



EDITORIAL

Rediscovering Cryptozoology as an Integrative Science



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“Monster” is a prejudicial term that conjures fear, grotesquerie, and moral judgment, yet its visceral appeal sells books, documentaries, and headlines. “Cryptozoology,” in contrast, is a moniker that has drifted from public view despite addressing a far broader set of phenomena than tabloids suggest. Defined broadly, cryptozoology encompasses not only putative “unknown or hidden” fauna but also a host of other animal-like phenomena that resist straightforward scientific classification (Coleman & Clark, 1999; Simpson, 1984). In particular, the taxonomy of cryptids might reasonably include traditional fauna unknown to science, taxa once considered mythical but later validated, culturally-embedded motifs like werewolves (de Blécourt, 2007) or other shape-shifters (Kachuba, 2023), folklore-type beings such as “little people” and anomalous humanoids that often overlap with ghosts and extraterrestrials (Evans, 1987; Hernandez et al., 2018; Houran, 2000; Kumar & Pekala, 2001), as well as “entity encounters” during psychedelic (e.g., Davis et al., 2020) or spontaneously occurring transcendental states (e.g., Houran, 2025). To be sure, it is not always apparent whether such interactions involve material or immaterial “creatures.”

Critics therefore understandably argue that “pure” cryptozoology has been muddled by the inclusion of esoteric phenomena. While such topics may merit investigation and can be tangentially related, it seems unlikely they are biologically grounded. Their presence tends to distort datasets and discourage academic participation. Many of these paranormal subjects also draw heavily from popular culture, contributing to definitional creep and blurring the boundaries of cryptozoology as a zoological discipline. Although scientists have historically engaged with ideas now associated with cryptozoology, the term was coined by zoologist Ivan T. Sanderson in the early 1940s and first appeared in print in his 1961 work *Abominable Snowmen: Legend Come to Life* (cf. Heuvelmans, 1968, p. 33). The word derives from the Greek *kryptos*, meaning “hidden, unknown, or secret,” combined with zoology, the study of animals (Mackal, 1980). Sanderson also investigated UFOs and other anomalies, but he generally kept these pursuits separate from zoological research. Belgian zoologist Bernard Heuvelmans (1986) later expanded Sanderson’s framework with an annotated checklist of unknown animals (“cryptids”), including: (a) species or subspecies apparently unknown to science, such as alleged pre-historic survivors; (b) species or subspecies known from historical records but presumed extinct, yet claimed to persist; (c) known species or subspecies reported outside their scientifically recognized geographic ranges; (d) known species or subspecies allegedly introduced or occurring artificially outside their accepted ranges; and (e) unrecognized, non-taxonomic variants of known species or subspecies.



Rather than dismiss cryptozoology as mere myth-chasing, we should therefore appreciate how its themes resonate within legitimate zoological and social-scientific arenas. When folklore and fieldwork intersect, the line between cultural imagination and biological reality can blur—and sometimes spectacularly.

HISTORICAL PRECEDENTS AND EMBLEMATIC EXAMPLES

Following from the above, the narwhal (*Monodon monoceros*) long inspired medieval and early modern European accounts of the “unicorn,” with its long tusk treated as magical horn until naturalists confirmed the animal’s existence and clarified the tusk’s biological origin (Pluskowski, 2004). The giant squid (*Architeuthis dux*) underlies mariners’ kraken and sea-monster stories; once dismissed as sailor’s lore, specimens and deep-sea observations have shown that very large squid are real, anchoring a folkloric archetype to legitimate biology (Salvador & Tomotani, 2014). Recent examples further illustrate how animals once treated as rumor or local lore were documented scientifically. The Laotian rock rat was formally described as *Laonastes aenigmamus* after local reports of the “kha-nyou” signaled a previously unrecognized lineage (Jenkins et al., 2005). The saola (*Pseudoryx nghetinhensis*), long a subject of local rumor in the Annamite Range before its formal recognition, was described in the early 1990s and transformed regional legend into an urgent conservation priority (Dung et al., 1993). The New Guinea “singing dog,” once thought extinct in the wild, has been confirmed by field observations and genetic studies in the 2010s, corroborating Indigenous and local knowledge about a distinctive wild canid (Surbakti et al., 2020).

