The strongest kind of competition: expanding zoology at Chicago's Field Columbian Museum, 1894-1895

La forme de compétition la plus forte : l'expansion de la zoologie au Field Columbian Museum de Chicago, 1894-1895

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KEY-WORDS

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Summary : Chicago philanthropists founded the Field Columbian Museum, in 1893, in the aftermath of the World's Columbian Exposition. One important aspect of the new museum's mandate was zoology. Two separate departments were established at the museum, one called Ornithology and the other called Zoology (except Ornithology). The museum purchased two large private collections – one from Ward's Natural Science Establishment and the other from ornithologist Charles B. Cory – both to populate its exhibit halls and to serve as the nucleus of a research collection for both departments. In the first two years of the museum's existence, however, the zoological departments struggled to acquire representative collections, to create credible exhibits and to hire and retain a prominent scientific staff. This paper chronicles some of the first years of the museum's history, when its zoological departments were first getting established before gearing up for a rapid expansion.

MOTS-CLÉS

Frederick J. V. Skiff
Daniel G. Elliot
Charles B. Cory
19e siècle
Exposition internationale de 1893

Résumé : Des philanthropes de Chicago ont fondé le Field Columbian Museum, en 1893, à la suite de l'Exposition internationale de 1893. Un aspect important de la mission du nouveau musée était la zoologie. Deux départements ont été établis au musée, l'un appelé ornithologie et l'autre appelé zoologie (sauf ornithologie). Le musée a acheté deux grandes collections privées – l'une au Ward's Natural Science Establishment et l'autre à l'ornithologue Charles B. Cory – pour remplir ses salles d'exposition et servir de noyau à une collection de recherche pour les deux départements. Au cours des deux premières années d'existence du musée, les départements zoologiques se sont efforcés d'acquérir des collections représentatives, de créer des expositions crédibles et d'embaucher et de maintenir un personnel scientifique éminent. Cet article relate les toutes premières années de l'histoire du musée, au moment où ses départements zoologiques ont été créés et avant leur rapide expansion.

Introduction

From opening day – on 2 June 1894 – the Field Columbian Museum (**Fig. 1**) presented to the public the appearance of completeness and comprehensiveness. [1] Regarding its zoological exhibits, the museum achieved this apparent distinction by making two strategic purchases, the Charles B. Cory collection of birds and the Ward's Natural Science Establishment exhibit, which had been prominently displayed at the World's Columbian Exposition in 1893 (Brinkman forthcoming). The first edition of the museum's *General guide* stated that the "*collections of the Department of Zoology are very extensive, covering fully this field of science from*Protozoa *to man*" (Anonymous, 1894: 103). Privately, however, the museum acknowledged that the zoological collections "*in extent and character of material did not at the beginning rank with the other Departments*" (Field Columbian Museum, 1896: 99). [2] Consequently, for the first few years of its existence, the museum devoted the lion's share of its limited financial resources to developing and expanding its zoology and ornithology departments. Curator of

1. This is the second part of a longer paper, the first part of which appeared in the *Journal of the History of Collections*. See Brinkman (2018). Together, these papers comprise the first chapter of a book (Brinkman forthcoming).

2. For more on the founding and early history of the Field Columbian Museum, see Brinkman (2009).

Ornithology, Charles B. Cory (**Fig. 2**), and especially Curator of Zoology (except Ornithology), Daniel G. Elliot (**Fig. 3**), benefitted from the museum's liberal attitude toward zoology in the long term, but both would first have to weather a very lean 1895.

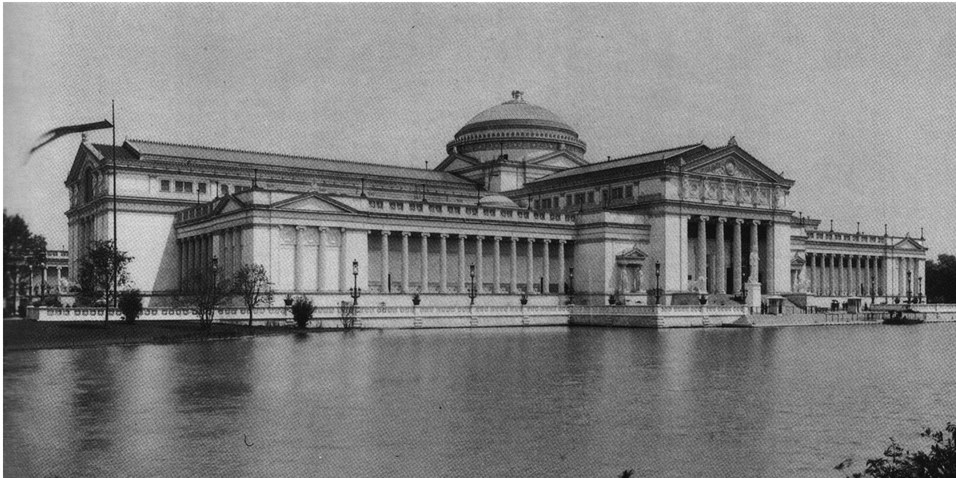

Fig. 1. An exterior view of the former Palace of Fine Arts from the early twentieth century, when the building was the temporary home of the Field Columbian Museum. Courtesy, The Field Museum. CSGN21029.

Fig. 2. Portrait of the Curator of Ornithology, Charles Barney Cory. Courtesy, The Field Museum. CSZ44704.

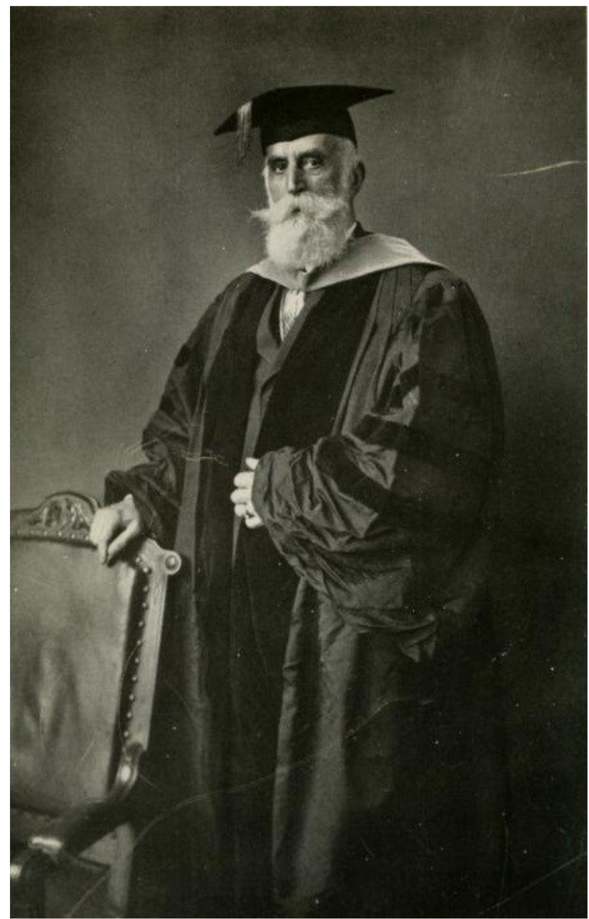

Fig. 3. Portrait of the Curator of Zoology, Daniel Giraud Elliot. Courtesy, The Field Museum. GN79347.

