In 1733, as part of a programme to publish its early works in a uniform format, the Paris Academy of Sciences reprinted Mémoires pour servir à l’histoire naturelle des animaux (Histoire des animaux), last published in 1676, a work of both natural history and mechanistic comparative anatomy. However, unlike the other works in this enterprise, Histoire des animaux was extensively edited and updated, on the basis of manuscripts that the original editor Claude Perrault had left when he died in 1688. In 1749 Georges-Louis Leclerc de Buffon published the first volume of Histoire naturelle. Its volumes on quadrupeds, written with Louis-Jean-Marie Daubenton, held significant similarities to Histoire des animaux. The relationship between these works has not hitherto been examined. Buffon’s early ideas on species, in particular, resemble the emphasis on particulars of Histoire des animaux.

**Keywords:** Paris Academy of Sciences; King’s Garden (Paris); Buffon; Daubenton; Claude Perrault; Joseph-Guichard Duverney

**INTRODUCTION**

In 1733, as part of a programme to publish its early works in a uniform format, the Paris Academy of Sciences reprinted Mémoires pour servir à l’histoire naturelle des animaux, last published in 1676, a work of both natural history and mechanistic comparative anatomy. However, unlike the other works in this enterprise, Histoire des animaux (as I shall refer to it) was extensively revised and updated, on the basis of manuscripts that the original editor Claude Perrault had left when he died in 1688. In 1749 Buffon published the first volume of the 36 that he edited of Histoire naturelle. The volumes on quadrupeds, published in the 1750s and early 1760s, held some striking similarities to the content and format of Histoire des animaux. Unlike most of the other works in the republication program, Histoire des animaux was, it seems, more than a historical artefact.

The first volume of Histoire des animaux appeared in 1671, with accounts of the natural history, including the dissection, of 13 different species of exotic animals. In the main, these animals had come to the Paris Academy from the royal menageries at Vincennes and Versailles, following a programme that had begun in the spring of 1667. Some of the descriptions had already been published in a 1667 pamphlet and a short volume in 1669.

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But these earlier publications had neither the scale nor the lavishness of the 1671 volume. An elephant folio published on fine paper, it included full-page engravings of each of the animals, most of them drawn by Sébastien Leclerc, one of a stable of artists and engravers supported by the crown. The frontispiece showed an imagined visit of the king and his minister Colbert to the Academy (an actual visit took place a decade later), and the title page listed no author but displayed a royal symbol with a crown and fleurs-de-lis (figure 1). Many of the copies were bound in red morocco with a similar symbol and additional decoration in gold. Obviously, this was not merely a utilitarian work of natural philosophy but a presentation volume, and

Figure 1. Title page, Mémoires pour servir à l'histoire naturelle des animaux, 1671. (Courtesy of The Bancroft Library, University of California, Berkeley.)
copies were given away as royal gifts to selected individuals. A second volume, published five years later, included the contents of the 1671 volume and added the descriptions of 16 more species. The natural history programme continued through the 1680s, with plans to publish a third volume. This volume never appeared, although materials from it were included in the 1733 edition. This is the edition that Buffon knew and referred to in compiling *Histoire naturelle*. This essay addresses two questions: why was *Histoire des animaux* re-edited rather than simply reprinted, and how did Buffon use it?

**Publication Policies**

The sudden death of Claude Perrault in October 1688, the result of an infection contracted while dissecting a camel, had a drastic impact on the Paris Academy of Sciences. The anatomical programmes, which he had led since the Academy’s founding more than 20 years earlier, at first continued without missing a beat: at the Academy’s meetings in November the anatomists Joseph-Guichard Duverney and Jean Méry discussed their observations on the dissection of an ostrich. But the dissection and description of exotic animals continued only for a short time, and nothing was published on these activities after Perrault’s death. In particular, the projected third volume of *Histoire des animaux*, which would have completed the most important of the Academy’s publication projects thus far, never appeared.

