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Jay Matternes
August 6, 2020

Interview conducted by Vincent Santucci
Transcribed by Teresa Bergen
Edited by Molly Williams

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NPS History Collection
Harpers Ferry Center
P.O. Box 50
Harpers Ferry, WV 25425
HFC_Archivist@nps.gov

Narrator: Jay Matternes
Interviewer: Vincent Santucci
Date: August 6, 2020
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Transcribed by: Teresa Bergen

Transcript

[START OF INTERVIEW]

Matternes: Well, thank you. And you?

Santucci: Oh, very well, thanks. I sure appreciate your time.

Matternes: Well, it's a pleasure speaking with you.

Santucci: That's for sure. So, you've probably heard this many times, but I grew up loving fossils and visiting the Smithsonian Natural History Museum. And your paintings are a very, very iconic set of images that I hold close to my heart and inspired me in many ways.

Matternes: (laughs) Well, thank you. Yes, I grew up in much the same way, although in a different location. During the 1930s, the late '30s, I would ask my parents every Sunday to take me to the Denver Museum of Natural History to see the dioramas and the marvelous collection of fossil vertebrates that they had on display and still do. But it was something that influenced me from the very start. (laughs)

Santucci: Excellent. Well, do you mind if I record this interview?

Matternes: No, that's quite all right.

Santucci: Okay. So I'll go ahead and record it. I have just an opening statement, and then I'm going to ask some questions. And I would love to hear about your experiences when you were young.

Matternes: Okay.

Santucci: All right. I'm going to give just a little brief introduction. Today is Thursday, August 6, 2020. And my name is Vincent Santucci. I'm the senior paleontologist for the National Park Service paleontology program. Today we are interviewing artist Jay Matternes. Jay is well known in the paleontological community for the murals he produced for the Smithsonian Natural History Museum's Fossil Hall. Some of which depict prehistoric scenes from several National Park Service fossil sites. Today the interview is being conducted over the telephone from Jay's home in Virginia. And I am participating from my home in Gettysburg, Pennsylvania. So, thank you, Mr. Matternes.

Matternes: Oh, you're in Gettysburg.

Santucci: Yes. Yeah. I commute into DC regularly when we're not dealing with the pandemic.

Matternes: Mm hmm.

Santucci: So, I was going to ask you a series of questions. And the first one is an easy one, is when and where were you born?

Matternes: I was born on Corregidor Island in the Philippines.

Santucci: Oh, wow.

02:43

Matternes: My father was an army surgeon throughout his entire career. And then of course he retired. And then he worked as an industrial surgeon for the Pennsylvania Railroad/Central, Penn Central, I guess it was. And then it was Amtrak.

Santucci: So I'm going to ask you two very similar questions. I'll ask them at once, and you can respond however you like. When you were growing up, were there any particular experiences that you recall that got you interested in fossils and paleontology? And the second question, which is similar, is that as you were growing up, was there anything in particular that got you interested and excited about art?

Matternes: Well, they were almost inextricably combined. I grew up, well, I shouldn't say I grew up, because being an army brat, I grew up a number of different places. But in one particular formative stage, I was with my home, of course, in east of Denver, east of Aurora, Colorado. And I would urge my parents to take me to the Denver Museum of Natural History every Sunday or to the Denver Zoo. I've always been interested in animals. And I was always drawing, sometimes on the floor in bad light. Which is something all little kids do. But I never seem to have grown out of it. (laughs) I continued drawing and drawing. And drawing is a way of thinking. It isn't just a separate activity. And going into a career in art was a natural progression. And my primary interest was in the natural history depiction.

I was never really exposed to the paleontology, except of course in Denver, more than other aspects of the natural world, the extant natural world, until I was contacted during my army service—well, prior to my army service—by some of the people in the paleontology department at the Smithsonian. They were planning in 1958 to '60 a revision of the halls in the Natural History Museum, which had been planned during the late 1930s but were put on hold because of World War Two. One of the halls that they were planning was a hall of fossil mammals. And since I had painted previously two backgrounds, big diorama background in the North American Mammal Hall at the Smithsonian, they thought that I might be interested in undertaking a series of murals depicting various eras in the Cenozoic era. The Cenozoic Period, I should say. And I was absolutely delighted at this opportunity.

During my army service, I was stationed at, fortunately, at Cameron Station, at the Army Exhibit Unit there. Which was an adjunct of the Pentagon Chief of Information's Office Department of the Army, unassigned. And I was able to commute. During the day, of course, I was working at my army assignments. And at night I would work at the Smithsonian, working on things that the curator there, Lewis Gazin would set out for me. He had me, first of all, orient myself with certain primers. For example, William Berryman Scott's *A History of the Land*

Mammals in the Western Hemisphere. And the South Dakota School of Mines' publication, *The White River Badlands.* I remember those were, that was redistributed recently by the Wall Drug, which you see as you drive through Nebraska. Which I did, subsequently.

But at any rate, I was preparing for this. They said there was no assurance whatever that I would be given the contracts for these murals, but I would be a contender. But I was immersing myself in this and thoroughly enjoying it. It was an entirely new experience for me. So rather than depicting extant mammals, I was to depict those from my imagination which were constructed, or reconstructed, from their fossil remains.

Let's see, I'll get a little bit longwinded and perhaps—

Santucci: No, I enjoyed that. That's perfect.

Matternes: [unclear] some of your other questions. (laughs)

Santucci: No, that's perfect. And so, your contact was Lewis Gazin?

08:52

Matternes: Lewis Gazin, yes. And Dr. David Dunkle. I had been working after my graduation from Carnegie Institute of Technology in Pittsburgh. I worked first at the Cleveland Museum of Natural Science. Natural History, I should say. And one of the people there, who was an expatriate from that particular museum, was Dr. David Dunkle. He was a specialist in invertebrate fossils, particularly of the Devonian period. And it was he who really made introduction to Dr. Gazin. Made introduction of me to Dr. Gazin. And of course to Dr. Carmichael, who was then secretary of the Smithsonian. And some of the people who were in charge of exhibits renovation, particularly Dr. Friedmann at the Smithsonian, who was then curator of birds but also in charge of this exhibit's renovation program. And that began my preparation. That was in 1957. I was drafted in 1958 and served two years in the Army Exhibit Unit, which was an excellent assignment for me. And it worked out perfectly. And it did happen, I did receive, apply for and receive the contracts for at least the first mural. And then on the basis of that, the successive murals. They decided to stay with me because they wanted a uniformity of approach in the hall.