Plans for expansion

At an executive committee meeting held on 19 December 1894, Museum Director Frederick J. V. Skiff had been asked to collect information, on behalf of the committee, "*touching the necessary and problematical expenses for conducting and expanding the Institution during the year 1895.*" Museum patrons, it seems, after nearly a year of toil to get the museum ready for opening day, were dreaming of expansion. Indeed, Skiff knew this request was predicated "*upon the theory that it is the mission of the Museum to grow, and the policy of the Executive Committee that it should grow surely, strongly, and* [...] *while not detracting in any way from the popularity of the Museum, maintain it upon the strictest scientific principles.*" Skiff passed this mandate down the chain of command, asking each of the curators to convey to him their "*wishes and hopes*" respecting the future activities of their departments. [3]

This was one of Elliot's first and most important tasks in his new position as Curator of the Department of Zoology (except Ornithology). After tentatively accepting the museum's offer in the summer of 1894, Elliot had remained in New York City for several months, visiting Chicago on at least one occasion to confer with Skiff. He only relocated permanently in early December. Together, he and Skiff crafted a plan to reserve a room for a departmental office (possibly in Hall 21 – see **Fig. 4**), wherein a partition would create work space for both Elliot and his new Assistant Curator, Oliver Perry Hay "*away from interruptions of strangers.*"

3. Letter, F. J. V. Skiff to H. N. Higinbotham, 29 January 1895, FMA. .

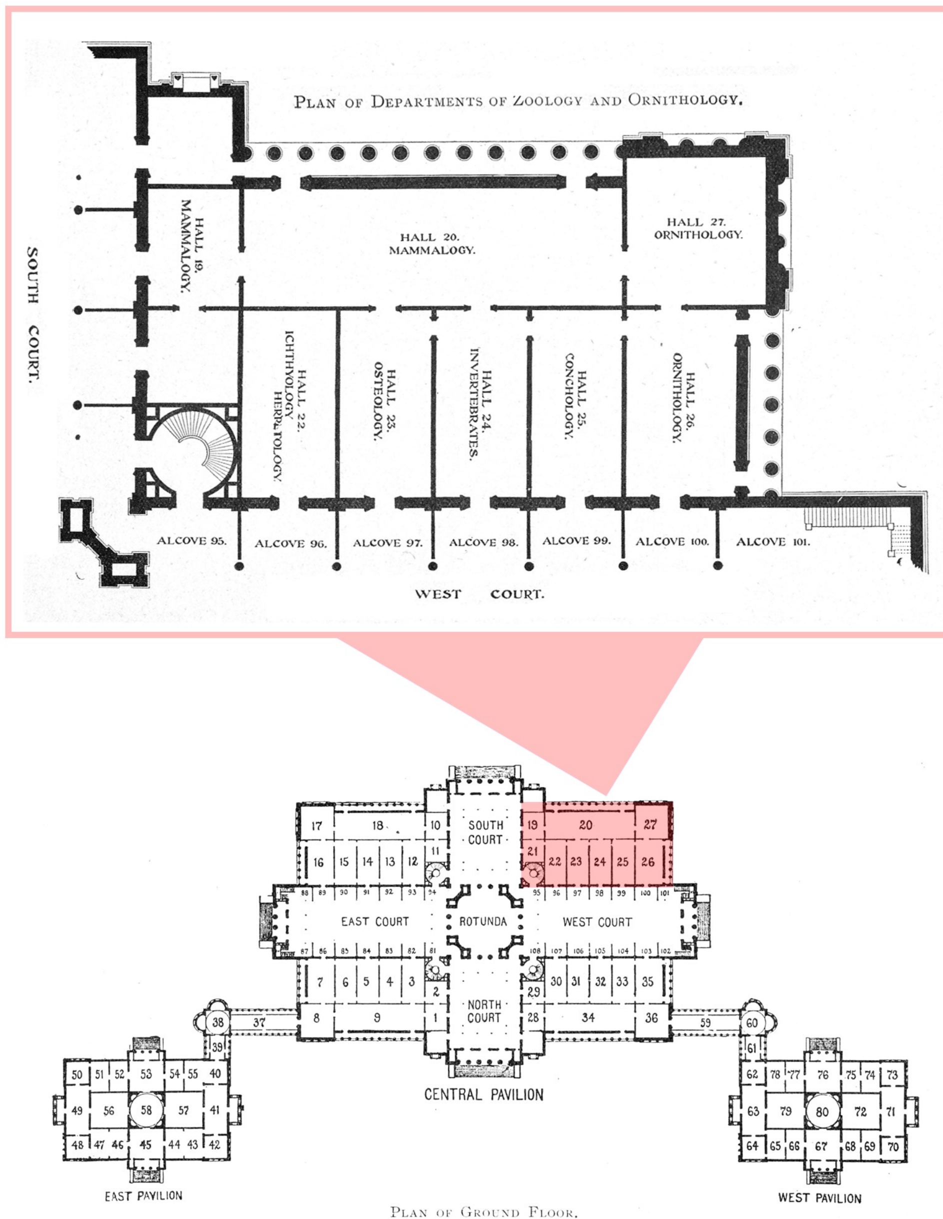

Fig. 4. Floor plan of the Field Columbian Museum showing the arrangement of the museum's zoology and ornithology exhibit halls in 1894. Adapted from figures in Anonymous (1894a) by Haley McCay.

Elliot noticed a radiator, newly installed in a corner of the hall and badly in need of a coat of paint, which he knew would be "*doubtless* [...] *an important adjunct to our comfort this winter*." [4] Because Elliot's office space was not quite ready for occupancy by the time he relocated to Chicago, he settled himself temporarily in a far better-appointed hall two doors down that served (occasionally) as the executive committee meeting room, where he could work in relative comfort. "[*I*]*t will take a good sized force pump to get me out*," he wrote to his former New York colleague, the zoologist Joel A. Allen. [5] This was the working space from which he planned the future of zoology at the Field Columbian Museum.