Perrault had initiated the *Histoire des animaux* project. The initial pamphlet in 1667 was the Academy’s second publication, after a pamphlet by Christiaan Huygens. Unlike the Royal Society, the Academy had no journal of its own. But by the late 1660s *Journal des scévans*, a journal of letters and science founded in 1665, was edited by Jean Gallois, the second secretary of the Academy. Although the Academy agreed that any discovery it made could be published in *Journal des scévans*, it had to be presented to its membership first. Their policy of consensus—that all members had to agree on publication—meant that controversial experiments such as those on blood transfusion remained unpublished, even though Gallois enthusiastically supported the practice and published accounts from other authors. In addition, the publication of the journal became increasingly irregular by the late 1660s and did not revive until Gallois relinquished the editorship in 1675. The Academy’s emphasis on consensus and collaboration also meant that individual credit would be granted only sparingly. Claude Perrault appeared on the title page as ‘compiler’ of the 1676 *Histoire des animaux*, but the work was presented as—and indeed was—a collaboration. The Academy as a whole approved of its descriptions (which were written mainly by Perrault and Duverney) and illustrations.

Thus, although the work of individual academicians appeared in journals such as *Philosophical Transactions* and after 1675 in *Journal des scévans*, nearly all of the Academy’s collective work in the 1670s appeared in presentation volumes such as *Histoire des animaux* that, following the policy of Louis XIV’s minister Colbert, served to promote royal prestige as well as the pursuit of knowledge. Several similar volumes appeared between 1671 and 1676, all but one of them oversized elephant folios. These included Jean Picard’s *Mesure de la terre* on the circumference of the Earth, published in 1671 and often bound with *Histoire des animaux*, and the 1676 *Mémoires pour servir à l’histoire des plantes*, reissued in 1679. Another even larger folio from 1676, *Recueil des plusieurs traités de mathématique*, collected several shorter works by academicians. In addition, a
description of Christian Huygens’s pendulum clock, *Horologium oscillatorium*, appeared as an ordinary folio in 1673. Claude Perrault’s 1673 translation and abridgement of the 10 books on architecture of the Roman Vitruvius may also be seen as part of this group, because it carried the same royal emblem on the title page and followed a similar format. All of these books were illustrated with detailed, full-page engravings by Leclerc and other well-known artists.

Such volumes were beautiful and valuable, and they displayed the best of the Academy’s work. But they were also expensive (if they were sold at all; mostly they were given away to important patrons) and difficult to obtain; Alexander Pitfeild, who translated *Histoire des animaux* into English in 1687, complained that ‘so Magnificently [were they] set forth . . . not to be designed for common sale . . . they became presents only from the King, or the Academy, to persons of the greatest quality, and were hereby rendered unattainable by the ordinary Methods for other Books.’ 

The Academy’s reorganization in 1699 and Fontenelle’s appointment as secretary codified what had been implicit, that the Academy participated in the Republic of Letters, and that publication was therefore at its centre. The facade of anonymity that had been crumbling since the 1670s was abandoned and replaced with signed articles in the * Mémoires* of the Academy, an annual publication edited by Fontenelle. The first of these, the volume for 1699, appeared in 1702 and they appeared yearly thereafter, with a time lag that varied from one to seven years. The 1699 reorganization gave the Academy the right to print the works of its members without previously obtaining the approval of the royal censors, taking the role of censor onto itself. Any work read at its meetings and unanimously approved by its members could be published without further approval. It also named an official printer, although academicians could publish their work with anyone without additional censorship.

**The reprinting project**

A brief note signed by Fontenelle at the front of the first volume of the *Histoire* of the Academy indicated that its members decided in August 1727 to reprint its pre-1699 works in a uniform format. The 11 volumes (in 13 parts) that constituted this project appeared between 1729 and 1734 and included *Mémoires pour servir à l’histoire naturelle des animaux*. They were not printed in order; volume 1, which included Fontenelle’s history of the Academy, only appeared in 1733, and *Histoire des animaux*, labelled volume 3, appeared in three parts in 1733 and 1734. The ‘Avertissement’ for volume 1 gave an additional motivation for the project, an unauthorized Dutch edition of the Academy’s earlier works. This quarto edition, published in The Hague in 1731, was edited by Willem ’s Gravesande and Bernhard Siegfried Albinus. The 1727 decision, however, already had ample political motivation in establishing the priority of France in the new science and in presenting Fontenelle’s history of the Academy that characterized it as a Baconian, empirical body much like the Royal Society.

