National Park Service (NPS) History Collection

NPS Paleontology Program Records (HFCA 2465)
Vincent Santucci's NPS Oral History Project, 2016-2024

Roland Gangloff
November 22, 2022

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

This digital transcript contains updated pagination, formatting, and editing for accessibility and compliance with Section 508 of the Rehabilitation Act. Interview content has not been altered with the exception of omitted PII.

The release form for this interview is on file at the NPS History Collection.

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

Narrator: Roland Gangloff
Interviewer: Vincent Santucci
Date: November 22, 2022
Signed release form: Yes
Transcribed by: Teresa Bergen

Transcript

[START OF INTERVIEW]

Vincent Santucci: All right. Are you ready to start?

Roland Gangloff: Yep.

Santucci: Okay. So today [glitch] second, 2022. My name is Vincent Santucci, the senior paleontologist for the National Park Service paleontology program. Today we are conducting an interview with Dr. Roland Gangloff [glitch] of geology and geophysics at the University of Alaska in Fairbanks. He was also curator of earth science at the University of [glitch] focus of the interview is to examine Dr. Gangloff's work at Yukon-Charley Rivers National Preserve and other National Park Service sites. The interview is being conducted by telephone from Roland's home in California, and I'm in Pennsylvania. So, welcome and thank you. So the first question's an easy one, I hope. When and where were you born?

Gangloff: I was born in East Los Angeles, California.

Santucci: And the date?

Santucci: Very good. And in terms of where you grew up and went to, eventually went to high school, was it in the Los Angeles area?

Gangloff: Yes. I was in the Los Angeles area until I turned eighteen. And then I went on to Orange Coast College in Costa Mesa, California.

Santucci: Okay. And then any experiences up through high school that got you interested in natural history, science, geography, or paleontology?

1:54

Gangloff: Yes. It was an escape from East LA that I engaged in with several good friends. One of them is still a close friend of over 75 years. And we all escaped out into the Mojave Desert to get away from the dangerous streets and the aspects that we disliked in trying to grow up in a tough area.

Santucci: And so you did hiking, camping, that sort of thing?

Gangloff: Hiking, camping. Supposedly rabbit hunting. But that was just an excuse to get out and hike a lot.

Santucci: Okay. (laughs) Very good. Up through high school, any encounters with fossils in the wild?

Gangloff: At that time, focus for me was on becoming an air force pilot. And we went through Edwards Air Force Base a number of times during the Air Armed Forces Day. And got to meet Chuck Yeager and so forth. But yes, I had also escaped from my East LA cradle by taking buses across Los Angeles to the park near what is now University of Southern California. And the great collections of the Pleistocene animals at that museum and at the La Brea Tarpits. So that was my first introduction, really, to paleontology and prehistoric animals that really turned me on.

Santucci: Well, that's pretty exciting to have that in your backyard, per se. Very good. So when you graduated high school, did you go into the military? Did you go off to school? Or what did you after graduation?

Gangloff: Well, that's a very complicated question (laughs) as far as the response goes. Like I said, I had in my family pilots that had fought in the World War II. And I loved flying aircraft. And I did get an appointment to the Air Force Academy. I would have been the second class in the academy. And unfortunately, my eyes kept me out. I only learned that in the middle of an exam, the very end of the physical exam for getting into the academy. That was a crushing blow. But at the same time I decided if I couldn't get in the military as I had planned and do what I wanted in the military, I would go on to college if I could find a way to work my way through college. Because my family was a broken family. My dad and mother had divorced when I was ten. When my sister came along, it was—so I focused on trying to find a way to get to college. And one of my high school buddies got me into track for a while and pointed me towards Orange Coast College. And that was probably one of the greatest favors anybody could have. Because I went to Orange Coast College. And after a mediocre performance in high school, I wasn't turned on by many other classes, except for science and biology, I really, they had a self-standing program there, and the great teachers. And that's when I got turned into a lover of geology in all of its ramifications.