In reply to Skiff's solicitation, Elliot penned a lengthy and thorough report concerning his department. Because it served as a blueprint for the development of this department over the next several years, it is worth examining the letter at length. Perhaps surprisingly, Elliot's first concern was the question of exhibit cases, "*what kind is the most suitable, economical as to the distribution of space and ability for the exhibition of specimens, and advantageous for the Museum*[*?*]" He was opposed to wall cases, because they were "*very wasteful of space*," and "*can never be properly lighted, and do not exhibit their contents to advantage*." He provided a diagram for the style of case he advocated. These cases would "*stand out from the wall, in the shape of a T lying on its side, & are lighted from a window on each side, &, above the ground floor, by a narrow one in the back*." The advantages of this style of case were several, Elliot argued. First, it could readily accommodate the largest animals, and both Elliot and the museum were committed to acquiring and displaying an abundance of large, charismatic mammals. Second, museum visitors could walk all the way around it, viewing the specimens inside from every angle, and thus exhibiting them to the best possible advantage. Because the museum lacked windows and was lighted entirely by skylights and dim, overhead electric bulbs, the tops of any new cases would have to be made of glass. [6]

Perhaps suspecting that this issue would be seen as something rather trivial, Elliot stressed its critical importance: "*The composition of cases is one of the most important questions that the Ex*[ecutive]*Committee can be called upon to decide*," he wrote. "*There is no use accumulating valuable material if it is to be placed in a receptacle that does not preserve it*." In a museum, he argued, "*the greatest enemy of specimens is dust.* [...] *Dust in time will ruin every specimen, therefore all the cases should be absolutely dust proof so far as human skill and ingenuity can make them*." Cheaply, carelessly made cases, would be worse than no cases at all, he argued, and "*should never be placed in any Museum possessing valuable materials*." He closed this part of his letter with a strong rebuke tempered by a back-handed apology:

"*I do not suppose it is at all necessary for me to call attention to the fact, which no doubt is well known to the gentlemen of the Committee, that there is not a case in my Department that will preserve its contents for any length of time, & so long as they remain we must expect the materials in our possession to deteriorate. I have dwelt longer on this subject than I intended, but its very great importance must be my apology*." [7]

Elliot next addressed the vital issue of enlarging the department's collections. With his report, he enclosed lists of specimens from several natural history dealers. [8] One of these lists was from the well-known firm of Rowland Ward Limited of London. [9] Elliot wanted all – or nearly all – of it. Of the many specimens listed, he noted, "*with but few exceptions, there is not a single species named that is not most desirable to add to the Division of Mammalogy*." In the long term, he planned to separate the exhibit specimens from a dedicated study collection, explaining:

"*It is not my purpose, unless otherwise instructed*[,] *to develop the Zoological Department on the lines adopted in past years by the long established Museums. I do not propose to mount & place on exhibition every specimen that comes to the Museum, for a mounted specimen as a rule is of little use for scientific study*." [10]

He emphasized the importance of acquiring specimens now, while they could still be collected in the wild: "*The Antelopes of Africa are proceeding rapidly towards extinction & the day is not far distant when like our own Buffalo the majority of existing forms will disappear from the earth. The 'White Rhinoceros'* [...] *is already practically extinct. There is not a specimen in this country, & but two or three in all the Museums of the World*." The list from Rowland Ward did not include prices, so Elliot had written them for particulars. Another list of speci-

4. Elliot to Skiff, 6 October 1894, FMA. The Fine Arts Palace was not designed to be a permanent building. Thus, to adapt it for year-round use, the museum had to install electric lights and a heating plant for the dark and cold Chicago winters. Unfortunately, the heat never worked efficiently in the museum and the daytime temperatures inside the building would sometimes drop into the 50s.

5. Letter, D. G. Elliot to J. A. Allen, 14 January 1895, Mammalogy Departmental Library & Archives (hereafter, MDLA), American Museum of Natural History (hereafter, AMNH).

6. Letter, D. G. Elliot to F. J. V. Skiff, 18 December 1894, FMA.

7. Elliot to Skiff, 18 December 1894, FMA.

8. For more on the history of natural history specimen dealers in America, see Barrow (2000).

9. On Rowland Ward, see Jackson (2018).

10. Elliot to Skiff, 18 December 1894, FMA.

mens comprised a collection of "*very rare and desirable*" animals collected in the Philippine Islands. A third letter offered an assortment of preserved fishes and reptile models. "*I would like to be able to make a contract with Mr. Denton* [11] *to supply specimens to illustrate the Families, Genera, & species* [...] *of fish & reptiles,*" Elliot wrote. He then elaborated his plan with respect to the ichthyological and herpetological collections:

"*In the case of fish & reptiles a comparatively few exhibition specimens would be needed, the study collection must be alcoholic.* [...] *The specimens of fish and reptiles possessed by the Museum are of the usual type generally witnessed, shrunken, ill shaped distorted objects that misrepresent the species.*" [12]

In closing his report to Skiff, Elliot stressed that the museum's newness placed it at a competitive disadvantage relative to other, older natural history museums. "*This is the youngest Museum in the World," he emphasized, "& it has entered the field at the eleventh hour.*"

"*The time for acquiring large collections ready made, and which at one bound puts a Department at once on an equality or ahead of its rivals, has nearly if not entirely passed away. All the great collections have been absorbed by existing Museums. We have therefore to build our structure brick by brick*[,] *a slow and weary process. From an experience of more than a quarter of a century in Museums, in which at home and abroad, my life has been mainly passed, I know that we have now, if we expect to advance, to enter into the strongest kind of competition, and that nothing that is rare, especially valuable or desirable will ever be permitted to enter the walls of this Museum, if rival kindred Institutions can prevent it.*" [13]

Elliot, frustrated by the cumbersome way of doing business at the Field Columbian Museum, angled for greater freedom of action for making zoological purchases. For the museum to succeed, he argued, it must "*be prepared to take advantage of every opportunity for obtaining desirable material, and to reach a quick judicious decision that experience and familiarity with the subject will enable us to give.*" In other words, he wanted to power to make these types of decisions himself. After all, who was better qualified to evaluate zoological purchases than the zoology curator? He did not ask for any particular sum of money for his department. This, he said, was "*best left for the* [*Executive*] *Committee to decide.*" He would only say that "*be it small or great, it will be used* [...] t*o the best advantage of the Museum as my experience and judgment may guide me.*" [14]

Skiff was impressed with the thoroughness and frankness of Elliot's report, forwarding it in toto to the executive committee with his endorsement. Convinced that zoology needed to be completely overhauled, Skiff noted that "t*he most casual investigation of the real condition of the collections and individual specimens of this very important department, will convince any person that the Museum has made a very feeble and a very poor beginning in this field of science.*" He noted that the worst material acquired by the museum from Ward's Natural Science Establishment was the mammals, and that the initial installation done under Ward's contract was "*neglectful and indifferent in the extreme.*" The material was "*a poor lot to begin with and*[*Ward*] *injured it all he could in placing it in position.*" Adding insult to injury, the cases and hardware that Ward provided for exhibiting specimens were junk. Apparently, this had already been discussed "*regretfully*" by the executive committee at a previous meeting. [15]

To address the problems in his department, Skiff noted that Elliot recommended acquiring and installing new material in mammals, fishes, and reptiles, in that order of priority. Skiff agreed, thus acknowledging the critical importance of zoology to the new museum. "*If the Museum is to expend any appreciable amount of money upon any of the departments,*" he argued, "*the expenditure should be made upon Zoology and Ornithology.*"