However, the Dutch competition indicated the importance of *Histoire des animaux* relative to the Academy’s other publications. The first two volumes of the Dutch edition
consisted of *Histoire des animaux* (both 1671 and 1676 editions), with new engravings based on the originals but with the text unchanged. Fontenelle’s 1733 ‘Avertissement’ in turn took particular notice of *Histoire des animaux*, claiming that the new edition that was about to appear was ‘quite different’ from the Dutch one, containing many corrections, new plates and additional descriptions.

Led by Perrault, the *Histoire des animaux* project had continued for more than a decade after the publication of the second volume in 1676. Academicians continued to dissect and describe animals that died in the royal menageries and other exotic animals, including additional examples of animals that had already been described. The Academy’s original anatomists, Louis Gayant and Jean Pecquet, died in the early 1670s. Replacing them was Duverney, who began dissecting for the Academy in 1674 although he was not appointed a member for another two years. Perrault praised his skill in finding the ‘particularitez’ of each animal.15 Possibly the best anatomist of his generation, Duverney dissected dozens of animals, including an elephant and two tigers in 1681. He and Perrault diligently prepared sketches and descriptions that they presented to the rest of the Academy for approval. Artists, including Leclerc, prepared the engravings for the Imprimerie du roi, the royal printing house, conveniently next door to the Academy’s rooms in the Bibliothèque du roi, the King’s Library, following protocols that Colbert had set out in 1670. Perrault and Duverney revised the earlier descriptions on copies of the proof sheets, and many of the new engravings were printed. Even with increasingly straitened circumstances of the Academy in the 1680s and a new regime after Colbert’s death in 1683, it seemed that the third volume of *Histoire des animaux* would go forward, although perhaps not in quite the same grand style as the first two. The list of ‘books about to be printed’ prepared for the visit of the king to the Academy in December 1681 included a volume on the natural history of animals and a separate description of the elephant that had been dissected at Versailles earlier that year.16

But these publications had not yet appeared seven years later when Perrault died. No further progress was made on publication, although some additional drawings and engravings were made in 1695.17 The dissection of exotic animals also ended, although other dissections continued. Duverney took over the documents for the publication project, and for a while he seemed to be eager to carry it forward. A re-edited volume, an ordinary folio, appeared around 1688 with some of the rewritten descriptions and some new engravings, but it was incomplete.18 Even the appearance of a pirated version in 1700, attributed to ‘Charles Perrault’ rather than Claude, failed to move Duverney forward on the publication of the remaining descriptions.19 For more than 40 years he held the engravings and proof sheets. His son later attributed Duverney’s failure to publish this or indeed very much of his own research to his extreme punctiliousness: ‘never was he fully satisfied with a topic’, and his scribbled-over manuscripts are evidence of repeated revising.20 Fontenelle and the Academy’s president, Bignon, seem to have persuaded the old man in the late 1720s to give up his manuscripts for the republication project, but that had not yet happened when he died in September 1730. By November the Academy leapt into action, appointing a committee to look at the papers Duverney had left and to compare them with the existing editions. The committee consisted of three anatomists: a physician, Jacques-Benigne Winslow, and two surgeons, Jean-Louis Petit and Sauveur-François Morand.