Santucci: Excellent. And what years were you in Pittsburgh at Carnegie Tech?

Matternes: I was there from 1951 to 1955. I was offered a full scholarship in the department of fine arts at Carnegie Tech. And that's Carnegie Mellon University, as you know.

Santucci: Yes.

Matternes: And I worked at the same time in the studio of the chief staff artist, Ottmar Von Fuehrer and his wife, Hanne, who were both excellent preparators. And I worked on the exhibits. I worked, of course, fulltime during the school year, I was working at Tech. And on the weekends and in summer vacations, I was working at the museum. And I was in fact working on actual exhibits preparation at the museum.

Santucci: At Carnegie Museum?

Matternes: At the Carnegie Museum, yes.

Santucci: Of Natural History in Pittsburgh, yes?

Matternes: That's correct. Mm hmm.

Santucci: I was born in Pittsburgh, so my two favorite places to go were Carnegie Museum and Forbes Field.

Matternes: Uh huh. Yes. Nearby. Right. (laughs)

Santucci: So that's great. So you were able to interact with staff at Carnegie Museum of Natural History while you were at Carnegie Tech.

Matternes: That's correct. Yes.

Santucci: And was that, did that have any bearing or influence in terms of where you wanted to take your career?

Matternes: Yes, it did. I couldn't conceive of doing anything other than becoming a natural history artist. And of course I was exposed to magnificent fossils there. The *Diplodocus* and the tyrannosaurus rex, and other outstanding fossils. Including those from the Nebraska excavations at Agate [Agate Fossil Beds National Monument]. Which were things I passed virtually every day. So they had quite an influence on my thinking. For the most part, I was studying extant animals. Which I think served me as a good preparation. Because there is a continuum of life. And the same ecological challenges that face extant life forms were those they had to deal with in the paleontology record.

A good reflection of that was in the Lila Acheson Post Hall of Mammals at the American Museum of Natural History. You may have seen this, it's a splendid hall on the third floor. And they show both extant mammals and fossil skulls and skeletons in the same hall. Which shows the visitor that there is really no, no gap between the past and the present. It's all one continuum of life. And that's the way I'd always thought of it, really.

Santucci: That's great.

Matternes: I couldn't see, I could not see a schism between the depiction of modern life forms and those of the past.

14:27

Santucci: And you incorporated that belief into your artwork?

Matternes: Well, for the most part, not in so many words. Not as an intellectual, I just did it naturally, really. It just came to me. I never really verbalized it as such.

Santucci: And did you produce any exhibits, either for modern animals or for prehistoric animals when you were at Carnegie Museum?

Matternes: Well, for the most part, I was assigned various assignments. For example, I worked in the Egyptian Hall an excavation of a grave in Egypt. Not in a pyramid, but in another type of environment. I did a mural about the great pyramid at Abusir in Egypt. I worked for the Education Department and I produced a number of paintings of modern farms for children. I did quite a variety of things there. And I painted a series of North American mammals as well, which were destined for exhibition. But I think as such they have long since been taken down. Which is the way things happen in museums, public museums. (laughs) Nothing is ever permanent.

16:20

Santucci: Did you do any work with the paleontology staff?

Matternes: Not at that time. No. I knew of these people. They were on the staff. But I was never really assigned to any paleo projects at the museum.

Santucci: I see. Was Mary Dawson there at the time?

Matternes: She came just after I left.

Santucci: Do you recall—

Matternes: I did not know her, although it seems to me I had some correspondence with her at one point afterwards.

Santucci: And was there any paleontologist that you had contact with at Carnegie when you were there?

Matternes: No, not really. No. It wasn't until I came to the Smithsonian that I was engaged in this fulltime.

Santucci: Very good. When you were there, they had some of the classic vintage exhibits on display with tyrannosaurus rex and other—

Matternes: Oh, yeah.

Santucci: Do you recall your impression of those exhibits at the time?

Matternes: Well, they were very impressive. They couldn't help but make a deep impression on you. And the diplodocus. Some of those that were of course made possible through Andrew Carnegie himself. But as I say, I would walk past these skeletons almost on a daily basis. And they were quite an influence on me. I remember the giant forest hog. Or giant hog, I should say, from the Miocene deposits. *Dinohyus*, which has now been renamed to *Daeodon*. That was a magnificent specimen that they had, which had been taken from the Agate fossil deposits, the Carnegie Hill there at Agate. Which I then visited, by the way, many years later. I had always been reading about this great place at Agate, which is now a monument. A National Park Service

monument. And I was quite entertained by being there. It was delightful. I did this in 1961. That's when I visited them. I flew out to Fargo, South Dakota. And then I took a tour through, along the Oregon Trail. I went to see a number of the great sites. Chimney Rock and Scottsbluff. And then I swung north, of course, to Agate and a number of other sites. The Rosebud Indian Reservation. If I'd had more time, I would have gone into North Dakota to visit Teddy Roosevelt's hunting lodge near Medora. But it was a wonderful trip I made. But it was very much later end and somewhat gratuitous. It wasn't really in response to some assignment that I had. It was simply something that I wanted to do.

When I was at Agate, I was surprised. I had been reading about the Niobrara River. And I was surprised to see what a small rivulet it was. It's very deep, but I could jump across it at certain points. (laughter) I was prepared for something like the Platte River, you know, a broad, meandering river with cut banks on one side and silt deposits on the other, lined with cottonwoods and willows and alders, which you characteristically see in a river in that area. But the Niobrara was quite a surprise. (laughs) You'd never know it was there if you didn't come upon it at that point. I presume it became a much larger stream later on. But in the Agate national park, monument, it was quite small. And unimpressive.