"*When it comes, however, to considering the amount of money that should be expended in this work, one finds no basis upon which to establish a computation. As the Curator says, the department needs almost everything, and the amount that can be expended judiciously is limited only by that amount which may be appropriated for the purpose. I feel justified under the circumstances, and prefer to go on record in advocating a liberal appropriation for the Department of Zoology.*" [16]

Skiff had at least one reservation about the report, noting that Elliot neglected to address the issue of upgrading the museum's zoological exhibits, something that the executive committee was keen to have done. "*The Curator,*"

11. This is almost certainly the artist, naturalist and entrepreneur Sherman Foote Denton. See Toelstra (2016: 127-129).

12. Elliot to Skiff, 18 December 1894, FMA.

13. Elliot to Skiff, 18 December 1894, FMA.

14. Elliot to Skiff, 18 December 1894, FMA.

15. Skiff to Higinbotham, 29 January 1895, FMA. For more on the museum's contract with Ward's Natural Science Establishment, see Brinkman (2018).

16. Skiff to Higinbotham, 29 January 1895, FMA.

he wrote, "*does not give the importance I think should be given to the question of groups of familiar mammals showing their haunts and habits, and forming attractive and instructive groups throughout the department.*" A capable taxidermist, using material "*that could be easily procured,*" could certainly enhance the "*interest and instructiveness*" of the zoological exhibit halls "*by this character of arrangement,*" he suggested. Thus, it would be necessary, in Skiff's assessment, to add a skilled taxidermist and an assistant to the zoological staff. He also recommended a large budget for specimen purchases and a more modest budget for fieldwork to acquire animal specimens locally. The total appropriation Skiff recommended for Elliot's department was a whopping $16,500. [17]

Cory, meanwhile, also wrote a report to Skiff about the state of the Department of Ornithology. Because he had, as yet, spent very little time at the museum, Cory's report lacked the details provided by the other curators. Nevertheless, according to Skiff, "*the Curator hits at once the weak point in this collection, native birds, and suggests a means for strengthening the department in this particular, by advocating a liberal appropriation for field work.*" The labeling of the ornithological collections on display (**Fig. 5**) was then in a very poor state, so Cory requested an additional clerk to perform the work of properly identifying and labeling specimens. Skiff was impressed with the bird curator's plan for developing new exhibits, writing that Cory's "*advocacy of the construction of impressive groups of birds, is in direct line with the policy of the Executive Committee as informally declared.*" To execute this work, however, another skilled taxidermist would be required. Lest the executive committee should see this request as an unnecessary duplication of personnel, Skiff explained that in other correspondence Cory had insisted that such a position would be needed "*exclusively for Ornithology, and that a man to work in both Zoology and Ornithology could not be satisfactorily arranged in any way.*" [18] Cory, so it would seem, was not very good at sharing resources.

Skiff conceded that considerable money had already been spent to acquire Cory's collection. "[*B*]*ut it may be said that for the purposes of*

17. Skiff to Higinbotham, 29 January 1895, FMA. For the sake of comparison, Skiff recommended $6,000 for Anthropology, $3,500 for Geology, $2,500 for Botany, $1,500 for Economic Geology, and nothing for Industrial Arts. On the Department of Ornithology, see below.

18. Skiff to Higinbotham, 29 January 1895, FMA.

Fig. 5. Hall 26 – Ornithology, ca. 1895. Courtesy, The Field Museum. CSZ21025.

securing exhibition material, or improving or re-arranging the material with which the Museum started, nothing has so far been done since Mr. Ward placed the birds within the poor cases in which they were and are installed." Ornithology, Skiff noted further, was understaffed. Assistant Curator George K. Cherrie, who was supposed to have immediate charge of the department, had been away doing fieldwork for much of the time since he was appointed. Left unsaid was the fact that the department was run by an absentee curator. In the end, Skiff recommended a total appropriation of $5,000 for the Department of Ornithology, including funding to hire a taxidermist and a clerk, a modest appropriation for local fieldwork, and funding to purchase new bird material and to pay the cost of creating group displays. [19]

The lost year

The museum began in 1893 with the highest of expectations. Spending was profligate on new collections and on requisite upgrades to the building in the first few months of the museum's existence. However, the administration quickly came around to a new, much more conservative approach to expenditures immediately after the museum first opened to the public in June 1894. There were two reasons for caution. First, founders had underestimated the staggering cost of operating an institution like the Field Columbian Museum, and they looked for ways to augment the museum's income or to build a permanent endowment to maintain it. Second, they were reluctant to invest significantly in the maintenance of the Fine Arts Palace building when it was obvious that a new, larger, permanent structure would be needed for the museum in the long-term. This new, conservative attitude came directly from the museum's namesake, Marshall Field. In a letter dated 16 June 1894, Field explained that: "*My judgment is that we should go slow in all expenditures from this time on, at least until we know definitely where the permanent home of the Museum is to be and where the money is to come from to maintain it*" (quoted in Brinkman, 2010: 254).

This new attitude curtailed spending for the remainder of 1894. The outlook for the following year seemed better, however, as the executive committee had solicited plans from Skiff and the curators to expand the museum's scientific programs in 1895. Unfortunately, when the cost estimates for expansion came in higher than expected, the committee hesitated. In fact, they debated the issue for many months, withholding approval on recommended departmental appropriations all year, and only approving expenses in a piecemeal, opportunistic fashion. This was a frustrating time for the curators, particularly for those, like Elliot, who had chosen to come to Chicago because it had seemed like such a favorable opportunity in the first place (see Brinkman, 2018). Despite a very promising start, 1895 became a lost year, which was characterized by a policy of maintaining the status quo rather than growth.

While he awaited word about purchasing new cabinets for his department, Elliot's highest priority was to augment the museum's zoological collections whenever possible. Ideally, he wanted to be granted authority to purchase specimens according to his own best judgement, rather than submitting individual requests to the executive committee for their scrutiny and approval. But the committee declined to make this arrangement. Among Elliot's desiderata in 1894-95 was Sir William Dawson's collection of shells, a collection of 747 rodent skins from the mountains of New Mexico and Arizona, the Carpenter collection of shells in Montreal, the skin and skeleton of a Florida crocodile, a collection of specimens from the Philippine Islands, a collection of primates from Borneo, and a pair of musk ox specimens, male and female. [20] All of these purchases were eventually made. [21]

Elliot was especially anxious to acquire a number of specimens of African mammals that were being offered for sale by Rowland Ward of London. "*The* [...] *specimens are all desirable*," Elliot explained to Skiff. There were twenty-five specimens in all and the total price asked for them was "*about $1350, an average of fifty-six dollars apiece, which I consider for such specimens a rather low figure.*" With the exception of two goats, the specimens were "*not mounted, but in skin only, prepared to be mounted.*" Elliot considered this a decided advantage, however, as he preferred that "*such important pieces should be mounted in the Museum under my supervision.*" Elliot regretfully declined to recommend the purchase of a rare rhinoceros, however, explaining:

"*The amount asked for the White Rhinoceros, while I do not consider that it is by any means*

19. Skiff to Higinbotham, 29 January 1895, FMA.

20. Letters, D. G. Elliot to F. J. V. Skiff, 6 and 8 October, 22 December 1894, 8 and 21 January, 26 February 1895, FMA.

21. He also requested the purchase of numerous zoological reference books for the museum library. *"A workman, you know, however expert, can do nothing without tools,"* he justified to Skiff (Elliot to Skiff, 16 and 20 October 1894, FMA. The quotation comes from the 20 October letter). Elliot later requested a lump sum of $1,000 to be used for the purchase of zoology books, preferring to use his own judgement for these purchase, rather than going through the executive committee (see letter, D. G. Elliot to F. J. V. Skiff, 7 January 1895, FMA).

more than it is worth, & I regret to lose the opportunity of acquiring for the Museum a specimen of an animal so nearly extinct as this, yet in view of the fact that the Department of Zoology over which I have the honor to preside, is, in all of its Divisions, in need practically of everything [...] *I cannot at the present time advise that so much money be expended for one specimen, no matter how great an acquisition it might be to the collection of Mammals."* [22]

Meanwhile, there was also a great deal of work to be done to raise the standard of the museum's zoological exhibits. Elliot preferred to have a direct hand in this important work: "*I would ask that the rooms be left as they are until my return,*" Elliot wrote to Skiff from New York, "*so that I could have some personal supervision in the matter & decide which rooms certain of my Departments should be located, in order to display the collection to the best advantage.*" [23]

In fact, the first major revisions to the zoological exhibits had already begun under the watch of Frank C. Baker, who had served as temporary curator of zoology from March until his resignation in June 1894. [24] The museum had made arrangements for Professor Georg Baur, of the University of Chicago, to display for one year a large collection of animals harvested from the Galapagos Islands in 1891. These included many characteristic, endemic species, including gigantic land tortoises, huge marine and land iguanas, a small bat and a small rodent and an assortment of marine invertebrates. Best of all was a large collection of birds, sorted by island, showing a range of natural variation. Among these was the peculiar equatorial penguin,*Spheniscus mediculus*. All of these specimens were carefully arranged in six cases in a single small room, Hall 19 (see **Fig. 4**), on opening day (Anonymous, 1894a: 119-120). Less than three weeks later, however, the professor was asked to remove his collection from the building because it had "*begun to smell so badly.*" Baur agreed to remove the collection, but not before pointing out in a letter to Skiff that it was the room itself that stank, and not his specimens. He suspected an ulterior motive, and he was almost certainly right. Likely the pressure for additional exhibit space, in general, and possibly a complaint from Cory, who was no doubt bothered by the idea of another scientist exhibiting birds at the Field Columbian Museum, were the real reasons Hall 19 was emptied of its contents and later used to expand the mammal exhibits. [25]

A second major revision that apparently began after Elliot's arrival was the complete de-installation of Halls 22 and 23 (see **Fig. 4**). Hall 22 had originally been intended for ichthyology and herpetology. On opening day, however, it was host to what was called the Section of Animal Industries, and exhibited a number of collections obtained from the World's Columbian Exposition. Chief among these was a "*valuable collection of tanned skins and leathers,*" an "*extensive collection of footwear,*" an "*interesting collection of leather articles from Jerusalem,*" etc. In a nod to Chicago's meatpacking industry, there were also two models of "typical" Chicago slaughterhouses, showing the modern methods of killing, processing and packing both cattle and hogs. Hall 23 was meant originally to display the museum's osteological collections. Instead, on opening day, it harbored the Section of Fishery Industries, including models of whaling ships, examples of scrimshaw, sperm whale teeth, walrus tusks and narwhal horns. In the center of the room was an original whale boat from the bark "*Progress,*" fitted out for service, complete with life-sized models of six sailors (Anonymous, 1894b: 170-174). Over the course of 1895, these halls were emptied of their contents and made ready to exhibit skeletons, fishes and reptiles as these collections gradually grew in size, and as they were crowded out of Hall 20 – the Hall of Vertebrate Zoology (**Fig. 6**), by the steady growth in mammal specimens.

Finally, Elliot recognized that his department would need considerable space for expansion in the coming years, and he had his eye on the roomy West Court. Some additional space could be found by simply re-arranging the objects already displayed there. Elliot gained more significant ground, though, when he recommended the removal to storage of the museum's enormous, sixteen-foot-high model of the Siberian mammoth (**Fig. 7**). According to Elliot, the mammoth model had become, by the summer of 1895, a

"*breeding place for countless moths, which feed upon the paste used in the construction of this historically incorrect specimen, and will speedily make it a menace to all exhibits in the Museum which are liable to attacks from these destructive insects.* [...] [*I*]*n view of the danger incurred*

22. Letter, D. G. Elliot to F. J. V. Skiff, 24 December 1894, FMA. Ward had asked $2,000 for the skin of the rhinoceros (see Elliot to Allen, 14 January 1895, FMA).

23. Letter, D. G. Elliot to F. J. V. Skiff, 25 October 1894, FMA.

24. For more on Baker's service to the museum, see Brinkman (2018).

25. Letter, G. Baur to F. J. V. Skiff, 23 June 1894, FMA. There is no direct evidence of Cory's involvement in this dispute, yet a complaint from Cory seems to be the most likely cause.

Fig. 6. Hall 20 – Vertebrate Zoology, ca. early 1894. This photograph shows the typical style of zoological display used on opening day, 2 June 1894. Courtesy, The Field Museum. CSZ8218.

Fig. 7. The West Court, ca. 1894. Many oversized specimens were exhibited here, including the moth-infested model of the Siberian mammoth. After 1896, this was the space into which the Zoology Department expanded. Courtesy, The Field Museum. CSGEO6232.

from its presence, & its small value as [a] true representation of the Mammoth, I would advise its removal from the building." [26]

Skiff tried to sell the specimen back to Ward's Natural Science Establishment, from whence it had come. Ward would not take the model back, however, so it was placed in storage in the museum's warehouse. The space gained in the West Court would eventually be used to exhibit large mammal groups (see Brinkman forthcoming).

Elliot was seldom idle. He did a complete inventory of the collections, comparing the specimens present against a series of collection catalogs. [27] In December 1894, he and his assistant curator identified an alleged fossil hominid skull found by a policeman in a drainage canal as a glacial curious boulder, thus shattering the policeman's "*dream of antiquity and cash*" (Anonymous, 1894c). He did preliminary, comparative work on the most interesting of the incoming specimens. In the spring, he gave a series of well-attended popular lectures at the museum on zoological and paleontological topics (Field Columbian Museum, 1896; Brinkman, 2000: 91). He agreed to give a course of zoology lectures at the University of Chicago in the fall. [28] And he supervised the work on the department, in general. Busy though he was, he could not have been happy with the relatively slow pace of activity in his department in 1895.