6:12

Santucci: Outstanding. So in terms of those experiences, did you get out into the field and learn field geology through that education?

Gangloff: That first two years was mainly getting your basics done, although I did take a historical geology class and a physical geology class. And I took them from a professor that had graduated from UC Berkeley. And so he encouraged me to think about UC Berkeley. And it was a very interesting coincidence, because I had a crush on a young lady in my zoology class. And she was going to go onto Berkeley in paleontology.

Santucci: Oh, wow.

Gangloff: It's the first time I even thought about paleontology. And I was intrigued to maybe follow her. As it turned out, she never made it and I did.

Santucci: Well, very good. We're glad you did. And so, can you tell us about your education at Berkeley?

Gangloff: Well, it was an extraordinary time for geology/paleontology. I ended up with some of the top mentors in the geosciences at that time. And they were mainly field-oriented. Dr. Durham became my almost, I'd say, my grandfather. (laughs) My academic grandfather. And he became my primary mentor. And he opened so many doors for me. To this day, I just have a hard time understanding how lucky I was to have him in my corner. And then Garniss Curtis was also like that, and he got me into a number of opportunities as I will relate to as far as some of my work in the Death Valley region in the Cambrian. And yeah, it was a great time for paleo. And it was the only school at the time, major school, that had a separate department in paleontology. And even though I had a very strong training in geology, sedimentary geology, I was in a place that lived, breathed, and exhibited paleontology. And had a great introduction to everything from dinosaurs to trilobites.

Santucci: And do you recall what year you started at Berkeley?

9:10

Gangloff: Yes. I started Berkeley in 1958.

Santucci: Wow. That was the year I was born. (laughter)

Gangloff: Well, I was sort of born. I had played football in high school and had been injured. And I recovered. And I thought about playing football at Orange Coast. But got directed over to crew. And I'm so glad I did. Because I had not even known what crew was. And we had a very competitive, one of the best community college crews in the country. And I learned a lot. And it was a wonderful experience and it led me to, it was another reason I went to UC Berkeley, because they had a very famous crew. And when I got to Berkeley, it was the first time everything was going to fall together for our football team. And we went to the Rose Bowl and I got all excited and went out for football the next year. (laughter)

Santucci: Very good. And so during your graduate career, then, what interests and what areas of potential research did you gravitate towards? And was there anybody influential in nurturing you in that direction?

Gangloff: As I said, Dr. Lloyd Durham was really one of my key mentors. And he was very cross-disciplinary in his paleontological work. He had done everything from actually Lambeosaurus in South America to the Cambrian in White Inyo Mountains in Death Valley area. And he had a great diversity of background. And even though he concentrated on fossil echinoderms, he had always wanted to work on a group of [unclear] organisms that only he led me to. And that was archaeocyathids. And the first reef builders in the very early part of the history of evolution of reefs and evolution of multicellular animals.

Santucci: Ed, in terms of archaeocyathids, what is their geologic span during the Paleozoic?

Gangloff: They're principally lower Cambrian, but they got into the middle Cambrian in some numbers, and kind of snuck through a bit maybe into upper, lower, upper Cambrian. Depends on

what part of the world you're looking at and what the controls are on its stratigraphy. But they're principally a lower Cambrian organism. And they flourished all over the world. It's an amazing record. And they had some lineages that gotten through and are still surviving in very special environments in reefs today. But the true archaeocyathids are completely extinct. They like birds for the dinosaurs, there's a lineage that got through and still survives in reef environments.

Santucci: And what drew you towards this group?