And beyond such conventional cryptids lie more liminal “entities”—figures that straddle biomedical plausibility and mythic ambiguity. These beings hover at the thresholds of human and animal, life and death, and the terrestrial and the transcendent. They include vampires (Maas & Voets, 2014), zombies (Charlier, 2017), Men-in-Black (Rojcewicz, 1987), angels (Lange & Houran, 1996), demons and possession phenomena (Escolà-Gascón et al., 2023), tulpas and other mental-energy constructs (Little et al., 2021), and even the real-world predatory monsters known as serial killers (Federal Bureau of Investigation, 2005). Only time will reveal the ultimate nature of these reported phenomena, along with the

most famous cryptids in our cultural history, i.e., the Loch Ness Monster (or “Nessie”: Bauer, 2002), Sasquatch (or “Bigfoot”: Meldrum, 2006), El Chupacabra (or “the goat sucker”: Tomeček et al., 2017), and Mokele-Mbembe (the so-called “living dinosaur”: Mackal, 1987).

Treating cryptids as a spectrum or complex family tree rather than a single problem clarifies why interdisciplinary protocols, ethically attuned fieldwork, and transparent evidentiary standards are essential to separate genuine biological surprises from culturally-meaningful phenomena and information artifacts. Moreover, each class raises distinct empirical questions, methods, and risks. Ecological surveys and environmental-DNA techniques suit putative biological taxa; ethnography and narrative analysis suit folklore-laden reports; cognitive and perceptual experiments suit anomalous experience; and forensic media analysis suits contested visual evidence. This pluralistic framing broadens tractable research questions and helps to explain why reports of human-like cryptids often attract disproportionate attention: humanoid reports tap familiar social schemas, emotional resonance, and narrative plausibility in ways that anonymous-animal reports do not. Integrating these divergent perspectives yields the strongest explanatory framework by testing material claims against cognitive and cultural processes and recognizing that physical stimuli and symbolic meaning can co-produce cryptozoological relevant narratives (see e.g., Mayor, 2005).

Consider the example of “dragons,” a mythical creature typically depicted as a large, powerful reptile—often winged and fire-breathing—that appears in the folklore and mythology of cultures around the world. Some scholars have argued that encounters with large, fossilized bones helped to stimulate and reshape dragon imagery across cultures, as people interpreted exposed bones as the remains of giant serpents or monsters, thereby amplifying dragon traditions (Mayor, 2005, 2023; Rudwick, 1985). Other researchers emphasize psychological or cultural origins, namely, the idea that dragon and rainbow imagery often converge because both are tied to liminal, watery, or atmospheric forces—dragons exemplify storms, rivers, and rain, while rainbows serve as visible manifestations of those same conditions—so storytellers personified the luminous arc as a serpentine or draconic figure, producing motifs such as the “Rainbow Serpent” (Blust, 2023; Leeming, 2005).

This framework gains further traction when applied to historical cases, as presented earlier, where tangible

evidence intersects with myth-making. The examples of narwhal tusks, giant squid carcasses, and fossil bones illustrate how material traces can give rise to enduring myths, underscoring the need for coordinated natural history investigations alongside forensic, ethnographic, and cognitive protocols.

PAST CHALLENGES AND RECENT STRIDES

The International Society for Cryptozoology (ISC) emerged in 1982 as an effort to legitimize the study of hidden animals, publishing the journal *Cryptozoology*, an *ISC Newsletter*, and hosting annual conferences to promote the field (cf. Clark, 1993; Cryptid Archives Wiki, n.d.; Loxton & Prothero, 2013). By the late 1990s the ISC suffered declining membership, limited academic acceptance, and financial strain; its journal ceased in 1996, and the society dissolved in 1998, with a brief, unsuccessful revival in 2004. The ISC's rise and fall exemplifies the broader struggles fringe sciences face in gaining lasting institutional support and reveals how institutional dynamics shape which anomalous reports receive sustained scientific attention. Subsequent work by author and researcher Loren Coleman can be considered an extension of ISC's mission. His stewardship of archives, publications, and public outreach has preserved much of the society's documentary legacy, while reframing cryptozoology as a museum-centered, publicly engaged field. The resultant International Cryptozoology Museum (Portland, Maine) functions as a living archive and outreach platform that sustains public interest, provides continuity for scattered records, and bridges popular fascination with efforts at more systematic documentation and scholarship.