21:06

Santucci: So when you began to enter into a contract with the Smithsonian, it sounds like you mentioned that they had assigned you to do one original mural. Is that correct?

Matternes: Yes. The Eocene mural. Yes.

Santucci: So, it was the Eocene mural.

Matternes: Mm hmm. Middle Eocene, yeah.

Santucci: And so you were provided with a scope of what was to be included in what was to be included in that mural? Or did you have—

Matternes: Yes.

Santucci: Did you have flexibility to develop it as you had envisioned?

Matternes: Oh, no. I was to depict a certain number of genera and species, which were specified by Dr. Gazin, C. Lewis Gazin. And I made preliminary reconstructions of all of those mammals. And submitted them, of course, for his approval. And then I also had correspondence with certain paleobotanists. And consulted with certain paleobotanists in the museum, but others as well. I do that also with other succeeding murals because the environment was just as important as the animals themselves. And that's how I developed the design for each of them.

In designing these murals, I decided to make the horizon very high on the wall. In other words, very much above the visitors' eye level. In that way, I was able to show animals that were in the middle ground, or background, close enough to the visitor to show the salient points of their anatomy and their presumed behavior. Which was quite a challenge to do. But I carried that

idea throughout those four murals, and subsequently the two that I was to paint later on in the Ice Age Hall at the Smithsonian.

Santucci: And so the mural for the Eocene, was it to depict the Bridger Basin or what particular area?

Matternes: Just the Bridger Middle Eocene in Wyoming at the, in the heyday of the Eocene, yes.

Santucci: Okay. And the individual fossils that were incorporated into that. Do you recall which they were?

Matternes: Oh, yes. Well, there were, yes. Do you want me to enumerate them?

24:04

Santucci: If you don't mind.

Matternes: Yes. Okay. I wonder if you had seen the book that the Smithsonian did on these murals. Have you seen that? It's called *Visions of Lost Worlds.*

Santucci: Yes. I have. It's fantastic.

Matternes: Matthew Carrano. Yes.

Santucci: Yes.

Matternes: Well, there was the dominant animal, the largest animal in that was *Uintatherium*, a very great, bizarre creature. Then there were, of course, *Sinopa*, a creodont. There were several creodonts in that. There was *Orohippus*, the representative of the *Eohippus*, the horse. And there was a *Helaletes* a tapiroid. There was a taeniodont and a tillodont, which are representatives of totally extinct orders, leaving absolutely no relatives or descendants past the Eocene. There was a crocodilian in that mural, which is virtually indistinguishable from crocodilians of today. There were terrapins. There was a fossil primate, *Smilodectes*, sometimes called *Notharctus*. But Dr. Gazin preferred the designation *Smilodectes*. And there was one titanothere in the upper right hand corner, *Paleosyops.* The titanotheres were to become quite, quite extraordinary in size in the latter part of the Eocene to the early Oligocene, where they somehow very rapidly became extinct. I think that's about the extent of what I can report from memory. I'm looking at the book, also, just to refresh my memory. I hadn't anticipated that question (laughs) of enumerating them.

26:55

Santucci: When you were developing the artwork, did you have access to actual bones? Or what did you use—

Matternes: Oh, yes. Yes, I did. As a matter of fact, Lewis Gazin would set things out for me when I would come in at night to work on. I remember in particular one was a taeniodont skull. They had a very fine one. But others, for the most part, he had me study the published literature

and the articulations of the skeletons of these animals. And I used that, for the most part, as the basis for my sequential, three-stage reconstruction process. Which is something I did not invent, but something that I followed. In other words, you use the skeletal mount as one stage in your reconstruction. Then you make successive tracings of that, laying on soft tissues, particularly muscles and glands and whatever you can speculate. Whatever seems to be reasonable. And then, of course, you supply a possible pelt for the animal. And you base this on whatever evidence there is for its particular lifestyle. For example, if it's a forest-living animal, it might very well have been striped or reticulated so that it would be less visible in dappled sunlight. A plains-living animals is more likely to be monocolored. But not necessarily. And of course, there's countershading with most mammals, most animals, actually, including fish, are countershaded. The great white shark, for example, is black on the top side and white on the belly. All of that, of course, is related to its success in predation.

Santucci: Great. So you were able to create the first one. I assume that you had positive feedback from the paleontologist to want to then have you work on additional murals. Is that correct?

Matternes: Yes. Yes, I did. Yes.

Santucci: So how did the first one evolve into the second mural? And were they done individually? Or once they liked what they saw, they contracted you to do the whole series?

Matternes: Well, for the most part, yes. Except that I remember on one occasion, one of the people in the mammals division, Hank Setzer was his name, Dr. Henry Setzer, he hailed me one day in the hall after I had finished the Eocene mural. He says, "Hey, Matternes!" He said, "You really pulled that one off." He said, "At one point, I was concerned about whether or not you were competent to do that mural."

What he was referring to was a preliminary stage in painting that mural where I had used an overall wash of color, into which, which is a transparent stain. Which is called an imprimatura. It's a common enough tactic in painting where you establish an overall color system over your underpainting. And then you work into it with more opaque color. And he saw it at that one early stage and he was quite alarmed that he thought that was going to be the finished stage. (laughs) But he was quite relieved and quite pleased to see the final result. And he let me know that. I did not know that at the time, that he had any objection. He may have made objections to the other staff members, but no one ever said anything to me about it. I guess they realized that I was, it was a preliminary stage in the development of the mural. But he did not.

31:54

Santucci: Okay. (laughs) So the first one was the Eocene, based on the Bridger.

Matternes: Eocene, yes.

Santucci: So the second one—go ahead.

Matternes: The second one, the second one was the Miocene. And the reason for the jump in time was the layout in the hall. The hall had to be open to the public, with the public flowing through. But this Miocene mural was in an open area and had to be finished first. And the space restrictions were such that they could not have the public flowing through the hall until I had finished this mural. The fire marshal would not have allowed the restricted space for the public to get through. There had to be a certain floor space, as I understood it, floor space for the public to flow through. Otherwise, the hall could not be opened. And that's why I jumped from the Eocene to the Miocene. Simply because of that particular restriction.

