loaded with parasitic plants," the naturalist and his team of guides arrived at the crater, and Arnold was presented with his first instance of sublime encounter, challenging his skills of textual communication.²⁹ "It would be difficult to give such a description of this tremendous scene as would enable the reader to form an accurate idea of its terrific grandeur," directly comparing the experience to his brush with Tambora's explosion.³⁰

Like so many other explorers, Joseph Arnold spent much of his career agonizing over how to describe the wonders he encountered abroad, struggling to commit the intangible sensory curiosities he observed to paper. Some years before arriving in Java, the young surgeon-naturalist had puzzled over precisely this paradox of discovery, the inability to communicate something that only you had seen, despite your career depending on it. Written on his trip across the Pacific Ocean, sometime

27. December 2, 1815, Joseph Arnold Journal, September 3, 1815–December 17, 1815, MLSC.

28. Any information on Arnold's time in Java comes from: Joseph Arnold Journal September 3, 1815–December 17, 1815, MLSC; and John Bastin, "The Java Journal of Dr. Joseph Arnold," *Journal of the Malayan Branch of the Royal Asiatic Society* 46 (1973): 1–92.

29. November 22, 1815, Joseph Arnold Journal, September 3, 1815–December 17, 1815, MLSC.

30. "Description of a Volcanic Mountain on the Island of Java, Called Tankuban-praw," December 1, 1815, in Joseph Arnold Journal, September 3–December 17, 1815, A1845-1847, f. 615-22, MLSC.

perhaps after collecting in South America, Arnold produced a strange, unfinished, unpublished manuscript: *The Visit to the Moon: A Philosophical Romance*. One of Arnold's executors, after acquiring a handwritten transcript of the science fiction novel in 1862, considered the work, although "dull, diffuse, or rhapsodical," indicative of his friend's mental state while traveling, even noting its "foreshadowing of the Calamity to which the writer was doomed."³¹

In the handwritten pages, a young naturalist—not unlike Arnold—finds himself mysteriously transported by some magnetic force, during an expedition somewhere in Asia (details are unspecific), to the barren craters of the moon. Devastatingly alone and sometimes suicidal, the naturalist finds himself unable to communicate his terrifying lunar discoveries back to earth, unable to find words worthy of this incredible strangeness while lamenting the certain disbelief he would face upon surviving this lonely journey. Although the moon presents "the most astounding discoveries and the most unheard of prodigies,"—language Arnold explicitly recalled upon discovering the corpse flower six years later—the lunar explorer fears that "this passion must necessarily be solitary."³² The protagonist, while examining new plants, animals, and minerals, cautioned readers against curiosity in pursuit of fame; curiosity was often, though, "provided by the desire of imparting its discoveries to others and thus making them participate in his joys," and the naturalist seemed unable to reconcile the draw of social recognition with solitary exploration on his fatal journey.³³

Joseph Arnold briefly returned to Britain in 1816, leaving Java during its period of Dutch-British violence to deliver his collections and receive payment and support from the Linnean Society, upon Thomas Stamford Raffles's recommendation. His collections, perhaps unsurprisingly, did not arrive—Arnold's Javan plants were destroyed by ants as soon as he loaded them aboard his return ship, the *Hope*; the three boxes of plants intended for Sir Joseph Banks, apparently unprotected once on board, were quickly destroyed by seawater.³⁴ Under Raffles's patronage, though, Arnold still enjoyed new access to London's natural historical communities and resources. For the next year, he met frequently with Robert Brown, librarian of the Linnean Society, and William Jackson Hooker, director of the Royal Botanic Gardens, Kew, and studied the recent slew of compendiums of Indonesian plants and animals collected for the East India Company.

31. Samuel Wilton Rix, April 30, 1862 [short note written in the front of the MSS], in *The Visit to the Moon: A Philosophical Romance*, 1848, MLSC.

32. Joseph Arnold, *A Visit to the Moon: A Philosophical Romance* MSS, A1848, f. 112–113, MLSC.

33. Arnold, *A Visit to the Moon: A Philosophical Romance* MSS, A1848, f. 113, MLSC.

34. Notice of the loss of the three boxes are held in: *Dawson Turner Collection, Banks Letters*, vol. 19, f. 263–4, Library of the Botanical Department, Natural History Museum (London).

Arnold's study period seemed directed toward one specific intention—returning to the Indonesian Archipelago, where he hoped to join Raffles's growing group of naturalists collecting for comparatively reliable sums of money. Although Arnold ceased keeping his meticulous diaries while in Britain, he frequently drew on Thomas Horsfield's natural histories of Java, produced while in Raffles's employ.³⁵ By November of 1817, the now fully minted naturalist secured a return trip to Indonesia, joining Raffles in his new career as governor of Sumatra—a bittersweet appointment after Britain's loss of Java back to the Dutch. A noted hypochondriac, Raffles required a full-time personal physician willing to accompany him on frequent expeditions while tending to his frequent complaints; Arnold, he believed, would be the perfect solution. For his part, Arnold seemed thrilled by the opportunity to return to the tropics.³⁶

On May 18, 1818, Joseph Arnold trekked into the staggeringly hot, humid rain-forest outside of Manna, Western Sumatra, on the botanical expedition that would seal his fate—and culminate in specimen BM001122243. Accompanied by over a hundred people, Arnold's expedition looked like most, contrary to traditional narratives of solitary exploration—the party consisted of about sixty porters carting luggage, glass collection jars, sheaths of paper, and spirits intended for preservation; more than forty "slaves," who, according to Arnold, were employed to protect them against both wild animals and unwelcoming Indigenous peoples; the "Governor's Guard," which consisted of a dozen educated and wealthy Sumatran men; Thomas Stamford Raffles and his wife, Lady Sophia Raffles (who Arnold believed "would follow Sir Stamford to the world's end"); a Dutch colonist and resident of Manna, Mr. Presgrave, who knew the region well; and Arnold himself.³⁷ After riding, walking, and canoeing through "almost impenetrable forest," the group encountered what Arnold considered "the greatest prodigy of the vegetable world."³⁸ The discovery, which Arnold recounted in a letter to Dawson Turner, the famous British cyptogamist, is worth quoting here at length:

35. Bastin, "Java Journal" (1973); and Turner, *Memoir* (1864).

36. For more on Raffles's extreme hypochondria, see Lady Sophia Raffles, *Memoir of the Life and Public Services of Sit Thomas Stamford Raffles, F.R.S.* (London, 1830).