Cryptid encounters remain common in contemporary culture—sightings of sasquatch, lake monsters, winged humanoids, and phantom felids generate a substantial archive of qualitative and material evidence in local news, amateur footage, and community investigations. Studying these reports does not demand endorsing extraordinary ontologies (cf. Schooler et al., 2018); it demands disciplined curiosity about what the evidence might reveal biologically, ecologically, cognitively, socially, and institutionally. Historically, unidentified-animal reports have prompted bona fide discoveries and range revisions, and systematic fieldwork—careful documentation, camera-trap grids, passive acoustic arrays, and targeted environmental DNA (eDNA) sampling—can separate misidentification from genuinely anomalous signals

while strengthening local conservation knowledge. eDNA metabarcoding, which identifies multiple species from environmental samples by sequencing genetic markers and comparing them to reference databases, has proven sensitive and cost-effective for detecting rare or cryptic taxa in aquatic and terrestrial settings (Deiner et al., 2015; Ruppert et al., 2019; Xiong et al., 2022). Meta-analyses indicate eDNA often outperforms conventional surveys in detection rates (Fediajevaite et al., 2021), yet reliability hinges on protocol details—sample volume, capture medium, contamination controls, and replication—so rigorous standards are essential (Deiner et al., 2015; Goldberg et al., 2016; Xiong et al., 2022).

These empirical successes and methodological advances set the stage for a focused inventory of recent discoveries and rediscoveries that demonstrate the value of targeted field efforts. In particular, Table 1 summarizes notable discoveries and rediscoveries of species reported between 2000 and 2025 and is intended to illustrate recent, empirically documented instances where anomalous reports or concentrated field effort produced taxonomic novelty or important conservation-relevant findings. The table lists each species by scientific and common name, classifies the entry as a “New” description or a “Rediscovery,” gives the year of the report, notes the primary location or region, and cites the short-reference used in the manuscript reference list. The 25-year window specifically captures contemporary methodological regimes (e.g., targeted camera trapping, passive acoustic monitoring, eDNA, and rapid-response fieldwork) while including a small number of pre-2005 rediscoveries that materially contextualize recent trends.

Entries were selected against three explicit criteria: (a) *taxonomic novelty* (i.e., formal species descriptions or taxonomic revisions that added a recognized species), (b) *conservation significance* (i.e., rediscoveries or finds that substantially altered conservation status or management priorities), and (c) *high public or scientific attention* (i.e., cases that generated notable follow-up research or policy interest). Each included item meets at least one of these criteria: for example, *Pongo tapanuliensis* and *Bassaricyon neblina* represent clear taxonomic novelties with genomic or taxonomic reviews; *Chelonoidis phantasticus* and *Dryococelus australis* are rediscoveries with major conservation implications; and Voeltzkow's chameleon and *Megachile pluto* generated notable scientific and public attention that exemplifies how rediscovery can reshape priorities and methods.

Table 1. Notable Zoological Discoveries and Rediscoveries (2000–2025).

Species (common name)	Type	Year	Location / Region	Reference
Pongo tapanuliensis (Tapanuli orangutan)	New	2017	Sumatra, Indonesia	Nater et al. 2017
Bassaricyon neblina (Olinguito)	New	2013	Andes (Ecuador/Colombia)	Helgen et al. 2013
Boophis “Star Trek” frogs	New	2024	Madagascar	Vences et al. 2024
Crurifarcimen vagans (wandering leg sausage)	New	2011	Tanzania	Enghoff 2011
Callicebus caquetensis (purring titi monkey)	New	2010	Caquetá, Colombia	Defler et al. 2010
Voeltzkow’s chameleon	Rediscovery	2020	Madagascar	Glaw et al. 2020
Megachile pluto (Wallace’s giant bee)	Rediscovery	2019	Indonesia	University of Sydney 2019
Chelonoidis phantasticus (Fernandina giant tortoise)	Rediscovery	2019	Galápagos Islands, Ecuador	Jensen et al. 2022
New Guinea singing dog	Rediscovery	2016	New Guinea	Surbakti et al. 2020
Dryococelus australis (Lord Howe Island stick insect; “tree lobster”)	Rediscovery	2001	Ball’s Pyramid, Australia	Priddel et al. 2003

Note: Entries were selected for taxonomic novelty, conservation significance, or notable scientific/public attention; “New” denotes formal species descriptions or taxonomic revisions, “Rediscovery” denotes species thought extinct or missing from the wild and later documented.