Gangloff: It was Durham again. I went out in the field with him several times. And he introduced me to some localities in the White Inyo Mountains. And I was just, that was amazing. I had been a field assistant with Ed McKee in Magruder Mountain area, not too far outside of the northern extremes, Death Valley. Death Valley has always been a fascination for me. And to be able to work right at the edge of it and actually end up only working on organisms that also had an important record in parts of Death Valley was something else. So after I'd spent a field season with Ed McKee mapping Magruder Mountain area to the Silver Peak area and really seeing all these unbelievable concentrations of archaeocyathids with other organisms and building small buildups in reefs. At the time, didn't understand that they really built true reefs. Most people had felt that they'd build these little buildups called bioherms. There were many of those. But there were also these pretty massive limestones that were just chockfull of archaeocyathids. And after seeing that, talked to Dr. Durham. And he said, "Well you know, that's something I wanted to follow up. But if you'd like to study them, go ahead. I'd love to see you do it". And that's how I got into dealing with archaeocyathids and the earliest reef builders.

14:39

Santucci: And so your initial work was outside of Death Valley National Park. And I assume you made collections that went to Berkeley?

Gangloff: Yes. I did a master's thesis in the White Inyo Mountains. And in the [unclear] area I extended that for my PhD. And expanded all the way up to Austin, Nevada and all the way down into parts of Death Valley.

Santucci: And what areas of Death Valley did you have the opportunity to work?

Gangloff: Well, I followed the advice of a United States Geological Survey colleague, John Stewart, who had worked in the area for the National Park Service, I think it was, as a USGS field geologist. And he had come across a couple of localities, a couple of evidences of archaeocyathids, along with other Cambrian organisms. And he put me onto them and said, "You ought to check these out." And I did. And included both in my doctoral dissertation, both at Echo Canyon and Daylight Pass area.

Santucci: Nice. Did you have interactions with the National Park Service staff during that time?

Gangloff: I did have some. I had to get permission to do the work in both places. And I'd gone to the headquarters and talked to them. They were very welcoming. They couldn't give me, at that time they didn't have a lot of budget for such things, so they said, "We'd love to help you more, but we certainly love to see anything that you discover. And we hope that you understand that anything you collect will ultimately have to be reposited either in the national [unclear] in

the Smithsonian or in a proper venue." And of course I was working at the University of California's Museum of Paleontology. So, which some of those collections and collections that Durham had made and others now reside.

Santucci: Was there anything of particular interest that you recall about the specimens from Echo Canyon or Daylight Pass?

Gangloff: Yeah. It sort of set the, shall we say the tenor of my research for the rest of my career. And let me tell you what I mean by that. I was taken back at how much evidence I saw. Because most people that hadn't seen it, there were a lot of people, but like Stewart and a couple of others, they'd only barely scratched the surface. And I was able to collect much more. But at the same time, I felt that a lot more work should be done. Because I also discovered a couple more site that the organism that I had first discovered in the White Inyos, and my mentor Wyatt Durham had received international fame for, and that was a group of echinoderms, relatives of starfish. And it was one of the early experiments called helicoplacus. And we discovered it in the White Inyos, and here it was in the Daylight Pass area. And I hadn't heard anybody that, of anybody that had found it there before.

18:32

Santucci: Was it in association with the archaeocyathids, or were they separate?

Gangloff: It's usually in more, rather than in carbonate-dominated sediments, its mostly in shales and more shall we say dirty units. (laughter) But it range a bit into some combinations of both carbonate, small carbonate buildups in shales, in both White Inyos and it looked like that's what was the situation in Daylight Pass.

Santucci: Very good. And so what was the focus or title of your dissertation?

Gangloff: My dissertation actual title, just happen to have it here, "Archaeocyathids of the Central and Southwestern Great Basin, California and Nevada."

Santucci: And it includes Death Valley National Park as part of that, I assume.

Gangloff: Yes.

Santucci: Okay.

Gangloff: Daylight Pass and Echo Canyon.

Santucci: Outstanding. And so what year was your doctorate awarded?

Gangloff: Nineteen-seventy-five.

Santucci: Okay. Outstanding. During your time, up till the completion of your dissertation, did you have any opportunities to get out into the field and visit other localities within Death Valley National Park?