Winsløw and Petit edited the new version of *Histoire des animaux*, published in 1733–34.21 The new edition had several changes. Apart from the new text that Perrault had left at his death in 1688, Winsløw and Petit also added descriptions contemporary with *Histoire des animaux* that had not been part of the original project. These included a
1669 study of a viper by Moises Charas as well as descriptions of several exotic animals sent to the Academy in the 1680s by Jesuit missionaries in China. Winsløw and Petit also subtly updated the original text, not only adding descriptions and updates from Perrault’s papers but also judiciously modernizing it. So the description of the bear, for example (originally written in 1668), omitted a passage that cited Galen on the resemblance of the bear to humans; and numerous other additions, omissions and rewritings can be found throughout the text. But they are only evident if the editions are compared side by side.

Such updating did not occur with the other texts republished between 1729 and 1734, the purpose of which was simply to provide a record of the Academy’s early scientific activity. Winsløw and Petit had two additional reasons to re-edit Histoire des animaux apart from commemoration. By incorporating Perrault’s additions and corrections as well as new descriptions, they completed the work of one of the most illustrious early academicians. With their subtle updating and reordering, Winslow and Petit demonstrated the continued value of the work that the Dutch edition also acknowledged while retaining the Academy’s priority and prescience in publishing the work a half century earlier.

Histoire des animaux, classification, and the concept of species

Histoire des animaux was both a late example of the encyclopaedic natural history so beloved of the Renaissance and the beginning of something new, a truly comparative anatomy. Not only did it include accounts of animals that had not been treated in earlier works such as those of Konrad Gessner and Ulisse Aldrovandi, but it also focused specifically on anatomy while not omitting the natural history description of earlier works. Its illustrations depicted each animal as it was in life alongside its dissected parts (figure 2). The descriptions often began with lengthy consideration of the proper name for the animal and its corresponding names in both ancient and more recent works of natural history. Such etymological discussions would not have been out of place in Gessner. Perrault and his colleagues then moved on not only to questions of provenance, habitat, behaviour and morphology. They offered in addition detailed accounts of dissections alongside comparisons with other animals—similar and dissimilar, wild and domesticated, native and foreign—as well as of various points of physiology, particularly respiration and digestion, and of the structure of the eye.

The philosophical point of view was mechanistic but not Cartesian, following Perrault’s philosophy as outlined in his Essais de physique (1680–88). Perrault believed the body was a mechanism that acted according to the laws of physics as established by Galileo, but he also believed that animals had a self-moving soul and gave them more agency than Descartes had. In this he followed his fellow Academician Marin Cureau de la Chambre, who had written about the animal soul in several works in the 1640s and 1650s.22 In the preface, Perrault characterized himself and the Academy as mere observers who held up a mirror to nature. They did not yet have sufficient information, he said, to make conclusions or discern causes.23 Like the Academy as a whole, he disdained the system-building of Descartes in favour of a more modest epistemology grounded in observation.

The order of presentation in Histoire des animaux did not attempt to classify. With a few exceptions, such as placing the porcupine and hedgehog together, the compilers of the work did not group similar animals together or arrange them according to any classificatory scheme. In fact, the article on the porcupine and hedgehog emphasized how unlike they were. In contrast, the placement together of the Sardinian and Canadian deer and Old
World and New World monkeys acknowledged their similarities. Although the book as a whole seemed to follow no order, its organization was not entirely random. In general, as Winslow and Petit believed, it followed the order in which the animals had come to the Academy from the royal menageries, but symbolic value had to do with the lion being placed first and the popular and mysterious chameleon second.24 The lion had not in fact been dissected first, but its position in the volume directly followed Perrault’s comparison of Louis XIV to Alexander the Great in his preface. Both Alexander and Louis employed the lion as a symbol, and at precisely this time the court painter Charles LeBrun painted his series on the life of Alexander.25
Perrault and his colleagues refused any further classification and indeed disputed the idea of specific similarities. Trained as a physician in the Galenic Paris Faculty of Medicine, Perrault saw diseases as specific to an individual, and tended to see animals too as radically individual rather than as part of a larger group or category. The academicians treated each animal they encountered as an individual, and as more examples of an animal came to the Academy’s dissecting table, they accordingly revised their descriptions. So the single lion dissected and described in the 1667 pamphlet had become three by 1671, four in 1676 and seven in 1733, each with a separate description, although some of them simply noted the similarities or dissimilarities to the earlier examples. In the ‘Avertissement’ that he added to the 1676 edition, Perrault noted that as more individuals of the same type became available, their descriptions were rewritten because ‘it is important to note as much as possible the differences and the similarities that one often encounters in animals of the same species’.26