37. Joseph Arnold to Dawson Turner, July 9, 1818. Linnean Society Library & Archives. For critiques of the narratives of singular masculine exploration with which I am trying to interact, see David Arnold, "Plant Capitalism and Company Science: The Indian Career of Nathaniel Wallich," *Modern Asian Studies* 42 (2008): 899–28; Richard Bellon, *A Sincere and Teachable Heart: Self-Denying Virtue in British Intellectual Life, 1736-1859* (Leiden, 2014); Felix Driver, *Geography Militant: Cultures of Exploration and Empire* (Oxford, 2001); Erika Lorraine Milam and Robert A. Nye, eds., *Scientific Masculinities, Osiris* 30 (Chicago, 2015); Mary Louise Pratt, *Imperial Eyes: Travel Writing and Transculturation* (London, 1992); Nancy Leys Stepan, *Picturing Tropical Nature* (Ithaca, N.Y., 2011); and Mary Terrall, "Heroic Narratives of Quest and Discovery," *Configurations* 6 (1998): 223–42.

38. Arnold to Dawson Turner, July 9, 1818. Linnean Society Library & Archives.

I had ventured some way from the party, picking specimens of plants, when one of the Malay servants came running to me with wonderment in his eyes, and said "Come with me, Sir, come, a flower very large, beautiful, wonderful!" I immediately went with the man about an hundred yards in the Jungle, and he pointed to a flower growing close to the ground under the bushes, which was truly astonishing. My first impulse was to cut it up and carry it to our hut, I therefore seized the Malay's prang . . . & began to chop away. I then found that it sprang from a small root (perhaps as large as two fingers or a little more) which ran horizontally I therefore soon detached it & removed it to our hut.—To tell you the truth, had I been alone, and had there been no witnesses, *I think I should have been fearful of mentioning the dimensions of this flower*, so much does it exceed every flower I have ever seen or heard of, but I had Sir Stamford & Lady Raffles with me, and a Mr. Presgrave a respectable man of Manna, who tho' equally astonished with myself, *yet are able to testify to the truth*.³⁹

This act of confirmed witnessing—apparently only by European eyes, as the other hundred men present were not mentioned—was necessary not just because of the flower's dimensions, but also due to its uncanny smell. Stretching over three feet across and made up of fleshy, succulent, brick-red petals covered in yellowish-white protuberances, Arnold noticed "a swarm of flies . . . hovering over the mouth of the nectary, and apparently laying their eggs in the substance of it, it had precisely the smell of tainted beef."⁴⁰ Indeed, smell seemed to be the most difficult sensation to put to paper—a major problem when describing a flower so defined by its stench. As in the case of exotic orchids, whose wildly varying fragrances became key factors in species differentiation, Arnold and his team were forced to rely on analogy in communicating scent. Although the naturalists repeatedly claimed that the rainforest surrounding them smelled like decaying organic matter and dung, betraying some Romantic tropical dream of sylvan purity, the corpse flower seemed to emit an odor that enhanced its animalistic qualities.

Raffles confirmed the plant's dimensions, strange appearance, and "smell of decaying animal matter," to which he "[knew] not what to compare it," in a flurry of letters back to Britain. The act of credible witnessing became especially important as the group found itself unable to collect and preserve the specimen, let alone successfully transport it across the Indian Ocean back to London's Linnean Society.⁴¹ In words shockingly similar to those he had penned years earlier in *The Visit to the Moon*, Arnold expressed intense anxiety about being believed; even with more successful,

39. Arnold to Dawson Turner, July 9, 1818; italics in the original.

40. Arnold to Dawson Turner, July 9, 1818.

41. Thomas Stamford Raffles to the Duchess of Somerset, July 11, 1818. In Lady Sophia Raffles, *Memoir of the Life and Public Services of Sir Thomas Stamford Raffles, F.R.S.* (London, 1830), 316–17.

reliable witnesses by his side, the animalistic qualities of the corpse flower were unlike anything he believed British or European naturalists had observed before. No more space, in Arnold's writing, was dedicated to identifying the "Malay servant" responsible for the plant's discovery, and unlike other naturalists, Arnold seemed to have little interest in the vegetable prodigy's place in Indigenous Sumatran culture.⁴²

Immediately, the group attempted to record the dimensions of the plant, "taking immediate measures to be accurate in this respect, by pinning four large sheets of paper together, and cutting them the precise size of the flower."⁴³ Instead of dissecting and examining it on the spot, Arnold noted, "Sir Stamford suggested the Idea of preserving the flower in spirits, so that I hoped to be able to examine it more at leisure on my return to Manna."⁴⁴ They packed the flower in moist grass inside of a giant box, and sent servants running for base camp. Upon returning the next day though, bringing with them two more closed-up buds located nearby, the group "found the flower still in the box, the petals dark brown, wasted, full of Maggots & like a rotten mushroom, the only part that seemed to retain its form was the pistil."⁴⁵