Table 1 also reveals some broader patterns worth highlighting. Technological advances have seemingly reshaped discovery rates: the widespread adoption of camera traps, passive acoustic arrays, and eDNA since the early 2000s has increased detection of cryptic and low-density taxa and enabled faster verification of field reports. Rediscoveries tend to cluster in well-surveyed but logistically difficult refugia such as islands, isolated mountain ranges, and remote forest fragments, where species thought lost persist in small, inaccessible populations. Geographic hotspots reflect a combination of true biodiversity and uneven survey effort, with the tropical Andes, Southeast Asia, Madagascar, and island systems appearing disproportionately in notable finds because they combine high endemism with renewed targeted effort.

The taxonomic emphasis of recent discoveries has broadened: although high-profile vertebrate finds still attract attention, many important additions are in invertebrates, amphibians, and small mammals that require specialized methods and taxonomic expertise. Rediscoveries frequently follow focused searches by small teams or knowledgeable amateurs whose local familiarity and persistence complement institutional science, pointing to the value of ethical amateur–professional collaboration. Media attention and conservation urgency interact in complex ways; high-profile rediscoveries can rapidly mobilize funding and protection but can also distort priorities when not tied to robust conservation assessments.

Data quality and verification remain limiting factors for interpreting reports, since increases in low-quality footage

and potential digital manipulation heighten the need for forensic validation, independent replication, and standardized reporting protocols. Taken together, these patterns indicate that recent trends are driven as much by changes in tools and effort as by residual biological surprises, and that methodological rigor, targeted effort, and ethical partnership are central to converting anomalous reports into verifiable biological and conservation knowledge. These empirical patterns clarify why specific methodological guardrails (e.g., formal definitions and plausibility estimates) and collaborative practices are now critical.

To be sure, witness narratives often reveal how perceptual biases, memory reconstruction, prior belief, and collective storytelling can shape anomalous experiences (e.g., Ironside & Wooffitt, 2021). Standardized interviews, situational reconstructions, and preregistered experiments can translate testimony into testable hypotheses about attention, pattern detection, or rumor dynamics (e.g., Houran et al., 2025). Anthropologists, folklorists, and media scholars can trace how landscape, local history, economic anxieties, and digital platforms influence which creatures are seen, and how evidence is curated, contested, and circulated (e.g., Baynham-Herd, 2020; Daly, 2023; Nickell, 2011; Paxton et al., 2025; Thadani, 2023). These insights underscore how publics evaluate extraordinary claims and how institutions might better engage communities whose experiences fall outside disciplinary frames.

Note that even the most concrete forms of evidence such as sworn testimonials and photographic data often

occupy a liminal space between empirical artifact and folkloric symbol, where competing interpretations blur the boundary between documentation and myth. For example, the “Patterson-Gimlin film,” a 1967 short motion picture shot at Bluff Creek that purportedly shows a large bipedal hominoid (i.e., sasquatch), has been subjected to decades of forensic, biomechanical, and testimonial analysis and counterclaims. Nickell (2011, 2020) and other skeptics argue it was a costumed hoax as supported by a popularized confession by Bob Heironimus, aka “the man in the suit” (Long, 2004), whereas specialists contend the subject’s gait and proportions resist easy mimicry (Krantz, 1992; Meldrum, 2006) and that Heironimus’ confession has dubious aspects (Green, n.d.). Likewise, the “Surgeon’s Photograph”—long promoted as iconic visual evidence for a large plesiosaur-like creature in Loch Ness—was apparently exposed in mainstream accounts after a 1994 confession alleged that it was staged. Yet, that confession and the wider hoax narrative have been challenged by investigators who question the documentary record and the motives of the key witnesses (for a discussion, see Bauer, 2002, pp. 238–239).