The other two murals in that hall, the Oligocene, and the Paleocene murals, respectively, were set in alcoves which could be closed off from the public while the public was flowing through the hall, while I was working on the mural. And that's why I had to do the second one as the Miocene, discontinuously.

33:40

Santucci: And was that your choice? Or was that how the contract read?

Matternes: No. that was imposed by the schedule of opening, projected opening and, as I say, the space restrictions in the hall.

Santucci: Okay. So I'm particularly interested in the Miocene because it depicts one of our National Park Service site, Agate Fossil Beds National Monument.

Matternes: Yes.

Santucci: And I think it's an interesting connection that you have, given that Carnegie paleontologists were heavily involved in part of the excavation of Agate Fossil Beds.

Matternes: Yes, they were.

Santucci: So tell me—

Matternes: As a matter of fact—

Santucci: Go ahead.

Matternes: —I was able recently to get a – well, recently, about twenty years ago, I was able to purchase a copy of the memoirs of the Carnegie Museum. The W.J. Holland paper on osteology of the Chalicotheroidea, which was a real coup for me. And it was one of the papers I wanted to get. I also wanted to get Peterson's monograph from the same series on *Dinohyus*. I have not yet followed through on that. I probably could find it on Amazon. But that's one that I wanted to get. And now I want to have that particular volume hardbound because it's only softbound. First of all, it would have to be deacidified, the paper is quite acidic. But it's an excellent copy of that particular memoir. It needs to be preserved.

35:23

Santucci: So tell me about your work on the Miocene painting and some of the thinking that went into that particular art.

Matternes: Well the same process was followed in all the murals. I would work on a scaffold for the upper parts of it. And I would of course have produced for the research and [expiration?] committee and for my curator beforehand, before I started work on it, a very complete, to-scale, comprehensive sketch in color on the entire mural and its contents. And submit it for their criticisms or approvals or suggestions. Then for the most part, I never had any trouble with any academic or administrative disapproval. And I will say this for, the preparation was done. I had requested that each of these murals be painted on a plaster wall on steel lathe and over a linen canvas. And the reason for that is I knew that the vibrations in the building might produce cracks in the plaster if it was painted directly on a plaster wall. I took this experience from what had happened at the American Museum of Natural History in New York, where the Marine Hall, one of the earlier halls in that great museum, the diorama backgrounds were painted directly on the plaster wall. And the vibrations from the Eighth Avenue subway, which ran under the building, produced constant tension within the plaster. And that produced cracks. Of course, that came through the painting. And anything that happened to the plaster wall in my murals would not be transferred to the linen canvas that was applied over them.

Those canvases were applied by a very skilled man who started at the top with a one-piece canvas. He would start, he would make over the entire surface, he would make a glue. And then he would let the canvas down and press it in contact with a brush, a smoothing brush. And the next day, when air bubbles would have been produced, he would inject more glue into that and then press it flat to the wall with a brayer. And that was done. And then he would make, after the canvas was completely prepared, he would coat it with about six coats of acrylic gesso. And that made a perfect, and he would smooth it out, and each successive coat, with sandpaper. And made a perfect, smooth, non-reflective surface on which to paint.

And of course they were painted in acrylics, which I specified because acrylics are a matte, they produce a matte surface. If it was painted in oil, you might get reflections. And of course in an interior, you cannot control the lighting from other exhibits. So it's absolutely essential that it be a matte surface. And that's why I used acrylics.

39:37

Santucci: Very good. Thank you. Is there anything that stands out in the Miocene mural that you found of particular interest? Or do you have a favorite prehistoric animal from the Miocene panel?

Matternes: Well, the two that stand out in my mind, of course, is the chalicotheres, *Moropus elatus* and of course *Dinohyus hollandi*, which is now called a *Daeodon*, which is probably a better name for it. And, let's see, the big enteledon, which is trotting along. Those two took my interest in particular. Now, *Stenomylus* is a delightful little camel, camelid. Very gracile. It was, the reason I gave it a three-toned coloration is its incredible resemblance to gazelles, which are an entirely unrelated group. But there's a certain parallelism in their mode of life. And that was what motivated by depiction of them with a dark upper coat, a middle and a light belly.

The same is true of the other, larger camelid, *Oxydactylus*, with the elongated neck. This animal was tending in the direction of giraffids rather than camelids, in its adaptations and its proportions, indicating that it would be a browser on the leaves of low trees. And in this case I've shown them feeding on a hackberry tree. I gave it a dappled color pattern, very much as one would see in a giraffe. The *Promerycochoerus* is a large oreodont, which is lying on the mud flat along the river. It's really hippopotamus-like, and it would not have had much body hair if any at all.

I've shown them in this mural in their summer coats. Undoubtedly in their winter coats, they would have been a bit more shaggy. But that was, I tried to show them in their optimal condition.

There's a small beaver-like form in this mural, *Steneofiber*, if I recall its name. Delightful little animal. Which is the one that produced these spiral-like burrows, which were uncovered at, I believe at the Carnegie Hill at Agate. They were the ones who were responsible for that. And I delighted, of course, in the lovely, lovely little horse of that time, *Parahippus*, which been renamed, gee, I've forgotten its name. But doesn't really matter. But *Parahippus* was the name that I –

And of course I always thought of this particular mural as being Lower Miocene. Whereas in fact it is now thought to be end of Oligocene to Miocene transition. That's probably an academic consideration, which would be lost to the public and really doesn't have much significance to me, either. But they have changed the periods on this. for example, the Oligocene mural is now thought to be what I called, what was called or thought at that time, at the time I did, it, was thought to be an Oligocene mural, is now thought to be, the period it depicts and the fauna and flora was thought to be late Eocene to early Oligocene. Whereas it was designated as Oligocene originally, and that's the way I always think of it. So, things have changed. And that's one of the reasons they gave for scrapping these murals. Because they do not really depict the current interpretations of the fossil record of the Cenozoic.