The naturalist's dismay over the loss was palpable, but he worked quickly to preserve what was left in clear alcohol, shipping the glass jars to Sir Joseph Banks on a merchant vessel across the Indian Ocean by way of Bengkulu. Somewhere along the way, the two cabbage-like buds were lost or spoiled; the only specimen that survived the ordeal, then, was the small, fungus-like pistil, which Arnold advocated "ought not to be shoved aside among Sir Joseph's collection."⁴⁶ Raffles, for his part, claimed that this "wonder of the vegetable kingdom" could not be preserved because of its "chemical composition being fungous," citing also a dearth of the clear spirits necessary on hand to "preserve it entire"; instead, he proposed further missions into the interior to collect new specimens at various stages of development.⁴⁷ While both Raffles and Arnold claimed to have sketched the flower in situ, neither dissected either its inflorescence or

42. Note that "Malay" was an identity assigned to people from across the Indonesian Archipelago, more so because, by the nineteenth century, Malay was the common language of communication and writing rather than some sort of racist elision of distinct peoples. Unfortunately, this makes tracking the man's identity near impossible. Since he seemed not to recognize the flower, it is possible that he came from outside of Sumatra.

43. Arnold to Dawson Turner, July 9, 1818, Linnean Society Library & Archives. London.

44. Arnold to Dawson Turner, July 9, 1818.

45. Arnold to Dawson Turner, July 9, 1818.

46. Arnold to Dawson Turner, July 9, 1818. Arnold was apparently very concerned that the discovery would go unnoticed, as he mentions it several times in his lengthy letter to Turner. Near the end of the letter, he notes: "When you do receive this letter (which of course I cannot send as a post letter on account of the number of sheets and the great price it would cost) will you write to Sir Jos mentioning that I have described such a flower to you, and if possible will you prevent its being thrown on the shelf?"

47. Thomas Stamford Raffles to the Duchess of Somerset, July 11, 1818, in Lady Sophia Raffles, *Memoir of the Life and Public Services of Sir Thomas Stamford Raffles, F.R.S.* (London, 1830), 317–18.

the buds “almost as big as a child’s head,” and the illustrations were destroyed within a few years, unseen to botanists back in Britain.⁴⁸ These were the primary sources from which botanists produced most scientific descriptions of the corpse flower for the rest of the nineteenth century: Arnold and Raffles’s written descriptions of the monstrous plant from the field, and its surviving pistil, BM001122243.

Within two months of finding the prodigy of the vegetable world growing outside Manna, Joseph Arnold was dead. After fighting a fever and joint pains for weeks—probably malaria—contracted on this expedition through Western Sumatra, the naturalist succumbed to the ravages of the tropics. He had attempted to continue working through the fever, joining Raffles and Lady Sophia Raffles on another expedition to central Sumatra’s Minangkabau highlands. Unable to complete the journey, he stayed behind, administering smallpox vaccinations while fighting off cold sweats and shakes. Alone, surrounded by his sketches, books, specimens, and collecting materials, Arnold slipped into death at the age of thirty-six.⁴⁹ Unable to be preserved and transported back to Britain for an English burial—a result of both insufficient funds and a sweltering climate—the naturalist’s body was buried in Sumatra, his grave soon overtaken by the tropical parasites that congregated in graveyards. His corpse, subject to the rainforest’s accelerated rate of decay, was presumably consumed by the carrion flies responsible for pollinating *Rafflesia arnoldii*, the giant corpse flower. Arnold’s death would be the first of many bound up in studies of the corpse flower, further stoking fears of the floral monstrosity’s inextricability from its dangerous tropical environment.

Bud

Writing home from Bengkulu in March of 1820, naturalist William Jack (1795–1822)—hired by Raffles at the age of twenty-three while working in the Calcutta Botanic Garden—laid claim to a new study of the soon-to-be-famous corpse flower. After traveling through Borneo and Singapore collecting exotic plants while making anthropological observations, Jack entered into Western Sumatra’s interior, where he finally “obtained a flower-bud of the gigantic plant” described by his predecessor.⁵⁰ Confirming Raffles’s account, it really was, he noted, “one of the wonders of the vegetable kingdom.”⁵¹ Determined not to make the same mistakes as Arnold, Jack worked on uncovering its morphology immediately. Unable to determine its odd reproductive organs hidden inside its tightly bound petals, the naturalist instead “opened it,

48. Thomas Stamford Raffles to the Duchess of Somerset, July 11, 1818. Linnean Society Library & Archives, London.

49. Bastin, “Java Journal” (1973), Turner, *Memoir* (1864), and Sophia Raffles, *Memoir* (1830).

50. William Jack, “Description of Malayan Plants,” March 12, 1820 [Bencoolen], in *Companion to the Botanical Magazine*, 130 vols., ed. William Jackson Hooker (London, 1835–37), 1:135.

51. Jack, “Description of Malayan Plants,” 135.

and ascertained its structure, which [was] as peculiar as its dimensions, and seem[ed] to set analogy at defiance.”⁵² Jack spent the next few days illustrating the bud before it rotted away, while “the two Frenchmen” also employed by Raffles worked “industriously” alongside him, making “very large Zoological collections.”⁵³

The naturalist was precise in his dissections and careful to illustrate the flower’s growth from its host vine; if Jack attempted to preserve parts of the flower for shipment back to Britain, none survived—Arnold’s pickled pistil remained the only physical specimen available for study to botanists outside of Indonesia. Despite Jack’s hesitation, taxonomists were forced to rely on analogy to approach any definition of the plant, comparing written and illustrated descriptions of the flower’s size, color, smell, and morphology to distant floral curiosities across the globe. While Arnold’s pistil provided some model of *Rafflesia*’s reproductive mechanisms, respected botanists like Robert Brown used the scarce observations of collectors in situ to comment on its uneasy place in the natural order. Shortly after Jack’s letter reached Britain, though, Raffles began to report that two French naturalists hired as consultants were double-crossing him—he had caught them communicating discoveries, and sometimes sending specimens, back to France, though their zoological observations were often riddled with errors, prioritizing speed over accuracy. The race to collect, preserve, and publish Indonesia’s rare specimens was on, and the prodigy of the vegetable world, perhaps one of the biggest and most valuable treasures, was caught in the middle.