Perrault, like his contemporaries, used the term ‘species’ (‘espèce’) not as a biological term but as a logical one, a means of organizing knowledge. Thomas Aquinas had written that ‘in natural things the shape is the sign of species’, and external morphology was the main distinguishing characteristic among natural types for Perrault and the Academy.27 However, it was not the only one. The ancients had noted the differing sizes of the porcupine and the hedgehog but had concluded that they were essentially the same. Perrault disagreed: their bodies differed not only in size but also in shape; their spiny protuberances were quite different in length and quality; and the animals originated in widely different places.28 All of these characteristics made these animals distinct species. Yet the extent to which Perrault was caught between humanist etymology and modern empiricism is evident in his straining to reconcile the ancient beast known as the alcé with the modern elk, despite considerable differences in their descriptions.29

Perrault’s account of the coati from 1671 gives a good example of the Academy’s methods and the academicians’ reluctance to classify. ‘The Coati is an Animal of Brazile, which is variously described by Naturalists; and their Descriptions do not exactly agree with what we have observed in ours: which may cause a belief that there are several Species.’30 He noted discrepancies between the descriptions by others such as Johannes de Laet and the naturalist Georg Marcgraf as well as between their descriptions and the Academy’s observations of live and dead specimens. In particular, several artists’ depictions of the animals in situ at Versailles diverged from earlier descriptions, particularly in the length and shape of the snout, which Marcgraf and the sixteenth-century explorer Jean de Léry had compared to the trunk of an elephant. Nonetheless, there was enough in common among the descriptions and images to assert that the specimens in the King’s Library were indeed coatis. Following Marcgraf, Perrault further distinguished on the basis of coloration between a coati and a coati mundi.31

Confronted with such variety, Perrault and the academicians did not feel they could classify beyond the most basic types. New observations could always arise that could cast doubt on any agreed-upon certainties. Winsløw and Petit added material to Perrault’s preface that underlined this policy of particularity and lack of generalization: ‘If it sometimes happens that we establish general maxims . . . one must understand that we reserve to ourselves to add to them exceptions and restrictions that new observations can provide when they present themselves, so that they can serve those who would make up the General History, for which these Memoires are drawn up.’32 The ‘General History’, in other words, had yet to be written.
BUFFON AND THE KING’S GARDEN

At about the time these words were written in the early 1730s, a young man from Burgundy came to Paris and began to frequent its many salons devoted to natural philosophy. Two institutions tie Buffon and Histoire des animaux together. One was the Paris Academy. The 26-year-old Georges-Louis Leclerc de Buffon of Montbard near Dijon, whose family had purchased the village of Buffon a little more than a decade earlier, was appointed adjoint-mécanicien to the Academy in January 1734. Like Perrault, Buffon was a bourgeois whose family had worked assiduously on its advancement. At this time, the Academy still kept its division between what had been known as mathématique, including mathematics, mechanics and the physical sciences, and physique, encompassing the non-mathematical sciences including chemistry and the sciences of life. Buffon worked on both topics during the 1730s, but by the end of the decade the balance tipped towards the life sciences and he transferred to the physique side as adjoint botaniste in the spring of 1739. That summer he was appointed intendant, or director, of the Jardin du roi, the royal botanical garden in Paris.33

The Garden provided the second institutional tie to Histoire des animaux. Founded in the 1630s, the Garden from its outset hosted lectures in chemistry and botany, and later anatomy. In 1682, Duverney became the professor of anatomy at the Garden, and many of the dissecting activities of the Paris Academy moved there. Before that time, dissection and vivisection had been performed in the Academy’s rooms at the King’s Library (not ideal for anyone else who worked there) or at the homes of its members. Although some dissection continued at the Academy, what became standard practice was described in the Academy’s minutes early in 1682. The secretary announced the arrival of several birds (presumably dead) from Versailles, including a parrot named ‘Arras’. Claude-Antoine Couplet, who commonly acquired less exotic animals for the Academy’s experiments, was instructed to bring them across the Seine to the Garden after the Academy had examined them and compiled descriptions of their external appearance.34