And of course I can see with the new hall that these murals would not be applicable. They could not really be integrated to the, with the new exhibit's program. As I said, every new group of people coming into a museum have their own ideas. And of course the science does change in time, and the hall must reflect current science. In time, of course, it will be changed again.

Santucci: Very good.

Matternes: As I say, nothing is permanent in a public museum.

45:19

Santucci: Sure. And so, do you recall what year the Miocene painting was finished?

Matternes: Let's see. I finished, I started work in 1960 on the Eocene mural. And began work very soon after I finished, I began work on the Miocene very soon after I finished the work on the Eocene. And that would have been within '61 to '62. Probably the latter part of '61 if I can place it in time. So anyway, it's here in the book. Let me just look at the book. (laughs) Just to

refresh my memory. I think it was – let's see. The Oligocene was done in '62. Yes. So it would have been the latter part of '61.

Santucci: So, what stands out to me is that was before Agate Fossil Beds was established as a national monument.

Matternes: Well, as I say, I was out there about, well, in the, no it was about 1970, I'm sorry, when I was out there. In the '70s.

Santucci: So it was a monument then.

Matternes: The Cook Ranch was still, was not yet a national monument in the 1960s. Is that what you're saying?

Santucci: That's correct. The time when you completed the painting, the monument had not yet been established.

Matternes: Uh huh. But I had not seen the – I had not visited that until much later.

Santucci: Okay.

Matternes: After I had finished it. As I say, I went out there for other reasons not related to the Smithsonian murals.

Santucci: The park today has a beautiful visitor center. And of course the official National Park Service guidebook and pamphlets all feature your artwork, your mural.

Matternes: Yes. Mm hmm. Right.

48:04

Santucci: So lots of people get to see that, which is nice.

Matternes: It also has some of the illustrations that I did for the Park Service booklet on the Agate series. Let's see, I've got that somewhere.

Santucci: They're called the National Park Service handbooks.

Matternes: Yes. That's correct, yes. Of the Agate Fossil Beds National Monument.

Santucci: I think that that book probably sold so much by virtue of the fact that it had very attractive cover art.

Matternes: Oh. I'm very gratified.

Santucci: Great. So after the Miocene then, do you know what the next mural was?

Matternes: After the Miocene, I did the Oligocene. And I painted that in '62. Then there was a hiatus, because I worked on the three Cretaceous miniature dioramas up on the mezzanine, which

is now gone. And I believe those dioramas have been disassembled as well, and scrapped. They showed the successive fauna from the Permo-Triassic transition through the Jurassic to the Cretaceous. And they were, they showed representative faunas of the entire group. I understand that certain of these genera were not all contemporaneous. They evolved over a long period of time. But for purposes of exposition—Dr. Nicholas Hotton at the Smithsonian was my curatorial, he was my curator and my authority. And I developed these reconstructions and the dioramas with him. And of course the reason for that was that these had to be installed. Had to be done before I had finished the fourth mural in the Fossil Mammal Hall. So, and of course dinosaurs are very popular exhibits, very popular subject. And these exhibits had to be finished next. And that's why I took time off from the murals for these dioramas.

I built very careful scale models of the final dioramas. And eventually when the model makers had finished their work, they were contracted to a good friend of mine, Neal Deaton, at the Deaton Nature Studios in Newton, Iowa. And he was the one who did the molds of the dinosaurs and of the plants to go into those dioramas. And I, subsequently he shipped them here to Washington and they were installed up in the mezzanine, and I painted the diorama backgrounds. And supervised the lighting. Because lighting is extremely important in a diorama exhibit. And I had also designated a marine, Cretaceous marine diorama. But that was never really installed. They decided on another, well, they had other cases that they were showing on the mezzanine, beautiful cases that were made of fossiliferous rock. I don't know whether you ever saw those, up in the mezzanine.

52:39

Santucci: Yes. Mm hmm.

Matternes: With bronze fittings. But unfortunately, when they were installed, they were brought up to the mezzanine on what must have been history's most expensive parquet floor. (Santucci laughs) But they were brought up still in their crates. And they were still banded. And they were not supervised. The workmen were not supervised. So they pushed these crates across, these heavy crates across that floor, scarring them. They could not be retrieved. So that is to say, the floor could not be retrieved because it was so badly damaged they had to completely recarpet the entire area. (laughs)

Santucci: Wow.

Matternes: I was witness to all this as I was painting the backgrounds of the three little dioramas.

Santucci: One question regarding the Oligocene mural. Was that to depict the White River Badlands particularly? Or was it something else?

Matternes: Well, it was not really specifically that location. You'll notice that I have shown some volcanic cinder cones in the distance. That probably would not have been—it was simply a synthesis of the Oligocene, per se. It was not really any particular location. Now that was not true of the subsequent Hagerman mural that I painted in the Ice Age Hall. That was a specific area. Of course, that was the Hagerman Fossil Beds in Idaho, along the Snake River, that I did quite a bit later.

The interesting thing about that, if I might digress for a minute, I had a number of different consultants about different parts of that. My curator was Clayton Ray, was an excellent, excellent curator. Because he was interested not only in fossil mammals, but in the entire ecological picture for each of those things that I was to depict. And he sent me to Hagerman. And eventually also to Alaska for the Fairbanks mural. And the thing was, I had, as I said, two particular consultants on the overall picture. One of them was a Harold Mulvey of the USGS. And the other was Claude Hibbard at the University of Michigan. And I was corresponding with both of them. And I would show them, I would send to them prints of my preliminary sketch for the mural. And on the horizon I had originally depicted basaltic columns, which are very characteristic of that area today. And Claude Hibbard at Michigan said that he was glad to see them because they are characteristic. But on the other hand, Harold Mulvey said that on the basis of his research, they probably, that basaltic columns would not have been present in the time zone that I was depicting. Which was late, middle to late Pliocene to early Pleistocene.