Enter Carl E. Akeley

Perhaps the one most promising incident of that otherwise very discouraging year was the arrival at the Field Columbian Museum of Carl E. Akeley, taxidermist. [29] Akeley was born on 19 May 1864 in rural Clarendon, New York, and grew up on a fifty-eight-acre farm. He hated school and had limited formal education. But he loved the outdoors and its animal life. Awed by a visit to see a free exhibit of stuffed and mounted animals in nearby Rochester, New York, Akeley taught himself the rudiments of taxidermy with the help of a how-to book. Later, he honed his skills under the tutelage of David Bruce, the artist responsible for the captivating Rochester exhibit. He learned a great deal from Bruce and gained much in confidence. He even had business cards printed proclaiming that he did "*artistic taxidermy in all its branches.*" After only a few months, Bruce, impressed with the younger man's natural ability, convinced Akeley to apply for a position at Ward's Natural Science Establishment in Rochester (Bodry-Sanders, 1998 [1991]: 2-14). [30]

Many years later, Akeley remembered that he was nervous and scared when he arrived at Ward's. At the gate, a sign was posted reading: "*This is not a museum but a working establishment, where all are very busy.*" This would seem to bode well for a hard worker like Akeley, but the sign made him feel unwelcome. He was admitted to see the proprietor, Professor Henry A. Ward, a "*very busy, very brusque, and very fierce man.*" Akeley recalled that he had never had "*a worse moment than when this little man snapped out 'What do you want?'*" (quoted in Bodry-Sanders, 1998: 15-16). Akeley sheepishly handed the angry man his business card, and Ward hired him on the spot. Ward's was a promising fit for the young Akeley. A booming commercial outfit that supplied prepared animal specimens of all kinds to American colleges, museums and private cabinets, Ward's would seem to have been the perfect place to practice taxidermy and learn the latest and best techniques. Akeley apprenticed himself to William Critchley, "*who had attained the highest proficiency in the taxidermic methods of his day*" (Bodry-Sanders, 1998: 18-19). Critchley became an important friend and ally. But Akeley quickly grew dissatisfied with the factory-like methods employed at Ward's. The "upholsterer's" method of mounting animals, for example, was to sew the skin up like a pillow, stuff it with straw or excelsior, and then pull the skin in with needle and thread to shape the animal's body. This produced unlifelike results. Akeley experimented with new methods on Ward's specimens on his own time with some success. But after four frustrating years, he decided to move on.

In 1886, he moved to the Milwaukee Public Museum in Milwaukee, Wisconsin, at the invitation of his close friend and former Ward's colleague, William Morton Wheeler. There he worked on a contract basis, later succeeding to full-time taxidermist. He stayed in Milwaukee for six productive years. He worked in his own studio now, and was free to develop pioneering and inventive taxidermy techniques, including life-like plaster manikins on which to mount animal skins. His work in Milwaukee involved (mostly) animals collected locally in Wisconsin. The pinnacle of this work was his now-famous

26. Letter, D. G. Elliot to F. J. V. Skiff, 20 June 1895, FMA.

27. Letter, D. G. Elliot to F. J. V. Skiff, 26 December 1894, FMA.

28. Elliot to Chapman, 9 April 1895, ODLA, AMNH.

29. Akeley, more often than not, self-identified as a sculptor or artist rather than as a taxidermist. See Andrei (forthcoming) on Akeley's fusion of art and science.

30. For more on Ward's Natural Science Establishment, see Kohlstedt (1980).

muskrat habitat diorama – one of the first of its kind in America – completed in 1890. He left the Milwaukee Public Museum in 1892 and set up a private studio in DeKalb, Illinois, where he did taxidermy work on a contract basis. His most important commission during this period was a series of three mustangs he mounted for anthropologist William Henry Holmes for the Smithsonian Institution's exhibit at the World's Columbian Exposition. Akeley's horses were magnificently done, and they made a lasting impression on the museum world (Bodry-Sanders, 1998).

By 1895, despite his artistic successes, Akeley's business was failing, and his private investors were getting restless. He was working feverishly on a revolutionary habitat diorama of Virginia deer that he hoped to debut – and to sell – at another world's fair in Paris. But this speculative and costly venture was far from finished. To make ends meet, he was reduced to refurbishing fur coats. Meanwhile, his friend Wheeler managed to convince Director William Henry Flower of the British Museum to offer Akeley a position as taxidermist. With no other viable options, Akeley accepted. On his way to New York City, he stopped to transfer to another train at Chicago. There, he made a fateful visit to the Field Columbian Museum. According to one account, Akeley's reputation as a taxidermist of the highest order preceded him. When he arrived at the museum, he was ushered through the zoological exhibit halls by an enthusiastic guide, D. G. Elliot, who explained his grand plans for the new museum. During the course of this tour, Elliot managed to convince Akeley to move to Chicago to do taxidermy at the Field Columbian Museum on a contract basis (Bodry-Sanders, 1998).

Akeley began working on mounted animals for the Chicago museum as early as May 1895 (Hough, 1895: 369), probably earlier. Exactly how Akeley became associated with the museum is not well-known. It seems likely that W. H. Holmes, who had commissioned Akeley's mounted horses for the World's Columbian Exposition, and who was now curator of the Department of Anthropology at the Field Columbian Museum, must have played some part in bringing Akeley to Chicago.

In any case, Akeley worked first on the accumulated skins of large mammals that Elliot had purchased over the course of the year. This included an assortment of orangutans and proboscis monkeys from Borneo, a group of musk-ox, and especially a series of antelopes from Africa. At least one of these, a water-buck skin, was spoiled and failed in the mounting. However, the seller, Rowland Ward, accepted responsibility for the specimen, and he substituted the skin of a slightly more expensive white-tailed gnu, sending a bill for the difference. Elliot was pleased with the exchange, writing: "*As this animal is now extinct & the probability of our getting a specimen in the future not very good, I do not think the small advance in price for a better specimen should prevent us from securing this one.*" Elliot earmarked this specimen especially for Akeley, whose superlative skills as a taxidermist he already recognized, writing: "*I would prefer to have the skin for Akeley to mount, but do not think it wise to order it over, lest there should be a failure in softening it & the risk of success be ours.*" [31] Elliot was delighted with Akeley's results. In a letter to a colleague, Frank M. Chapman, he boasted: "*I got a string of Antelope into the cases on Saturday from the Taxidermist, & they drew crowds yesterday. As specimens they are not to be beaten anywhere.*" [32]

The type of work that Akeley was soon doing at the Field Columbian Museum was revolutionary. Rather than mounting a taxonomic series of specimens in stiff, lifeless rows in glass cases, Akeley – together with colleagues in rival museums – was developing a new, synoptic style of zoological exhibition. The habitat group, as it came to be called (and, later, the diorama), was a single exhibit case – often a large one – populated with a selection of realistically mounted animals in life-like, natural poses together with authentic habitats and backdrops. The idea was to re-create nature in urban museums as realistically as possible. This new style of zoological exhibition was very popular with the public. But it was also time-consuming, labor-intensive and expensive to build (**Fig. 8**). [33]

Much of this work was done at a new warehouse and workshop space at the corner of 56th Street and Jefferson Avenue. The museum purchased this building in 1895 in order to provide much-needed additional space for storage. A second critical need was to find a space apart from the main building for some of the more noxious and messy museum functions, including carpentry, modeling and plaster work, and especially taxidermy, "*three kinds of labor which could not be permitted within the Museum*

31. Letter, D. G. Elliot to F. J. V. Skiff, 31 July 1895, FMA. See also letter, D. G. Elliot to O. P. Hay, 14 July 1895, FMA.