Gangloff: Well, I've actually been to many parts of Death Valley looking for outcrops of Cambrian and Upper Pre-Cambrian units. Attended a couple of field conferences put together in Death Valley for the Pre-Cambrian, uppermost Pre-Cambrian. I was fortunate that I got into the Cambrian and upper-most Pre-Cambrian as part of the studying of the history of this earth because it was, had become very, very popular. And people at UCLA, Davis, Berkeley, and some parts of eastern schools had all focused on trying to understand more about the Cambrian, understanding how important it was to the history of life. And you may have heard of the great Cambrian explosion of life, as some people use that terminology. But yes, it was a critical time in experimentation. And of course the Berger shale in Canada is a very fine example of some of the experimentation that went on with multicellular animals and multicellular plants. And the record just sucked in all people from all over the world. And like I said, it was a great time for me to do that. And I ended up having one of my top mentors being in France and another couple being in the Soviet Union. Where they were doing a tremendous amount of work with the same organisms and the related reef developments.

22:10

Santucci: And so had you visited Wolcott's Waucoba series in Death Valley?

Gangloff: I included that in, yes, in my PhD dissertation.

Santucci: Okay.

Gangloff: I included measuring sections in there and collecting in, I had the collections that are much more detailed than anybody's ever collected at Waucoba Springs area. But I went beyond Waucoba.

Santucci: And from your perspective, what is significant about the Waucoba Springs area?

Gangloff: Well, it's part of a major reef complex that developed in this part of North America. And most people don't appreciate that. And Death Valley is part of that. And after reading your paper with Tony Fiorello on how important it is to connect national park areas with the total ecosystem, ancient ecosystems that existed sometimes outside the boundaries of the park, I totally agree that sometimes the Park Service in the early history of it has kind of had this closed mental picture of things. And I can understand it, given level of understanding in general within the geosciences at the time. But we've greatly expanded beyond that now. And I think it does much more for our histories and the fascinating parts of these parks if we do relate them to how they connect into the more regional pictures.

Santucci: Very good. Thank you. So as far as these early reef builders, the archaeocyathids what can you tell us about them as organisms? Were they shallow water indicators? Or what environments would you interpret those as living in?

Gangloff: Well, I think that my interpretation along with my colleagues' has pretty much concentrated on pretty solid evidence. They were principally shallow water, like many of the reef corals. And they even, eventually, sort of partnered with some of the earliest [unclear] and coral-like animals that were developing as well in the later part of the Cambrian. And they have good evidence. And I published a paper on my work and the work of Steve Rowland, who was a

professor at the University of Nevada, Las Vegas. He was a graduate student at the time and I was his mentor for a while. And we both visited sites in Siberia after studying Great Basin, which included Death Valley. And we were both convinced along with other colleagues that there was a story that was much more interesting about this part of the record in the lower Cambrian that I think today if I was out there still working diligently I would be pushing hard for looking at the entire what we call the Cordilleran of mountain system today. And it of course much of it was ocean floor and shallow ocean floor in time we're talking about, the Cambrian, and uppermost pre-Cambrian. And I'm convinced that if we pull this all together in a cogent way and with enough people working on it, we would probably be able to establish that there was a major reef system that extended from say, Southern Arizona all the way up to the north slope of Alaska. (laughs)

27:01

Santucci: And this was an extensive Cambrian platform.

Gangloff: Yes. It was truly a platform. And it was complex. And like I said, it was an environment that many other organisms, multicellular organisms, were developing. And many of them were very fascinating. I published my colleagues several of them. One called tabulaconus, which is like a proto-coral in some ways. Nothing exactly like it living today, but a very interesting experiment. Quite abundant. And I'm sure there's a good chance of finding it in Death Valley somewhere, as well as it's so abundant in the White Inyo area, and Waucoba Springs area. I'd be very surprised if it wasn't at least part of the history of the Death Valley area.