The intendant of the Garden had traditionally been the first physician of the king.35 Louis XIV’s physician, Guy-Crescent Fagon, had been succeeded by Pierre Chirac, academician and physician to the regent, the Duc d’Orléans. But when he died in 1730, his successor was not a physician but a fellow academician, Charles DuFay, whose interests were mainly in physics. DuFay’s untimely death in 1739 provided Buffon with an opening and, pulling in numerous favours, he managed to be named the new intendant. The Garden had been gradually losing its medical identity: the Cabinet of Drugs became the Cabinet of Natural History in 1729, and many of its animal specimens, ranging from pieces of skins to full skeletons, dated from the Histoire des animaux projects. The well-attended lectures on human and animal anatomy that Duverney had given for 40 years continued, first with his son Emmanuel-Maurice and then with François-Joseph Hunauld. With Buffon, however, the transition from a physic garden to a natural history museum moved towards completion.

The republication of Histoire des animaux occurred just as Buffon entered the Academy. Around this time the young Louis-Jean-Marie Daubenton, also from Montbard, began to attend Hunauld’s anatomy lectures at the Garden rather than theology lectures at the Sorbonne. He completed his medical training in 1741, and Buffon soon summoned him from Montbard to work with him at the Garden. By 1745 he had been named to the Paris Academy and gained an official title as garde et démonstrateur of the natural history collections, signalling a separation between human and animal anatomy. Buffon appointed
Winsløw to the post of anatomy professor at the Garden after Hunauld’s death in 1742. The instigation for *Histoire naturelle* was the desire of the government minister and Buffon’s patron Jean-Frédéric Phélypeaux de Maurepas for an inventory of the Royal Cabinet, which occupied several rooms at the Garden. Daubenton dissected and provided the anatomical descriptions of the animals in volumes 3–15, which covered quadrupeds. There are parallels but also important differences between the respective roles of Buffon and Daubenton in comparison with those of Perrault and Duverney. Perrault also dissected and Buffon, as far as I know, did not; Duverney practised and taught human anatomy, whereas Daubenton confined his work at the Garden to animals.  

**Histoire naturelle and Histoire des animaux**

Was this the ‘General History’ that Winsløw and Petit called for? Buffon seemed to think so, titling his work *Histoire naturelle, générale et particulière*. Unlike Perrault, he intended to write an encyclopaedic natural history of everything in the world. Like *Histoire des animaux*, Buffon’s title page named no author, filling that space with a large royal symbol (figure 3). His introduction to the first volume was ‘De la manière d’étudier & de traiter l’Histoire naturelle’ (‘How to study and treat natural history’). Jacques Roger has compared it to Descartes’s *Discourse on method* as a manifesto of a new method. But it resembles even more Claude Perrault’s preface to the 1671 *Histoire des animaux*. Buffon omitted the homage (which rapidly turned into a critique) of the ancients with which Perrault, still fighting the battles of the new science, had begun. However, they shared the same preoccupations: how can we know nature? How do we get from particulars to generalizations? What are the relative roles of reason and observation? Both emphasized the role of observation: ‘One ought to begin by seeing much and re-seeing often’, wrote Buffon. Both urged the consultation of other authors on the subject, but only after making one’s own detailed observations. And both warned against finding an order in Nature that might be more in the mind of the human observer than in Nature itself.

Perrault commented, ‘our chief Aim [is] to report’. From the point of view of the early Academy, there was so much that was unknown, particularly about the internal parts of animals, and so much myth to disprove. He and the Academy would admit no fact they had not seen themselves; as we have seen, this empirical, particularist approach made generalization difficult, if not impossible.