But despite centuries of exploration, our oceans—and other vast, remote regions like mountain ranges, rainforest basins, and deep lakes—continue to constitute Earth’s final frontiers with the capacity for biological surprises at the macro-scale. For instance, *Chirodectes maculatus*, a rare spotted box jellyfish, is a marine enigma seen only twice, first in 1997 off Queensland, Australia, and again in 2021 near Papua New Guinea where it was filmed in the wild (Roscoe, 2022). Its extremely elusive nature makes any sighting a historic event. Researchers also recently identified a new species of lanternshark (*Etmopterus westraliensis*), a slender, black bioluminescent shark found at depths of up to 610 meters. With glowing photophores on its belly and sides, the 40-centimeters-long predator joins two other new shark species previously identified from recent expeditions (Ng et al., 2025). There are compelling reasons to expect other disruptive discoveries ahead. Deep-sea expeditions routinely uncover new species, and the longest known animal was only recently identified (Irving, 2020). Research also supports “Cope’s rule” in marine life, suggesting that animal lineages tend to evolve toward larger body sizes over time (Heim et al., 2015). But, the pace of discovery is hindered by an average 21-year lag between finding and formally describing new species—delays shaped by biological, social, and geopolitical biases (Fontaine et al., 2012).

Drawing from the World Register of Marine Species (WoRMS), Appeltans et al. (2012) specifically estimated that hundreds of thousands of marine species remain undocumented, with new macro-species continuing to emerge. UNESCO (2012) echoed this optimism, proclaiming a new “marine Age of Discovery” driven by technological breakthroughs that grant access to previously unreachable habitats. However, this hopeful outlook—at least regarding the discovery of large marine animals—is tempered by more conservative projections that constrain the likelihood of finding new large species, especially when viewed through a Bayesian lens that accounts for prior probabilities. For example, Woodley et al. (2008) estimated that only up to three pinniped species (i.e., aquatic mammals with flipper-like limbs)—seals, sea lions, or walruses—may remain undiscovered, based on historical patterns of species description and statistical modeling.

INSTITUTIONAL, ETHICAL, AND RESEARCH IMPERATIVES

Charles Darwin’s (1859, 1868) practice of treating anomalous natural-history reports and so-called “monstrosities” as evidence about variation and species limits offers a valuable historical precedent about collecting diverse evidence, weighing naturalistic observation alongside documentary reports, and remaining open to theory revision remain sound methodological principles. The modern study of cryptid reports likewise encourages integrative protocols that few research areas routinely practice. Mixed methods combining ecological fieldwork, cognitive testing, ethnography, acoustic and visual analytics, and community-based participatory research can yield falsifiable findings while reducing adversarial dynamics between claimants and skeptics.

Following this idea that natural-history reports can highlight variation, anecdotal accounts and local oral traditions indeed suggest that well-known species may attain extraordinary sizes in certain ecosystems. One striking example is the Congolese legend of the “J’BaFofi,” a giant spider described in both indigenous accounts and cryptozoological literature (Roy, 2024). It is said to have a leg span of up to five feet (1.5 meters), which far exceeds the largest scientifically documented spider, the Goliath birdeater (*Theraphosa blondi*), whose leg span reaches 30 centimeters (12 inches) (Foelix, 2011). Another case is the 1959 Katanga helicopter sighting, in which Colonel Remy

Van Lierde reportedly photographed an enormous snake estimated to be 40 to 50 feet (12–15 meters) long (Heuvelmans, 1978). If accurate, this would surpass the largest snake recorded in modern times—the newly discovered Northern Green Anaconda (*Eunectes akayima*), which reaches up to eight meters (26 feet) and weighs around 440 pounds (200 kilograms) (Puiu, 2024). In fact, the Katanga snake's reported size rivals that of *Titanoboa cerrejonensis*, a prehistoric giant that lived during the Paleocene Epoch (~66–56 million years ago) and stretched up to 15 meters (49 feet) in length (Head et al., 2009).