So I was caught between two of my consultants and I had to make a decision about what to depict in order to show volcanism. So I chose to show volcanic cinder cones, which would have been present at any stage. And that was the way I was able to—because volcanism was, it was extremely important to show volcanism in this landscape. Because it's quite an important thing.

I don't recall that there's any volcanic activity when I visited the Hagerman site prior to painting the mural. Because at that time, the whole area was an air force aerial gunnery range. And just a sagebrush desert adjacent to the fossil exposures over the Snake River. But it's, nevertheless that was part of the story to be shown. Volcanism was an important part that was designated for me to depict. As I say, I've gotten a little bit ahead of myself.

58:37

Santucci: That's okay. A quick question. When you worked, you shift your focus to the Mesozoic dioramas, was that over the course of a year or several years?

Matternes: Well, I had to do a lot of research for it. It would have been in excess of a year. Yes, it would have been probably like two years continuous work. It was a lot of work to be done on this. Yeah, it would have been over two years.

Santucci: And then when you came back to work on the Cenozoic murals, then the first one that you worked on at that point would have been the Hagerman?

Matternes: No, it would have been the Paleocene.

Santucci: The Paleocene. Okay. All right.

Matternes: I'm sorry, the Pliocene. Excuse me.

Santucci: The Pliocene. Okay.

Matternes: Because there was no Paleocene mural if you recall in that hall as originally designed. I had asked Dr. Gazin about that at one point. I said, "Why is there no Paleocene mural?"

He said, "The reason for that is that we don't have that much fossil material to show. We only have some scraps from various deposits of jaws and teeth." But it seems to me that was a big omission. Because this was a transitional stage between the end of the Cretaceous, the Chicxulub event that ended the Mesozoic, and the onset of the Cenozoic. And we start out with something that is well into the Cenozoic, which is to say the Bridger middle Eocene mural. But that does not acknowledge that there was ever a Paleocene. I think we could have had at least a painting, a large picture, not a full-sized mural, showing a number of prominent mammals of the Paleocene to represent that particular period of time. No decision was made.

1:01:15

Santucci: We're working in Theodore Roosevelt National Park that has some pretty good Paleocene exposures and fossils. And it's a very interesting time because of the archaic nature of those mammalian fossils that either later became extinct as a group or gave rise to more modern groups.

Matternes: Yes. Are there Paleocene exposures there at Teddy Roosevelt Memorial?

Santucci: Yes. Both within the Theodore Roosevelt National Park, probably our best exposures of Paleocene in any national park area. But we also have some good exposures in Big Bend National Park in Texas, where we have the continuous sequence of the late Cretaceous, the extinction event, and then we have the Paleocene record preserved at Big Bend.

Matternes: Oh, great. I'm glad to know that. I did not know either of these two facts. Either the North Dakota or the Big Bend.

Santucci: We'll have to get a contract together to have you finish this project. (laughter) So, let's see. So you were able to complete the additional murals. Was the Pleistocene your final mural?

Matternes: Well, when you say Pleistocene, you mean the Alaskan Fairbanks mural?

Santucci: Yes. Yes. Yeah.

Matternes: Yes, that was the final one in the Ice Age Hall. It is.

Santucci: And did you say you—

Matternes: Because I went to Alaska to deal with Dale Guthrie at the University of Alaska. And he took me out onto the tundra. I made a lot of studies there. A lot of photographs. We camped out on the tundra. And it was quite an experience for me. Because it was done during the beginning of the summer, when the sun never sets. And the sun simply went along the edge of the horizon. And at midnight it was about like seven o'clock in the morning here. It upsets your nocturnal/diurnal cycle. And of course it was, we had to fight off hordes of voracious

mosquitoes, which are always a plague on the tundra. But it was quite an experience. I really thoroughly enjoyed the rambles over the tundra with Dale. He pointed out so much.

On one occasion, he showed me a plant. He said, "Jay, come over here and look at this."

I said, "What is it?" It was a low-growing plant that he was pointing out to me.

And he said, "Does that look familiar to you?"

I said, "Well, the leaves look like something from my area."

He said, "Yes, it is. It's a dogwood." But it was growing right on the surface of the ground. He said, "That dogwood is probably as old as many of the trees in your area, which are full-grown trees. But because the winter conditions are so severe and the, technically central Alaska is a desert," he said, "it keeps the vegetation at a very minimum." And that was quite a revelation to me. It was a marvelous adventure for me.

And of course I was able to meet a number of prominent artists, most prominently was William Berry, who was a great, great field naturalist artist. Probably the greatest artist of this particular type ever to have lived. Because he spent most of his life out in the wild in Alaska. And he was making studies of animals directly from the wild animals, on location. I don't know whether you have any of his books, but his drawings and the paintings he made from them are just absolutely superb. No one has ever done anything like that. To my knowledge, at any rate, to have lived so closely with these animals and depicted them right in the field. William Berry. I was immensely impressed with the man, and I still am.

1:06:14

Santucci: One last question about the murals. Did you consult with any paleobotanists regarding the vegetation and plants during your research?

Matternes: Oh, yes, yes. I wrote to [Harry] McGinitie and various other paleobotanists about specific areas. I did, as I said, I used some of the paleobotanists at the Smithsonian as well. A man by the name of Lyman Cornelius Smith. Yes, I did. There was another paleontologist who spent a brief time at the Smithsonian, let's see, I think his name was Clyde [Leo] Hickey. He went to Harvard. He took considerable exception to my depiction of the environment in the Miocene mural. The Miocene, he thought, should have shown more low-growing vegetation than I showed. His criticism of it, and this was subsequent to the finish of the mural, it should have shown more low-growing plants, shrubs and such, rather than what he interpreted as high plains grasslands, such as dominated in the Pliocene mural. That was probably a valid criticism.

And if I were to do it over again, I probably would harken to that particular criticism. But unfortunately, you get only one shot at these things. Which is unfortunate, because if a thing is not strictly accurate, it's seen by so many people and it forms an idea in their minds. (laughs) Do you remember the Shakespearian quote, "The evil that men do lives after them. The good is often interred with their bones." Well, in this case, the mistakes that you make, or whatever shortcomings you have in the work you've done in a public museum tend to live after you.