Buffon expressed a similar epistemological modesty: ‘all that is possible for us, is to perceive some particular effects, to compare them, to combine them, and at last, to recognize an order relative to our own nature.’ ‘One sees clearly’, he added, ‘that it is impossible to give a general system.’ Like Perrault, Buffon claimed that the ultimate object of his study was the human, and they frequently compared animal and human structures. But both believed that the natural history of animals was valuable in itself and compared animals to each other more than to the human. In volume 4 Buffon introduced his volumes on individual animals with a lengthy ‘Discourse on the nature of animals’ that included a section by Daubenton on their description. Much like Perrault, Buffon and Daubenton emphasized the value of observation and description as the basis of natural history—uncontroversial statements, to be sure—but Daubenton also asserted that ‘there are neither principles nor rules to guide the observer’. However, there should be clear principles guiding the description of animals, and primary among these must be rules of naming.
Historians have characterized Buffon’s diatribe against arbitrary systems of naming as his response to Linnaeus. But Buffon and Daubenton also reached back to Perrault’s statements on this topic. Working within a humanist tradition of natural history, Perrault complained of the difficulty of ascertaining whether animals named and described by the ancients were the same animals with those names in his time. He concluded that in many cases the ancient descriptions were too inexact to make such a judgement, so that
his goal was therefore simply to provide a very exact description. Daubenton wrote on the same topic, ‘it is thus absolutely necessary to establish the principles and rules that are exactly followed in all the descriptions, and to propose a method of description in place of methods of nomenclature, which has occupied up to now the majority of naturalists.’

Many of the descriptions in *Histoire des animaux* began by considering the various names of the creature. For example, Perrault spent some time discussing whether an animal in question was a camel or a dromedary, citing numerous observations of other authors as well as his own interview of an Arab ambassador. On the basis of information he gained from the latter, he decided it was a dromedary, defining the dromedary as the variety with one hump, although there was much confusion about this. By 1733, one of each variety had been described, although Winsløw and Petit’s chapter title confusingly referred to both as ‘camels’ and only clarified this further in the text. Buffon and Daubenton spent even more time on the proper name, going back to Perrault’s definition of one-hump dromedary and two-hump camel. Buffon then went on to distinguish several varieties of each according to geographic area. The dromedary skeleton that resided in the Cabinet du roi was, he thought, the specimen described by Perrault. But Buffon here referred to the 1733 description of it as a camel rather than the original designation of dromedary, indicating that he worked from this edition rather than the earlier ones.

Buffon claimed in the early volumes of *Histoire naturelle* that species were artificial constructs and that we could have knowledge only of individuals, not of any larger classificatory entity. But by the early 1750s, when the animal volumes began to appear,
this stance was already changing. The ‘Discours sur la nature des animaux’ and Daubenton’s essays on ‘Description’ and ‘Distribution’, all in volume 4 (published in 1753), set forth a system of organization for the animal volumes, something that Perrault had never done. They divided quadrupeds first into domestic and wild, then into local and exotic, with further divisions according to teeth and other criteria. So volume 4 began with the horse, the ass and the cow, and volume 5 covered sheep, goats, pigs and dogs. Volumes 6–8 described common wild animals including carnivores such as the wolf and the badger and others
such as bats, hares and hedgehogs. Of these, only the hedgehog had appeared in *Histoire des animaux*, as a foil to the porcupine. Only at the end of volume 8 (1760) do exotic animals begin to appear. Buffon’s natural history was therefore more general than Perrault’s in two ways: in the number and variety of animals described (not dependent on chance arrivals from the royal menageries) and in establishing a system of organization that Perrault’s work entirely lacked.