William Jack, though close in age to Joseph Arnold, had taken a much more direct path to botanical expertise. Born decidedly middle-class in Scotland in 1795, Jack had expressed an immediate interest in natural history; after receiving a degree from the University of Aberdeen at the age of sixteen, he relocated to London, training, like most, as a surgeon, hoping to gain quick employ by the East India Company. While in London, though, Jack immersed himself in botanical literature at the Linnean Society and Kew, simultaneously studying not just Latin but also Malay—the language increasingly necessary for valuable natural historical work in the Indonesian Archipelago. His rise through botanical society was quick: within just two years of living in London, the charming young naturalist had befriended Joseph Banks, Robert Brown, William Jackson Hooker, and Nathaniel Wallich, arguably the most successful botanist working from India in the nineteenth century.⁵⁴ While his quick social acceptance remains somewhat of a mystery, both Brown and Hooker seemed

52. Jack, “Description of Malayan Plants,” 135.

53. Jack, “Description of Malayan Plants,” 135.

54. Most of Jack’s records were destroyed or lost, many of them in the fire aboard the *Fame*. Accounts of his biography come mostly from William Jackson Hooker’s introduction to William Jack’s “Description of Malayan Plants,” in *Companion to the Botanical Magazine*, vol. 1, ed. Hooker (London, 1835–7); Sophia Raffles, *Memoir*; and William Jack, *Malayan Miscellanies* (Bencoolen, 1820).

dazzled by the young naturalist's skill in language, illustration, and preservation techniques. At the age of eighteen, then, Jack left for India aboard the *H.M.S. Baring* with plans to explore, publish, and gain steady work under Wallich in the famous Royal Botanic Garden, Calcutta.

In November of 1818, just a few months after Joseph Arnold's untimely death, Raffles arrived at the Royal Botanic Garden, Calcutta, apparently hoping to hire a new collector while cementing Sumatra's connections to India. Jumping at the chance to "form some useful connections" by sending rarer Indonesian plants back home while expressing more excitement than he had in months over Raffles's "large and very scientific library," Jack decided to leave Kolkata and sail for Bengkulu, leaving his Nepal paper unpublished.⁵⁵ Reaching the newly founded colony of Singapore by early 1819, Jack's spirits raised, figuring the Indonesian Archipelago as "purer" and more tropical in appearance than India and Nepal, situating the islands, like many other British colonial servants, as somehow more "primitive" than other imperial possessions. "Seas of glass wind amid innumerable islands," he wrote, "clothed in all the luxuriance of tropical vegetation, and basking in the full brilliancy of a tropical sky."⁵⁶ Accompanied by a number of porters, servants, and, notably, the two French zoologists in Raffles's employ, Jack rejoiced that he had arrived on the island "just in time to explore the woods before they yield to the axe," and had apparently effortlessly happened upon two new species of *Nepenthes*, carnivorous pitcher plants, "far surpassing any yet-known in Europe."⁵⁷

Writing to Colonel Addenbrooke, an officer of Princess Charlotte, Raffles linked the discovery of these new *Nepenthes* directly to "one of the greatest prodigies in nature which has yet been met with"—the corpse flower—suggesting a publication dedicated to King George III meant as "an *earnest* of what we propose to do hereafter," featuring new and exotic flora across the archipelago "wherever the *Dutch*, who are the *Vandals* of the East, do not establish themselves to our exclusion," even advancing the self-serving claim that although Sumatra lagged behind Java in cultural and artistic productions, "we have more originality, and the great volume of nature has hardly been opened."⁵⁸ While Sumatra appealed to world-weary naturalists like Jack precisely because of its imagined "purity" compared to India or Java, having been little explored by British or Dutch naturalists, Raffles sought to exploit this potential, claiming its lack of development as potential for further imperial—and financial—investment. Pointing to floral curiosities like pitcher plants and the corpse flower as signifiers of the "primitivity" of the island's tropical rainforests invited, in turn, colonial exploitation and extraction.

55. Jack, November 10, 1818 [Kolkata], "Description," in *Companion*, 130.

56. Jack, June 20, 1819 [Singapore], "Description," in *Companion*, 131.

57. Jack, June 20, 1819 [Singapore], "Description," in *Companion*, 131–32.

58. Thomas Stamford Raffles to Colonel Addenbrooke, June 10, 1819 [Singapore], in Sophia Raffles, *Memoir*, 381.

Jack, working alongside the two Frenchmen, had expressed his desire to locate the corpse flower even before arriving in Sumatra, apparently informed of its existence by Thomas Stamford and Sophia Raffles. Writing from Singapore after discovering his pitcher plants, the young naturalist wrote of the potential of this "wonder of the vegetable world," which he "would hardly venture to mention," had he "not know[n] that a specimen had actually gone home in spirits," referencing Arnold's pistil as material proof—although the plant had not yet been described or named.⁵⁹ Likely encouraged by Raffles, the young naturalist launched a number of collecting missions, retracing Arnold's steps outside of Manna, in a grand effort to locate and preserve, once and for all, the elusive corpse flower before it fell into French hands. A few weeks after penning a lengthy, ill-informed account of cannibalism in Central Sumatra in spring of 1820, Jack happened upon the massive inflorescence and its buds growing on a pile of elephant dung, equating the flower's monstrosity with what he considered an immoral, treacherous environment. Both descriptions, the naturalist noted, challenged notions of credibility; echoing Arnold's words just two years earlier upon encountering the corpse flower, Jack wrote that he "should almost fear to communicate" evidence of cannibalism among Central Sumatran communities, while the flower seemed "to set analogy at defiance."⁶⁰