Responsible inquiry requires transparent preregistration, open data sharing with reputable investigators, independent replication of acoustic or visual anomalies, routine environmental controls for DNA sampling, and forensic validation of imagery and audio. Researchers must adopt standardized, dignity-preserving interview protocols and implement robust protections for participant privacy. A select few cryptozoological oriented studies have been published in scientific periodicals over recent years (e.g., Daly, 2023; Greenfield, 2023; Sykes et al., 2014), along with a vast array of tangential topics (Houran & Bauer, 2022). However, journals, funders, and institutional review boards should accept null results, method papers, and replication studies as valuable contributions rather than marginal or unpublishable outcomes. Investigators must also anticipate hazards such as low-quality footage, deepfakes, sensationalized reporting, privacy breaches, and incentives that could encourage dangerous behavior or wildlife exploitation.

A productive research program should begin with interdisciplinary pilot projects co-designed with local communities and naturalists to align scientific rigor with community needs. Participatory research methods—where local stakeholders assist in the selection of research questions, sampling strategies, and interpretive frames—help to ensure relevance, trust, and shared epistemic investment (Cornish, 2023; Vaughn & Jacquez, 2020). Rapid-response documentation teams with pre-agreed methodological checklists can capture high-signal events before artifacts or contamination accumulate. Indeed, the Bigfoot Field Researchers Organization (BFRO) already does this, though generally speaking this approach may require a baseline natural history to be productive. Scalable, replicable measurement tools such as passive acoustic arrays, systematic camera-trap grids, standardized interview batteries, and routine eDNA sampling at suspect sites should be prioritized. Funded

meta-analytic work can synthesize case reports, map spatial clusters, and quantify methodological variation across studies. Editorial reforms and new publication venues should explicitly welcome rigorous null findings, replication efforts, and method-focused contributions. These investments will convert episodic curiosity into cumulative knowledge, increase the likelihood of genuine biological discovery, and reduce the cultural noise that obscures meaningful signals.

TREKKING TOWARD NEW INSIGHT AND KNOWLEDGE

Amateur naturalists and cryptozoologists often shoulder the burdens of long-term observation because role identity, community belonging, and perceived stewardship motivate sustained engagement (Carter & Mangum, 2022; McCall & Simmons, 1978). Stakeouts and ritualized field practices build skills in tracking, acoustics, and camera-trap work while producing narrative rewards that eclipse material costs (Cunningham, 2022; Durakiewicz, 2022). Productive science should harness this distributed observational capacity via ethically rigorous collaboration that converts grassroots investments into conservation-relevant data and empirically tractable questions about perception and biodiversity (cf. Bonney et al., 2009). Local stakeholders often care deeply about apparent anomalies that affect recreation, tourism, or perceived safety, and credible investigation can inform management responses, reveal previously unrecognized habitats, and strengthen civic trust in scientific inquiry (Houran et al., 2020; Ironside & Massie, 2020).

Cryptozoology now occupies a hybrid and controversial space between amateur natural history, folklore studies, and selective scientific engagement, as Brian Regal (2008, 2009) candidly discussed in his treatises on the inherent tensions between the competing “amateur vs. professional” sasquatch investigation groups. The field's conceptual broadening—from a narrow search for unknown animals to a spectrum that arguably includes psychological and cultural phenomena—creates interdisciplinary opportunities of real scientific and social value. Even some skeptical authorities have emphasized how many eyewitness reports may plausibly be based on some underlying physical reality, even if not representing an actual encounter with an unknown or presumably-extinct species (see e.g., Greenfield, 2023; Paxton & Shine, 2025).

When pursued with methodological humility, ethical care, and institutional protections for researchers and participants, the study of cryptid reports and associated material evidence can potentially reveal overlooked biodiversity, illuminate mechanisms of human perception and belief, and improve how science engages the public on anomalous claims. But intellectual curiosity does not imply credulity; it denotes disciplined openness. Monsters may indeed walk in our backyards or dwell in the back of our minds, but with robust tools and sober hypotheses, those monsters will do the work of revealing something important about our world and ourselves. Cryptozoology endures not as a relic of romantic speculation but as a reminder that discovery begins where imagination meets disciplined inquiry—an integrative frontier science still waiting for its next great expedition.

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