The problem with the Death Valley area as far as the[carbonates go, it's somewhere in the transition from the very edge of the shelf with lots of sediment in-flushes from the mountains, the mountains that were developing at the time – or the highlands, anyway. And the more carbon-y happy, shall we say, part of the ocean with all these experiments with archaeocyathids and tabulaconus and various other organisms that were becoming part of the shallow reef development. And I call it a shallow reef because we have evidence that experiments with blue green, well, organisms that we would say maybe are blue-green, we don't actually have exactly the same organisms living today. But they're similar to this and they're all found intimately developed in the reef complexes in the carbonate builds with archaeocyathids and other organisms. So it looks like the first steps towards symbiosis. The needing sunlight to be healthy. And being part of the physiology of these reefs, if you want to call it that, an important part of that environment. Working to capture sunlight and to form cohesiveness between the main organisms like the archaeocyathids to form wave resistance and happy reefs, shall we say.

Santucci: Very good. So, you completed your PhD and somewhere along the way you wound up heading north to Alaska. Can you explain how that came about?

30:17

Gangloff: (laughs) Sort of like the rest of my history. Which I look back and say, how can I be so fortunate? It came out of the fact that again, being at UC Berkeley, some of my fellow

students went on to other positions. And one of them that was a very close friend and became a very close colleagues was Carol Wagner Ellison. And she went on to University of Alaska Fairbanks with her husband, who had been another student friend of mine. And when they decided to retire around 1985, they thought of me as their best choice to take over their position. And I'm very grateful that they did. Because I did apply. And under their encouragement. And was offered the position. There were several other colleagues that had tried, who were also vying for the position. And I'm the one they decided upon. And that's how I got there.

Santucci: So prior to getting offered the position in Fairbanks, they also invited you to come up around 1978 timeframe, is that correct?

Gangloff: Yes. I had done some work for Carol in the uppermost Pre-Cambrian. There are a number of papers that she published on, as part of the study of what we now call the Yukon-Charley River Park and Preserve in east central Alaska. And I had been helicoptered in with a field assistant of hers to measure section and to collect for her to extend some of the work that she had done and published upon. And the first organisms in the Uppermost Pre-Cambrian that had been discovered in the area. And when I first got somewhat familiar with the area that I had no idea I was going to end up in for a part of my career. (laughs)

Santucci: So you wound up in Alaska for your fortieth birthday. Is that correct?

Gangloff: That's right. We celebrated it at Carol and Dick Ellison's home in Fairbanks after I came out of the field.

Santucci: Very good. And so did you get actually into Yukon-Charley area, what is today part of the national park in 1978 or shortly after?

Gangloff: Well, I only got into it (laughs) because we had driven to Eagle as our base. And we had picked up our canoe, our Grummond canoe with all of our gear and had paddled our way to the Tatonduk. And we worked along parts of the Tatonduk, which I eventually came back to for my, to follow up even after my doctoral dissertation. And it was a real revelation to me again at how much was there and how I had from my experience in the Great Basin, including parts of Death Valley, had seen, or you might say interpreted, things quite differently than they were interpreting them. They were again weren't seeing the bigger picture. And what I saw was pieces of a platform breaking off and sliding down a steep slope, submarine slope. And then being buried in sediment. And they thought those were buildups in place. But everything told me they weren't when I first saw them. But I didn't do it, I wasn't focusing on that for her. So when the helicopter picked me up and my field assistant and took us up above the Yukon River and all the way into Canada, just across the boundary into Canada, above the, along the Tatonduk course to do work for her, I didn't have enough time to really collect and map and study in great detail. I had some of the maps that a graduate student had worked on but I was determined that one way or the other, I wanted to get back there and really take a look and see if my hypothesis was backed up by more field evidence.

Santucci: What's your general impressions about the landscape of the Yukon-Charley River area?

36:05

Gangloff: You mean back in the Cambrian? (laughter)

Santucci: Well, yes. And modern.