Facing pressure from Raffles to publish his findings in the immediate wake of the French naturalist scandal, Jack quickly wrote up his dissections and findings on the plant's bud in a short manuscript sent to William Marsden along with his illustrations, forwarded on to Banks and Brown. Naming the giant flower "Rafflesia Titan!" and including its description alongside those of his two Singaporean pitcher plants (lacking exclamation points), *Nepenthes rafflesiana* and *Nepenthes ampullaria*, as well as several other species of economic plants like camphor and sago palm, Jack clearly hoped for rapid description and publication. Including the Malay name for the plant, "Kroobut," written in both Malay and English script, the naturalist noted that because his study was "made from a yet unexpanded flower," it was "consequently defective in many points," and "further observations are required to complete our knowledge of it."⁶¹ Although Jack's descriptions of the plant's reproductive mechanisms were largely inaccurate, he was careful to note that the flower sprang directly from a common ground-vine recently described in William Roxburgh and Nathaniel Wallich's *Flora Indica*, *Cissus angustifolia*—an observation of the corpse flower's parasitism that became vitally important in later debates (figs. 1 and 2).

Curiously, if Jack ever tried to collect and preserve a specimen of *Rafflesia*, he never recorded it. Despite apparently keeping buds preserved for long enough

59. Jack, June 20, 1819 [Singapore], "Description," in *Companion*, 132.

60. Jack, February 29, 1820, "Description," in *Companion*, 133; Jack, March 12, 1820 [Bengkulu], "Description," in *Companion*, 135.

61. William Jack MSS (1820), Library of the Botany Department, Natural History Museum (London).

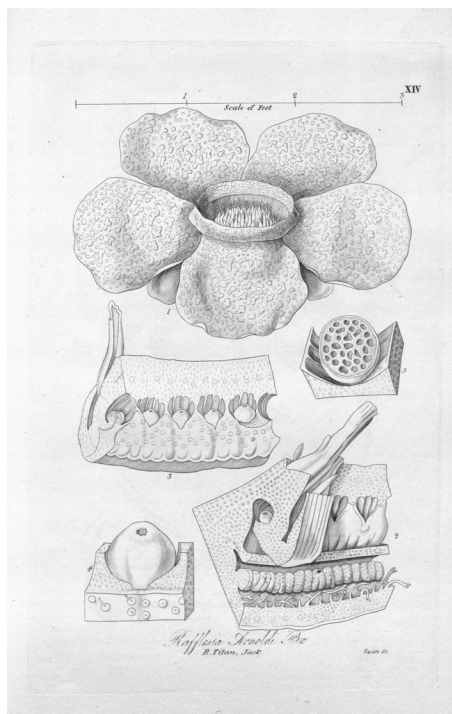


FIGURE 1. William Jack's 1820 illustration of "Rafflesia Titan!," named *Rafflesia arnoldii* by Robert Brown in the *Linnean Transactions*. Plate XIV: *Rafflesia arnoldii* Br., syn. *R. Titan* Jack, in William Jack, "Description of Malayan Plants," *Companion to the Botanical Magazine* 1 (1835–37). Courtesy of the Missouri Botanical Garden, Peter H. Raven Library.

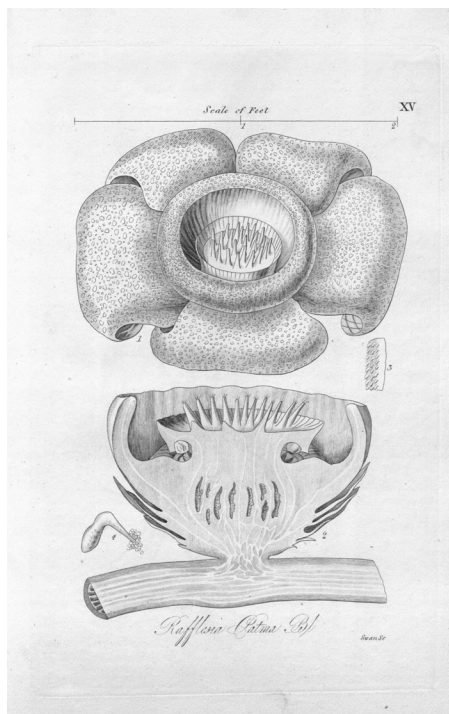


FIGURE 2. William Jack's 1820 illustration of the smaller *Rafflesia patma*. Plate XV: *Rafflesia patma* Br., in William Jack, "Description of Malayan Plants," *Companion to the Botanical Magazine* 1 (1835–37). Courtesy of the Missouri Botanical Garden, Peter H. Raven Library.

to dissect and illustrate them at his base camp, he makes no mention of the rotted flesh, spirits, or glass jars so integral to Arnold's collecting mission. Jack, for his part, failed to actually send any plant material home for describing and ordering. Indeed, the plant's material form dramatically shaped Jack's experience working with it; by dissecting only the cabbage-like buds, the naturalist avoided the corpse flower's signature fragrance and fleshiness entirely. These closed-up buds offered a window into the plant's reproductive mechanisms and unique morphology but gave no indication of its slow but fleeting transformation into animalistic horror, emitting the smell of rotting flesh, crawling with carrion flies, and oozing juices from its yellowish pustules. To Jack, undistracted by the inflorescence's appearance when expanded, the plant offered more potential as a vegetable prodigy than as a warning of the rainforest's far limits. Shortly after sending out his notes through Bengkulu, though, Jack began to complain of chest pain, finding himself unable both to trek

through the humid rainforest and to sit at his writing desk working on his specimens for long periods of time. He attempted to build a standing-desk from which to write, arrange, and illustrate, but soon after experiencing pulmonary symptoms and less than six months after locating the corpse flower, Jack—like Joseph Arnold—died, alone, in Sumatra.