1:08:53

Santucci: Are there any particular artists, and I think you mentioned a little bit when you were talking about William Berry, were there any artists that inspired you earlier in your career? And did that change over time during your career?

Matternes: Oh, there were many of them. Of course, the great masters of the various schools in Europe. But aside from that, specifically animal artists, yes of course there was Charles Knight. Everyone pays homage to him. He was really the first great paleo-artist who largely really created this field. There were others before him, of course, but he was the one who really brought it into prominence.

But there were other artists who dealt in various fields of animal art. One of those I particularly enjoyed was the paintings of Wilhelm Kuhnert, who was a German artist who lived around the turn of the last century, the late 1880s, well into the twentieth century. He did a lot of painting in Africa. And let's see. There was, of course, another great German artist, Bob, well, I was going to say Bob Coon but no, it was Carl Rungius, Carl Rungius was a great painter, and in the west, in particular. Any painting of a moose that you may have seen was probably a Rungius painting. The moose was one of his great favorites. But he painted many other animals equally well.

But, yes. There were quite a few artists that—Louis Agassiz Fuertes and oh, gosh, I can't quite think of, but, yes. There were quite a few really great men that inspired me. And still do. ore recently, there was another German artist. Manfred Schatz, S-C-H-A-T-Z, who is an excellent painter. He's not a painter of very specific things. He's an action painter, for the most part. And there was Poortvliet, and other German artists. P-O-O-R-T-V-L-I-E-T, Poortvliet. But, gosh, I can't think of, but there were quite a few that did.

There was another Swedish artist, of course, Bruno Liljefors, a great field artist, by the way. He spent a lot of times outdoors and making studies and a great many paintings. He had a recent exhibition at, in Middlebury. Though I was not able to see because I was elsewhere at the time. But Bruno Liljefors was supreme, really. He was a splendid painter. Birds and mammals. And like another colleague of his, Anders Zorn, Z-O-R-N, Anders Zorn. He did not paint animals specifically as Liljefors did, but worked at the same time and was a close colleague.

1:13:21

Santucci: Were there any other paintings that you've done for other museum institutions outside of the Smithsonian?

Matternes: Oh, yes. Yes. I've done murals for the American Museum of Natural History. I don't know whether you've seen in the Hall of Physical Anthropology, there at the American Museum, there's a fossil primate mural that I did showing four different stages in, no, five, five different stages in the evolution of primates through time. It's about twenty feet long and five feet high. It was a mini mural, really, that I did for them, for their hall. I think it's still there. And I did subsequently a *Paranthropus* mural for the American Museum.

And I've done a number of Park Service dioramas. I did one for, I did two of them for the Cape Cod museum. One was a, I think Desoto, his background painting for a diorama. I did not do the foreground, it was done by other people. But there was another of the shoreline at Cape Cod. And I had done a number of drawings for exhibits, trailside museums for various Park Service museums.

1:15:22

Santucci: Do you recall what other national park museums you did artwork for?

Matternes: Yes. You mentioned the Big Bend in Texas. There was a background that I had painted of an Apache Indian confrontation with the blue coats. I did that years ago. It was done in, at a time when Lady Bird Johnson was about to visit that particular museum. And I had to do it in one quick hurry here in Washington. I worked all night on this particular background to get it ready for, and I think it was—no, it was in Texas and I think it was either at El Paso or Big Bend National Park. It was only the background that I was painting. The foreground had been completed and I had to make a transition between the foreground and background. I don't remember the specific, all the specific details of that. I'm really searching my memory. And things don't come to you all of a sudden, you think later oh, gosh, I overlooked something so obviously. (laughter) And you berate yourself for having not thought of it at the time.

Santucci: So there's one more painting that is tied to a national park area. In 2014, Tule Springs Fossil Beds was established as a national monument administered by the National Park Service.

Matternes: Oh, yes.

Santucci: And so you had—

Matternes: Oh, good. I'm glad to hear that that's the case. Yes.

Santucci: And of course you did the painting of the hunting of a camel, a Pleistocene camel.

Matternes: That's right. Yes. I remember that picture. It was done about 1960, '61. I did it for the National Geographic. They were going to publish an article on the excavations at Tule Springs. The person there who was the curator or paleontologist was, let's see, his name escapes me for the moment. Vincent, any rate, they were going to run this article because they were also, the research and exploration committee was financing this particular excavation. And Vince, Vincent was his first name.

Santucci: Are you thinking of Vance Haynes?

Matternes: Vance Haynes. That's correct. Yes. That completely escaped me for the moment. Vance Haynes. Yes. And he was the one who supplied the information that I was to illustrate. And he, for some reason or other, he had envisioned this particular scenario where a camel hunt went bad and the animal could not be subdued with spears. And so it was sort of an ad hoc type of trying to overcome the thing. And it seems to me subsequently that this was a bit fanciful. I can't see why he would have envisioned such an outcome of a hunt. Because it seems to me that primitive hunters would have been quite well organized, and quite efficient in overwhelming

their prey. Where it shows something that has gotten completely out of control (laughs) where the animal—he even mentioned that the camel might have kicked a human attacker from the side, giving a lateral kick of the forelegs. I'm not even sure that a camel could do that. But I had to take his ideas and give them a visual expression. And I'm not sure that I would do it that way again, frankly. His guidance notwithstanding.

1:20:47

Santucci: Did you meet with Vance Haynes in person? Correspond by telephone or through letters?

Matternes: I did meet him on one occasion. But yes, it was subsequently with the, really not dealing with him directly as I was dealing with the art director at that time. Andrew Polinpole at the National Geographic. He was the one who would supply the information, and to whom I was subject for the approval.

Santucci: And so that communication, and then the contract or funding, was directly with the National Geographic.

Matternes: That's correct. Yes.

Santucci: Okay. And where is the original painting? Do you know where that wound up?