Gangloff: Well, the modern is, it's challenging. These are rugged slopes. Very, and you don't have to get very far from the Yukon River to get into some pretty remote country where only helicopters can service you and where only, where you can communicate with anybody is with satellite radio. And we didn't have satellite radio at the time. So if we didn't see straight line contact by handheld walkie-talkies, we were essentially on our own. And we almost did get left after a big storm because the original helicopter crew from BLM had to go somewhere else. And Carol Allison hired a private outfit that she had worked with. And he didn't know exactly where we were. She didn't properly place them on the map where we had been left off and had worked. And so (laughs) we almost got left out there to hike some 50 to 60 miles down the Tatonduk to the Yukon River and then to our camp and get where we had our supplies and our canoe. But that wasn't something we were looking forward to, but we could have done it if we had to. We were in good shape and we knew where we were. But thankfully we didn't have to do that. We did the helicopter finally found us. And we were rescued and taken back to our camp.

Santucci: So during those early years, were you doing field work on behalf of Carol Allison? Or were you doing your own work?

Gangloff: You know, the first part that we're talking about with Carol was with her. And she was working with the United States Geological Survey, which was working with the Park Service. So it was a chain of (laughs) chain of relationships, shall we say.

Santucci: Sure. And so something I'll come back to momentarily. But what's interesting is you were there during a period between when it was not Park Service land and then when it was first established as part of the National Park Service. That occurred, was it 1981 or 1980, period?

Gangloff: Yeah. As far as I know, I think it was a preserve for a while. Or at least it was being outlined and I think, I don't know all the details because that wasn't part of my interest at the time. (laughs)

Santucci: Right.

Gangloff: But from what I understood, yeah, it had been designated by Congress as an area to further look at and possibly preserve. So it was into the 1980s that it finally became a national park and preserve. And they still call it a preserve today. But you know more about that than I would know.

Santucci: Sure. So it lists here online that it was actually established December 1, 1978.

Gangloff: That sounds about right.

Santucci: Do you recall traveling into the area? If there were any local perspectives, either in favor or against a National Park Service presence at Yukon-Charley River?

40:04

Gangloff: I never heard anything negative from any of the people I worked with out of Eagle. Sarge was, if you've ever read *Coming into the Country,* you would know all these characters that we ended up dealing with. And had helped us with logistics and were very encouraging. And when they knew that we were doing this kind of work and that we, they already knew that there was consideration for putting some of this area in, making it a national park and preserve, we never heard anything negative about that. So I really can't comment much on that. I know that USGS personnel, they would only say as long as our working relationship stays positive, we're happy.

Santucci: And so your first ventures into Alaska were in 1978. And then the Allisons then recruited you to step in behind them. And you were hired in 1986, is that correct?

Gangloff: That's correct.

Santucci: But you actually started in 1987?

Gangloff: Yes because I couldn't begin in '86 because the price for crude plummeted.

Santucci: Okay. (laughs)

Gangloff: You know, it's classic in Alaska. As oil goes, so goes you.

Santucci: Yes. So would you characterize the work that you did in Yukon-Charley Rivers area prior to your being hired in Fairbanks, was that largely the work supporting interests of Carol Allison? Or was it a mixture of things that you wanted to do, along with work that she had interest in doing?

Gangloff: It was mainly her interest [unclear] 42:18 on her work there. And meeting [unclear] and Brabb. And they became colleagues later. They had done the pioneer work there, following the earliest work. And there's a whole series of USGS workers that covered that area and were evaluating Alaska. Finally. And it was a very dynamic time and a very stimulating time. It was very easy to get cooperation with the USGS there because the people that were doing the work like I've always tried to be, were very inclusive. And realized that science is an effort, is a communal effort. It's not individuals, grand individuals who sort of do everything. My, all my experience was that working with others, they always had something to contribute. And you always learned from them. And to me, that's the way science should be done, and good science is done.

Santucci: Did you get the opportunity to do field work with Brabb and [unclear]?