32. Letter, D. G. Elliot to F. M. Chapman, 23 December 1895, Ornithology Departmental Library & Archives (hereafter, ODLA), AMNH.

33. On the history of habitat groups and dioramas in museums, see Wonders (1993) and Rader & Cain (2014).

Fig. 8. This orangutan exhibit was among the first habitat groups that Akeley completed at the Field Columbian Museum. Courtesy, The Field Museum. CSZ6235.

building as at present arranged" (Field Columbian Museum, 1895: 20).

By October 1895, the modest appropriation that Elliot had received to cover the cost of Akeley's contract work in taxidermy was quickly drying up. He wrote an urgent letter to bring this matter to Skiff's attention:

"*I desire to call your attention to a portion of the Department under my charge, and which is of so important a character that perhaps the Executive Committee at their next meeting, may take it into series consideration. I refer to the Taxidermic branch. As you are aware I have engaged now for some months E. C. Akeley* [sic], *to mount the Antelope skins purchased early in the winter, and the work that he has accomplished and that which I have laid out for him to do, will exhaust the appropriation made by the Executive Committee last December for this purpose.*"[34]

34. Letter, D. G. Elliot to F. J. V. Skiff, 9 October 1895, FMA.

Elliot was deeply impressed with Akeley's work, and he did not want to lose his valuable service:

"*Mr. Akeley's work is equal to the best I have ever seen in any land, and it is rare to find a man that can do nearly as well. He came to me lately to learn if I was satisfied with his work, & what were the prospects for the future, as it was necessary for him to make other arrangements if he was not needed on the completion of the work in hand. I consider it would be a misfortune for the Museum to lose his services, and*

therefore [...] *spoke to the President, who directed me to ascertain how much Mr. Akeley would ask per year for his services. This I did, and was informed that he would accept $2500. This I consider a fair remuneration, for there are not a half dozen men in the United States, perhaps not three, able to equal his work. There is a great deal for him to do, much bad work to do over when possible, beside the new now on hand, & that I hope to acquire by new material. A Taxidermist Department is a necessary adjunct to that of Zoology, as there is always something to be done, and no method is so expensive as having the work done by the piece.*" [35]

When the executive committee next met, they agreed to offer Akeley a position as taxidermist at the rate of only $2,000 per year, and to engage him by the month only. Akeley reluctantly accepted the lower salary, but he objected to the lack of job security, feeling strongly that his position was "*of a character that entitles him to the terms made with the Curators and Assistant Curators of the Institution.*" Skiff, concerned that Akeley would not accept the contract under the terms offered, wrote to Harlow N. Higinbotham, chair of the executive committee, to plead Akeley's case. "*I feel that we are very fortunate in securing Mr. Akeley's services at the price stated,*" Skiff wrote.

"*He is a superior workman.* [...] *He feels that he should receive a higher salary than he has concluded to accept, and only does so because he is interested in the Institution and desires to live in the West, and believes that at the end of the year, his work will commend to him an increase in salary, which I do not doubt will be the case.* [...] [*W*]*e would not be able to obtain as good a man for the sum he has now agreed to accept.*" [36]

It is not known precisely what adjustments the executive committee made regarding the contract, but Akeley did agree to stay with the Field Columbian Museum.

The winter of Elliot's discontent

1895 had been a lean and disappointing year at the museum for Elliot. He disliked Chicago and its pretensions as a cultured center like his beloved New York. He wrote a letter to Allen, asking him to send a copy of a publication he needed for work, complaining: "*there is not a copy of this Journal in this highly cultured & only Metropolis.*" He was content with his Hyde Park neighborhood, he wrote, but largely because it was "*so far removed* [...] *from the soot & general nastiness of the town itself.*" [37] Even the city's tobacco stocks were unsatisfactory: "*since I have been practically compelled to smoke 'domestics' since my arrival in Chicago,*" he wrote in a note to Skiff enclosed with a box of cigars, "*I take a kind of fiendish pleasure in causing another fellow to suffer likewise.*" [38] Perhaps the best indicator of Elliot's dislike for Chicago was his rampant absenteeism that first year. He worked for several weeks in New York in April and early May. He took a family vacation of more than two months from early July through sometime in September. And he spent several weeks attending a meeting in Washington, DC and working at the American Museum in November and early December. [39]

Elliot was not entirely happy with his circumstances at the museum, either. The lack of resources to pursue science, and the cumbersome and time-consuming way of doing business at the Field Columbian Museum were the most vexing problems. He had established a good relationship with Director Skiff, addressing him in personal letters as "*my dear Skiff,*" and calling him "*my friend.*" In fact, he spent so much time conferring with the director that they both began referring to the extra seat in Skiff's office as "*Elliot's chair.*" [40] Yet he also found the "*ceremonious*" requirements of their more formal relationship tiresome. [41] His relationship with Cory was more difficult. Though they had known each other for many years, and had even been friendly, in Chicago – even though Cory was absent more often than not – they became rivals. Cory had privileged access to several of the museum's founders, including Vice President Martin A. Ryerson – Cory's childhood friend and Harvard roommate – and President Edward E. Ayer, and he worked these channels constantly to defend his ornithological department from what he saw as Elliot's incursions. Elliot must have known about Cory's territorial behavior from all the complaints he had to field from Skiff: complaints about Elliot's title, and the name of his department; complaints about control of the bird skeletons in the osteological hall; complaints about the placement of the ornithology library (for details, see Brinkman, 2018). And Elliot still objected strongly to what he saw as the arbitrary separation of ornithology from his own department, especially as he self-identified prima-

35. Elliot to Skiff, 9 October 1895, FMA.

36. Letter, F. J. V. Skiff to H. N. Higinbotham, 19 November 1895, FMA.

37. Letter, D. G. Elliot to J. A. Allen, 9 May 1895, MDLA, AMNH.

38. Letter, D. G. Elliot to F. J. V. Skiff, n. d., FMA.

39. See letters, Elliot to Allen, 9 May 1895, MDLA, AMNH; F. J. V. Skiff to E. E. Ayer, 5 July 1895, FMA; and D. G. Elliot to F. M. Chapman, 28 October 1895, ODLA, AMNH.