This second loss devastated Raffles, who felt, perhaps rightfully so, responsible for bringing these young and promising naturalists to Sumatra in the first place. Since arriving in the Indonesian Archipelago in 1805, Thomas Stamford Raffles had witnessed the deaths of most members of his family—first, his wife, Olivia, carried away by malarial fever in 1814; then, one by one, all five of the children he bore with his second wife, Sophia. Writing to Thomas Horsfield from Bengkulu in 1822, Raffles seemed deeply grief-stricken, unsure of whether his colonies’ climates would ever allow for successful European settlement. Lamenting over the “melancholy afflictions which have lately overwhelmed us,” citing Arnold and Jack along with the rest of his recently deceased family, Raffles wrote that “these Events have quite unfitted me for any kind of application & so completely broken down my spirit & shaken my confidence in an Eastern Climate that it is only to England and a change of scene that we can look for permanent relief.”⁶² In the numerous letters and reports forwarded from Sumatra, though, Raffles’s anxieties with his naturalists’ death occupied more space than those of his wife and children; perhaps feeling that his familial losses were too personal for official communication, Raffles instead repeated, mantra-like, the extreme skill, passion, and perseverance his naturalists had shown, sacrificing themselves to their work.⁶³ For the governor, the corpse flower seemed intimately linked to this perilous “Eastern Climate.” Praising Brown’s recent announcement of *Rafflesia arnoldii*’s discovery—while pointing to a few mistakes that had been made under Brown’s lack of material evidence from which to work—Raffles quickly pivoted from listing those he had lost, noting that “the drawing of my large flower (I mean the full blown flower) is not so good as I could have wished—we have had so many Specimens that we have been able to improve upon it essentially—Mr. Brown’s Paper is most interesting and valuable”⁶⁴ (figs. 3 and 4). These new specimens, notes, and illustrations, though, never made it back to Britain for Horsfield or Brown to examine.

Making Sumatra’s interior rainforests knowable meant, to Raffles and his naturalists, coming to terms with the ever-present threat of tropical disease and environmental decay involved in practices of discovery. Swarmed by carrion flies

62. Thomas Stamford Raffles to Thomas Horsfield, January 24, 1822 [Bengkulu]. Mss. Photo Euro70, f. 42–51, India Office Records & Private Papers, British Library.

63. For multiple pages on Arnold’s death and dedication to his work, see Thomas Stamford Raffles, “Descriptive Catalogue of a Zoological Collection, Made on Account of the Honourable East India Company, in the Island of Sumatra and its Vicinity,” *Transactions of the Linnean Society of London* 13 (London, 1822): 239–40.

64. Thomas Stamford Raffles to Thomas Horsfield, January 24, 1822 [Bengkulu]. Mss. Photo Euro70, f. 42–51, India Office Records & Private Papers, British Library.

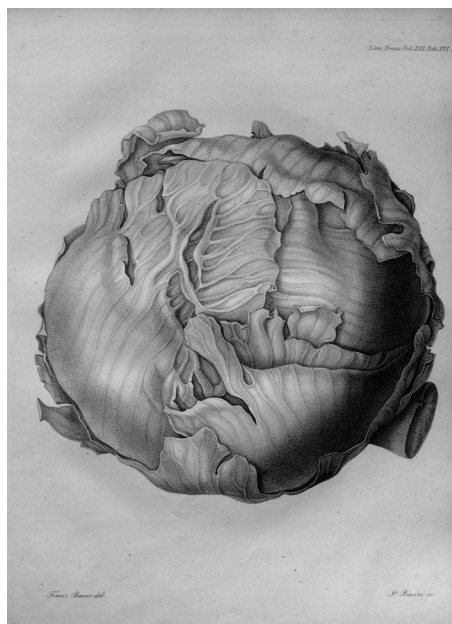


FIGURE 3. Ferdinand Bauer's illustration of the corpse flower's cabbage-like bud, based on Joseph Arnold's account from the field. Plate XVI: *Rafflesia arnoldii*, illustrated by Ferdinand Bauer, in Robert Brown, "Account of a New Genus of Plants, Named *Rafflesia*," *Transactions of the Linnean Society of London* 13 (1821). Courtesy of the Missouri Botanical Garden, Peter H. Raven Library.

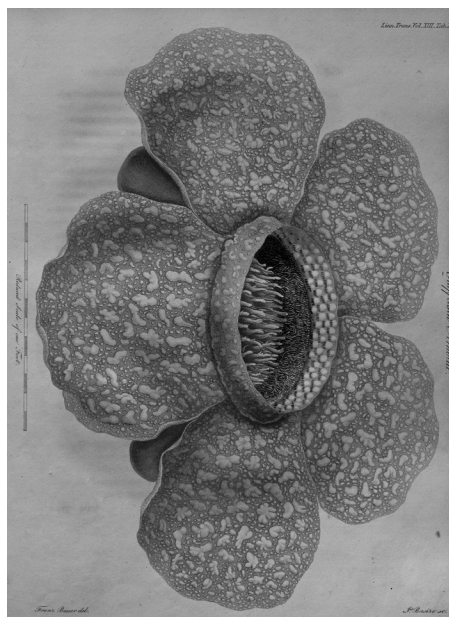


FIGURE 4. Ferdinand Bauer's famous illustration of *Rafflesia arnoldii* published alongside his first announcement of the flower's "discovery," based on Joseph Arnold's pistil and textual descriptions of the bloom. Plate XV: *Rafflesia arnoldii*, illustrated by Ferdinand Bauer, in Robert Brown, "Account of a New Genus of Plants, Named *Rafflesia*," *Transactions of the Linnean Society of London* 13 (1821). Courtesy of the Missouri Botanical Garden, Peter H. Raven Library.