Buffon, like Perrault, often began his accounts with a discussion of the animal’s name. Among the first of the exotic animals was the coati and the coati mundi, and Buffon’s discussion of its name drew heavily from Perrault’s. Both cited Marcgraf; Buffon cited André Thevet, another sixteenth-century traveller, whose journey to Brazil antedated that of Jean de Léry. On the difference between the coati and the coati mundi, Buffon cited Marcgraf via Perrault. However, Buffon omitted the discussion of the size and shape of the coati’s muzzle. Whereas Perrault and the Academy had measured every animal that they examined, Buffon and Daubenton went much farther, measuring every possible animal part, internal and external.48

Buffon’s and Daubenton’s borrowings and references to *Histoire des animaux* occur throughout *Histoire naturelle*; on the elephant, for example, Buffon noted, ‘I have taken from that work [*Histoire des animaux*] the facts that can enter into my plan of description’, and Buffon and Daubenton’s description of the elephant constantly engaged with Perrault’s work (figure 4).49 Several of the specimens and skeletons from the *Histoire des animaux* project were depicted in *Histoire naturelle*, including the skeletons of the dromedary and the elephant (figures 5 and 6).
CONCLUSION

The re-editing of *Histoire des animaux* by Winsløw and Petit acknowledged the continuing value of the work. No other work of its scale or depth had appeared since the 1670s. It continued to be reprinted, with another issue of the Dutch edition in 1736, and a further reprint of the 1733 Paris edition in Leipzig in 1758, as well as a German translation. As Jeff Loveland has suggested, Buffon’s decision to include anatomy in *Histoire naturelle* and therefore to bring Daubenton into the project was certainly inspired and informed by *Histoire des animaux.*

The ‘General History’ of animals of Buffon and Daubenton may be seen as an extension and even a completion of the *Histoire des animaux* project. The legacy of Perrault’s era and *Histoire des animaux* permeates *Histoire naturelle* to an extent that has not hitherto been recognized, highlighting the historical place of *Histoire des animaux* between the Renaissance and the Enlightenment. Perrault and the Academy believed they looked forwards and not back, and writing 70 years after their last volume came from the press, Buffon apparently agreed with them.

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NOTES

1. [Claude Perrault (ed.)], *Mémoires pour servir à l'histoire naturelle des animaux* (Imprimerie royale, Paris, 1671).
2. *Extrait d'une lettre écrite à Monsieur de La Chambre, qui contient les observations qui ont esté faites sur un grand poisson disséqué dans la Bibliothèque du Roy, le 24e juin 1667. Observations qui ont esté faites sur un lion disséqué dans la Bibliothèque du Roy, le 28e juin 1667, tirées d'une lettre écrite à M. de La Chambre* (Paris, 1667); *Description anatomique d’un cameleon, d’un castor, d’un dromadaire, d’un ours, et d’un gazelle* (Frédéric Léonard, Paris, 1669).
7. Perrault, *op. cit.* (note 1), preface, not paginated.
8. The articles from *Journal des sc̜avans* between 1666 and 1699 were collected in *Mémoires de mathematique et de physique, par messieurs de l’Academie royale des sciences. Extraits des


10 Description anatomique de divers animaux dissequez dans l’Academie Royale des Sciences, 2nd edn (Laurent d’Houry, Paris, 1682).


17 MS 220, Muséum nationale d’histoire naturelle, Paris.

18 This is my explanation of the volume dated 1688 in the library of the Institut de France. It is an ordinary folio, rather than the elephant folio of the earlier editions, which conforms to Winsløw and Petit’s description. It has no title page, and the illustrations are not placed with the proper descriptions. However, it includes both new text and new illustrations, such as that of the pangolin. It ends with the coq-indien, as Winslow and Petit describe.


21 Francis Cole pointed out that some of the copies were dated as early as 1731: F. J. Cole, A history of comparative anatomy (1949; reprinted in 1975 by Dover, New York), p. 399.

22 For further discussion see Anita Guerrini, The courtiers’ anatomists: animals and humans in Louis XIV’s Paris, chs 3 and 4 (in the press).
23 Perrault, *op. cit.* (note 1), preface, not paginated. The preface is identical in 1671 and 1676, but the 1733 version differs in minor respects.


30 Perrault, *op. cit.* (note 1), p. 89.


33 PV, vol. 10, f. 87r (7 January 1682).