40. Letter, D. G. Elliot to F. J. V. Skiff, 30 July 1896, FMA.

41. Elliot to Skiff, 19 July 1895, FMA.

rily as an ornithologist.

Moreover, it seems that Elliot did not take Cory very seriously as a practicing scientist. Late in 1895, Elliot published a popular reference book on North American shore birds (Elliot, 1895). Cory was miffed, writing to Elliot that had he known about the book, he would have hesitated to publish his own work, which was coming out soon and apparently covered some of the same ground. Elliot was incredulous. "*What is* [*Cory*] *going to astonish us with?*" Elliot asked Allen in a letter. "*Have you heard?*" In April, Cory had a brush with death while hunting birds in Florida. Elliot was blasé and even a little mocking in relating this news to their mutual friend Frank M. Chapman. "*Cory came near being killed by a panther,*" he wrote,

"*which had been tired & which he tried to photograph. The beast did not want to sit & sprang at him, knocking the old man down, bit & scratched his face, shoulder & arms & would have killed him, had not the hunter with him shot it through the heart. I suppose what is left of the wreck will be coming this way before long.* [...] *Mighty hunter!!*" [42]

Elliot could also be fussy about his physical surroundings, and the Field Columbian Museum's building, the former Fine Arts Palace, gave him fits of displeasure. He had been very comfortable at New York's American Museum of Natural History, "*a building,*" he wrote to Skiff, "*with whatever defects it may possess,* [*that*] *is in my judgement the best and most excellent devised for the purpose intended of all those erected for a similar purpose in the world.*" [43] The Fine Arts Palace, by comparison, left much to be desired. It was plagued by cracked and leaking skylights, falling plaster, mysterious and unpleasant odors, rodents and – worst of all for Elliot – a new steam heating system that was utterly inadequate to Chicago's notorious winter weather. Elliot complained about the lack of heat in the museum frequently, but especially when he was away from the city. "*I thought of you all hugging the radiators during the late blizzard,*" he wrote to a museum colleague. "*Expect to arrive next week about Wednesday & begin to hug myself.*" [44]

When the one-year anniversary of his employment approached, Elliot began to grumble about leaving the museum. What apparently set Elliot off was that he somehow got wind that the museum intended to adjust his salary down to $3,500/year. Elliot had declined to accept that salary when the job was first offered to him the previous summer at Cory's Great Island estate, so Skiff and Cory then conspired to offer him an extra $500. Apparently, they did not make it clear to Elliot that this was meant to apply to the first year only, to cover his moving expenses. One year later, the museum wanted to set the record straight on Elliot's $500 bonus. Ryerson asked Cory to send a letter to Ayer providing his best recollection of the negotiations with Elliot. "*I certainly understood it to mean for the expenses of moving to Chicago and to apply to the first year only but it was not stated that it should be for one year, no* [*r*] *was it stated that it should be for more than one year,*" Cory recalled, unhelpfully. The idea, he explained further, was to get Elliot to agree to accept the job on a trial basis and "*see how he* [...] *liked the place and how the Museum authorities like him.*" Cory was certain that Skiff understood the arrangements exactly as he did and insisted that no business was done after the director left. [45] But, whatever had happened at the negotiation, Elliot wanted his salary to remain at $4,000/year.

Skiff genuinely feared that Elliot would leave. In fact, one of the reasons he was so anxious to retain Akeley's services was his concern that "*if there is to be a change in the head of the Department of Zoology, [Akeley] will be very valuable to the Museum.*" [46] Later, in a letter to Cory, Skiff once again addressed the ornithologist's repeated complaints about Elliot referring to himself as the curator of zoology. He reminded Cory that in its official publications, the museum consistently maintained the distinction between the two departments. (This was not, strictly speaking, entirely true.) He then asked Cory to be patient a little longer, writing: "*I apprehend that this and other matters pertaining to the Department of Zoology, except Ornithology, will have determinative action within a very short period.*" [47] In other words, Skiff expected Elliot to jump ship.

The museum, however, was finally poised to institute its long-planned program of expansion, and members of the executive committee, who were more than satisfied with Elliot's job performance, were eager for the curator to remain at his post. "We are much the weakest in Natural History," Ayer remarked in a mid-

42. Letter, D. G. Eliot to F. M. Chapman, 9 April 1895, ODLA, AMNH.

43. Elliot to Skiff, 18 December 1894, FMA.

44. Letter, D. G. Elliot to D. C. Davies, 4 December 1895, FMA. For additional details on the museum's troubled occupation of the Fine Arts Palace, see Kohlstedt & Brinkman (2004: 23-25).

45. Cory to Ayer, 8 November 1895, FMA.

46. Skiff to Higinbotham, 19 November 1895, FMA.

47. Skiff to Cory, 19 November 1895, FMA.

December 1895 letter. "[*We*] *are anxious to extend in that direction as fast as it may be found possible.*" [48]Had Elliot decided to leave the museum, it would have upset the executive committee's grand plans for speedy zoological expansion. Therefore, on 13 December, Ayer and Higinbotham sent Elliot a letter – now lost – outlining the terms of the museum's new offer. They did not raise Elliot's salary, but they did offer him something that compelled him to stay. [49] The obvious conclusion is that the museum gave Elliot to understand that the trickle of financial resources for his department would begin to flow more abundantly in the new year.

Conclusion

The early history of zoology at the Field Columbian Museum is a story of frustration, struggle and unexpected expenses. The museum was founded in 1893 by ambitious Chicago philanthropists who had the idea of creating a world-class institution in their city virtually overnight. Founders learned two important lessons in the first years of the museum's existence. First, building and operating a museum of the scope and size that founders first imagined would be enormously expensive. Second, creating a reputable and useful scientific institution would take more than money – it would also require time and talent. In the zoological departments, the museum managed to acquire a good staff of curators, taxidermists and assistants. The museum struggled to retain this staff, however, when their expectations were not immediately met. The museum likewise did well to purchase – at great cost – the nucleus of its exhibit and research collections in zoology within its first few months of existence. However, the new curators soon made it abundantly clear that these collections were only the beginning, and a somewhat feeble beginning, at that. Curators explained that further purchases and expeditions were in order to grow these collections. Finally, the museum managed to open with a fairly credible series of zoological exhibits. However, the style of zoological exhibition was changing rapidly in the 1890s, and the Field Columbian Museum found itself at the cutting edge of this change. The new style of habitat groups, while popular with the public, were also enormously expensive to build.

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48. Letter, E. E. Ayer to C. M. Higginson, [ca. 11 December 1895], FMA.

49. See letter, D. G. Elliot to E. E. Ayer and H. N. Higinbotham, 18 December 1895, FMA.

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