and stinking of death, the corpse flower presented a visceral reminder of the double-sided nature of Indonesia's tropical rainforests. Underneath the sandalwood-scented breezes and "luxuriance of tropical vegetation" of the archipelago's verdant islands rested animal dung and rotting flesh, with armies of insects waiting to breed on and consume the refuse. "Primitive" forests, so valuable to naturalists hoping to make their fortunes on discovery and novelty, served as a dark double of overgrown, chaotic tangles of flora, connected, in these imperial servants' minds, to the people who inhabited them. Indeed, Raffles's thirst for making the plants and animals of these interior forests knowable relied on material extraction and exploitation.

The corpse flower could not be fully, completely ordered unless it could be removed from its home and dried or pickled, committed to paper or spirits for storage and display in dusty herbaria and museums. In this, then, the flower resisted—rotting within days, forcing its observers to adjust its scale and proportions, and even sinking



FIGURE 5. A cross-section of a female flower bud of *Rafflesia arnoldii*, illustrated by Ferdinand Bauer and published in Robert Brown's 1840s revision of his investigations into the corpse flower, in which he compared it to other species. Tab. XXII: *Rafflesia arnoldii*, illustrated by Ferdinand Bauer, in Robert Brown, "Description of the Female Flower and Fruit of *Rafflesia Arnoldi*, with Remarks on its Affinities," *Transactions of the Linnean Society of London* 19 (1844). Courtesy of the Missouri Botanical Garden, Peter H. Raven Library.

into the waters outside of Bengkulu. *Rafflesia* challenged its naturalists to work without its body, evading possession, protected by its disease-ridden and inaccessible environment. While Robert Brown achieved a remarkable likeness of the flower in 1820 and then later in 1834, adeptly illustrated (almost a decade later) by prominent botanical artist Ferdinand Bauer, their constructions were based on incomplete evidence—incomplete material back at home in the museum and herbarium—opening

themselves up to criticism from naturalists who actually *had* seen the plant in the field.⁶⁵ Regardless of elite naturalists' skill in taxonomy from a distance, anxiety over missing evidence in collections persisted. For the next few decades, botanists working in London were forced to classify, illustrate, and model the corpse flower from second-hand accounts, making lofty claims about its place in the natural order of things without actually holding the plant's physical body (fig. 5).

☞ Nature Resistant, Nature Lost

Rafflesia is one of the most endangered genera of plants in the world.⁶⁶ Some species, like the gigantic *Rafflesia arnoldii*, are nearing extinction, their Indonesian rainforest homes threatened by agricultural development, deforestation, and climate change—the foundations for which solidified in the nineteenth century, as European explorers scouted the mountainous islands not for spices but, rather, for long-term clearing, development, and colonial rule. Naturalists working in Southeast Asia have struggled to count the exact number of corpse flowers left alive, as they might endangered tapirs or other rare animals—*Rafflesia*'s buds are difficult to locate unless already geotagged, and the timing of their bloom cycle complicates matters. Waiting a few days to trek into the rainforest might mean missing the flower's magnificent bloom, finding in its place maggot-filled, pulpy rot. Catching a glimpse of the flower in bloom is, indeed, akin to hunting down a wild animal in its natural habitat—fleeting, majestic, foul-smelling, ephemeral. Ecotourism has brought renewed interest to such natural rarity, inviting well-moneyed travelers to trek along now well-worn paths through the diminishing forests to gather around a known bloom, telling stories about its habitat while tourists snap poorly-lit photos on their iPhones. The tours can be booked online, timed with the flowers' short bloom cycles, these foreign dollars dedicated to rainforest conservation in the face of devastating deforestation. In this tightly regulated context, encountering *Rafflesia* feels like watching an animal in a zoo, conjuring up the irreconcilable feelings of loss, beauty, wonder, and melancholy described by scholars like Susan Stewart and John Berger.⁶⁷

This desire to "capture" a plant—fueled in part by ongoing concerns about the nature of witnessing, proving, and believing—run through every encounter with

65. Much of this discourse can be followed in disagreements between Robert Brown and William Griffith. Robert Brown, "Description of the Female Flower and Fruit of *Rafflesia arnoldii*, with Remarks on its Affinities and an Illustration of the Structure of *Hydnora africana*," *Transactions of the Linnean Society of London* 19 (1844); and William Griffith, "On the Root-Parasites Referred by Authors to Rhizanthææ; and on Various Plants Related to Them," *Transactions of the Linnean Society* 19 (1845): 303–47. David Mabberley covers Brown's account, with some errors, in "Robert Brown on *Rafflesia*," *Blumea* 44 (1999): 343–50.

66. See, for example, Pastor Malabrigo Jr. et al., "Most of the World's Largest Flowers (Genus *Rafflesia*) Are Now on the Brink of Extinction," *Plants People Planet* (2023): 1–16.

67. Susan Stewart, *On Longing: Narratives of the Miniature, the Gigantic, the Souvenir, the Collection* (Durham, N.C., 1993); and John Berger, *Why Look at Animals?* (New York, 2009).