Matternes: Well, it was in the annals of the National Geographic, their art department. But I understand that they have sold off, they have divested themselves of a lot of the paintings and illustrations that they had commissioned and had retained the originals, without really telling the original painters what they were doing, giving them an opportunity, if possible, to repurchase the work. That was not one that I would have cared to purchase back. But there were other pictures of mine that I would like to have had if they were divesting themselves if they were eliminating those from their collections. So it's either at the National Geographic or in private hands.

Santucci: Okay. All right. I'll probably check with them and see if we can figure out where yours are. So did National Geographic commission you for other paintings besides the Tule Springs painting?

Matternes: Oh, yes. Subsequently I did a number of illustrations for books in the series on special publications. I worked with Louis Leakey on his little tome on the animals of East Africa. I worked on Jane Goodall's *My Friends the Wild Chimpanzees.* A number of books. I can supply you with a list of them if you'd like. I'll send you a list of them.

Santucci: Oh, thank you. I'd greatly appreciate that.

Matternes: Mm hmm. Okay.

Santucci: Do you still do any work at all? Any artwork?

Matternes: Oh, yes. I'm still painting. I did a big, well, three by six painting for my living room showing a Sioux Indian village around 1880, showing a group of men sitting around being

regaled by an old village member telling stories of how it was in the old days. Showing women in the background doing various bits of work. And showing one woman, for example, curing or scraping freshly killed bison hides and showing the horses close into the village. I did that big painting. I did recently one on Anubis baboons. Yes, I'm still very active.

Santucci: Good to hear.

Matternes: Planning other things right now. (laughs)

1:24:37

Santucci: So if the Park Service would commission you to do a Paleocene mural in the same fashion of the other ones, would that be something that would interest you?

Matternes: Well, at this point, is such a thing a possibility?

Santucci: I don't know. Earlier in our conversation, I kept thinking what a shame that the Paleocene isn't represented in your work. And when you were saying you still work, could we do something? It doesn't have to be an entire scene. It might be one Paleocene form sort as a way to say that we've brought closure to that important work by representing the Paleocene?

Matternes: Well, if that's a possibility, let me know of it and I'll make a vision accordingly. Yes. [unclear] 1:25:43 as a matter of fact.

Santucci: That's an exciting idea. I will follow up with you on that.

Matternes: All right.

Santucci: Thank you. And just to complete the conversation, so are you the recipient of any sorts of awards throughout your career, for your art?

Matternes: I can't think of anything in particular. No, I've not really been an award seeker, for the most part. I don't really, I'm only interested in the work itself. I do not go in for contests. At one point I had done a lot of gallery painting, easel painting for galleries. But that did not satisfy me so much as work in museums. And there were a number of drawbacks to easel paintings. Painting for galleries, a very, very chancy way to make a living.

Santucci: Sure.

Matternes: I'd far rather be commissioned to do specific things. And I've been a fulltime freelance person since 1960.

Santucci: Before I ask you one final question, is there anything that I have forgot to ask you that may in any way be tied to national parks or your work on these paleontology murals from the Cenozoic?

Matternes: I can't think of anything at the moment. If something does occur to me, I will send you an email to that affect.

1:27:40

Santucci: Okay. (laughs) And I'm sure you must have done this in your career, so this is the final question. If you were talking to a group of young student artists and you were giving them your best advice about doing natural history paintings or paleontology paintings, are there any things that you like to share and convey with them?

Matternes: Yes. Really one word. Draw. As I said, drawing is fundamental to anything. Even if you are manipulating on a computer, doing computer graphics, you still have to do the physical act of drawing. Because, as I think I mentioned before, drawing is a way of thinking. It's so extraordinarily fundamental. I think I'm old enough and mature enough to be able to understand a statement by Edgar Degas when he said that good painting is merely good drawing. And he meant something beyond just manipulating a pencil, pen, charcoal, or a paintbrush. It's really an extension, because even the manipulation of color is drawing. It's a very broad concept. But for the most part, ideas are generated from a moving pen, pencil, or brush. Drawing. It's, you can't get away from it.

Santucci: I enjoyed listening to you. As you've expressed yourself so well in your painting, you express yourself well in the things that you have to share.

Matternes: (laughs) Well, not very well anymore. I'm not very articulate anymore.

Santucci: I was happy. (laughs) Well, I want to thank you very much. Not only for your time today and the information you shared in the interview. But also, again, a personal connection that I made with your artwork as a young boy growing up and getting interested in looking at a career and studies in paleontology. So you certainly influenced me. And it's a real honor to speak with you.

Matternes: Well, thank you so much. Yes, it was a pleasure speaking with you. And I will follow up with an email, giving the references that I was not able to supply in this interview.

Santucci: Okay. And I'm intrigued by the idea of being able to work with you on a commission. And possibly if you would be interested in doing one regarding the Paleocene. Or if you want to do something more accurate for Tule Springs. I could see some funding to try to support that, and I'd like to follow up with you on that.

Matternes: All right. For Tule Springs. Okay. Well, that's interesting. All right, Vince. Yes, let's hold that open.

Santucci: Absolutely. Well, thank you again.

Matternes: By the way—

Santucci: Go ahead.

Matternes: —By the way, I'm working with an author on a book for the Indiana Press, Indiana University Press, on the totality of my career. And that is something that is on hold at the

moment because of the pandemic. But I'm hoping that it will be published sometime next year if everything works out. And I'll let you know how that comes out.

Santucci: Oh, I'd look forward to that very much.

Matternes: I've been working with him now for several years. And it's taken a long time because it's something which is sort of ad hoc. It's something that he cannot do fulltime because he has so many other commitments. So I'll let you know more about that when I know something about it.

Santucci: I appreciate that very much. I'll look forward to your email and future communication. And thank you again. You made it a really pleasant day.

Matternes: Well, it was my pleasure.

Santucci: Thank you.

Matternes: All right. Thank you, Vincent.

Santucci: You have a nice day.

Matternes: And you, too.

Santucci: Thanks. Bye-bye.

1:32:59

[END OF INTERVIEW]