Rafflesia, from Deschamps's lost papers to Arnold's pistil and Jack's buds. There is good reason to desire material evidence of the corpse flower's existence. More recent biological work has used the genus to question the definition of floral life altogether (what does it mean to be a plant without chlorophyll?) and to study the blurry boundaries of individual organisms, focusing on *Rafflesia*'s parasitism of its host vine through DNA research.⁶⁸ Intimately bound to acts of seeing the plant in the flesh and its sociopolitical stakes, material proof—whether through writing, drawings, or, ideally, the physical specimen itself—haunted the elusive corpse flower for centuries, challenging the limits of natural history collections in and out of the museum or herbarium. As Arnold so ineloquently penned in his fictional *Philosophical Romance*, being the only person to witness something so unbelievable is a lonely act; writing from the Amazonian rainforest in the 1840s, palm expert Karl Friedrich von Martius called this phenomenon "botanical loneliness," claiming that even if a specimen was

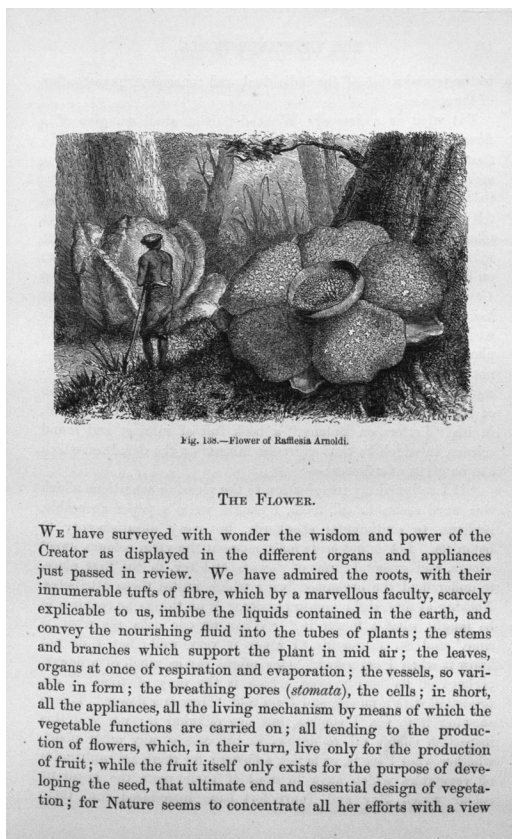


FIGURE 6. Fantastical illustrations of *Rafflesia* exaggerated its size and prominence well into the second half of the nineteenth century. Fig. 138: Flower of *Rafflesia Arnoldi*," in Louis Figuier, *The Vegetable World: Being a History of Plants, with their Botanical Descriptions and Peculiar Properties* (New York, 1867). Courtesy of the Missouri Botanical Garden, Peter H. Raven Library.

68. T. S. Barkman et al., "Mitochondrial DNA Sequences Reveal the Photosynthetic Relatives of *Rafflesia*, the World's Largest Flower," *PNAS* 3 (2004): 787–92; C. C. Davis et al., "Floral Gigantism in Rafflesiaceae," *Science* 315, 5820 (2007): 1812; Jonathan Shaw, "Colossal Blossom: Pursuing the Peculiar Genetics of a Parasitic Plant," *Harvard Magazine* (2017), accessed March 4, 2024, <http://harvardmagazine.com/2017/03/collosal-blossom>; Xi Zhenxiang et al., "Massive Mitochondrial Gene Transfer in a Parasitic Flowering Plant Clade," *PLOS Genetics* 10.1371 (2013); and Xi Zhenxiang et al., "Horizontal Transfer of Expressed Genes in a Parasitic Flowering Plant," *BMC Genomics* 13 (2012). More recent research and illustrations of *Rafflesia* have been published and publicized by Chris Thorogood, deputy director and head of science at the Oxford Botanic Garden and Arboretum.

illustrated, preserved, or even seen a second time, no one would ever experience that initial shock of discovery upon finding it. Interest in the natural world, pious intentions and myths of the solitary explorer aside, was, as Arnold wrote, “provided by the desire of imparting its discoveries to others and thus making them participate in his joys”⁶⁹ (fig. 6).

Specimen BM001122243 sits on a shelf in London’s Natural History Museum, thousands of miles away from its Sumatran rainforest home, a constant, if largely unvisited, reminder of the corpse flower’s 1818 “discovery” and the many lives embroiled and lost in its collection, preservation, description, and display. The dearth of that collection, though, is perhaps even more telling of the history of colonial botany in the nineteenth century. Absence, in this case, is as telling as presence. If the history of botanical practice is a history of materiality—of wild plants ripped from their homes, pressed onto paper and pickled in jars, loaded into crates aboard ships, and piled up, ordered, and re-ordered back in Britain and Europe, the story must also, necessarily, be one of loss, of the lack of materiality.

For every rare plant successfully collected in the Indonesian rainforest, dozens more evaded capture, withered before they could be preserved, died or rotted at sea, or were lost somewhere in the thousands of specimens of gardens, herbaria, and museums. Indeed, even those that did survive the trip represent a different type of loss: an empty space in the forest, bark stripped to remove a moss colony, a tree felled to reach an arborescent orchid or pitcher plant, a vine ripped from the ground to chop off the fleshy corpse flower with a small knife. The material culture of botany is extractive, violent, and ongoing, a symbol of the commercial, imperialist, and paternalistic drivers behind the Anthropocene. In constructing the tropics from within colonial herbaria along aesthetic, moral, and scientific lines, studying failure presents a way of figuring nature as resistant in the face of remarkable loss. The soon-to-be-extinct corpse flower, displayed as a single fungus-like pistil, stands as the limit of our control, redefining what it means to collect, possess, and truly know an organism.

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69. Arnold, *Philosophical Romance*, f. 113.