Gangloff: I actually met with them but never, never in the field. By that time they were at Menlo Park and doing all kinds of other work along the San Andreas Fault and so forth in the Bay Area, and were no longer working in Alaska. But they were always there to send on their publications, and always there to help me whenever I had questions. But never got to, never got to be in the field with them. That would have been nice.

Santucci: Okay, good. Anything else about the period prior to being hired on at the University of Alaska in Fairbanks?

44:38

Gangloff: Like I said, I got really a good understanding of the larger picture about what archeo-science presented in respect to reef building and developing sort of some of the pathways that ultimately led to the coral reefs that we presently enjoy and unfortunately are being hit hard. But I know they'll survive. We are now finding some at greater depth that are surviving quite nicely. But it's just, yeah. It was a time that I really, really appreciated. And that was because I had been a stream scientist for the National Academy of Sciences in Washington, to be the stream scientist in the Soviet Union in 1977 for a period of seven months. And that was more to my Soviet mentors [unclear] Rozanov and Nina [unclear] both were just great facilitators in the field. And I got to get into areas that no other westerners had ever been. And got to see exceptional large reef structures that had been published upon, but the publishing didn't come near appreciating what they represented. And that really opened my eyes. And that's when follow-up group, Steve Rowland and I published a paper that received 1988 Society of Sedimentary Geology's best paper. It goes into some of the detailed information about how these reefs functioned, as we can see from the present deposits.

Santucci: And, let's see. And how did Steve get involved in that project?

Gangloff: He was a graduate student at Santa Cruz. As well as a high school teacher. (laughs) And that's how I hooked up with him at Berkeley. He came to a conference at Berkeley. And we started cooperating immediately. And he, I sort of took him under my wing because he had no one to really work with it. He became very interested in archeo-science. So I took him and a couple of other graduate students from University of California, Santa Cruz. And introduced them to White-Inyo area and encouraged them to go into Death Valley area and take a look at some of the places we'd been. And that's how we got connected.

Santucci: Very good. So upon arriving in Alaska, working for the University of Alaska in Fairbanks, what were your responsibilities? I mean, did you have teaching responsibilities as well as museum management responsibilities?

Gangloff: All of the above. Yeah, it was, you know the old saying: Never try to serve two masters. (laughter) I often think about hmm, I should have listened more carefully on that one. Yeah, I was 75% museum and I was head of a department, a department that demanded a lot of attention. It had not been dealt with as well as it should have been by the previous people. And that included Carol Allison. But that wasn't her interest, and she wasn't being paid to do anything beyond her research. And here was this huge collection of Pleistocene and any other level within the stratigraphic column, as well as Cambrian and stuff from national parks and all over Alaska. And it was a collection that had to be not only redone and re-numbered and whatever. I was responsible for getting the money to not only do my research, which was part of my contract, I was to meet some of the demands of this collection, this very important collection that needed a lot of work.

And that plus one corner of my (laughs) assignment was to be a professor in the Department of Geology/Geophysics, and to teach at least one if not two to three courses per semester. And that's when I found out that the rules had changed on me and I would get tenure through the department, not through the museum. And so one quarter was basically jerking

around three quarters of time. So it was very challenging. I'm proud that I was able to survive and actually make progress and get some substantial work done, and some work that I was very proud of, and still have been proud of. And pulled in people from outside that had never been involved. That will always be one of my best feelings about that situation which could have been a disaster. (laughs)

Santucci: Sure. So in terms of your teaching responsibilities in the department, did you also mentor any graduate students?

51:20

Gangloff: Yes, several graduate students. Some of them went on, and some of them took up other professions, like teaching, which was just fine with me. I worked a lot with teachers in Alaska, as I had done in Oakland when I was teaching at Merritt College. Yeah, and I still have contact with a number of them. It was – Léo Laporte was the professor at Santa Cruz that I worked with, and a number of his students, including Steve Rowland. So that was a very, I considered, will always consider, a very, very wonderful part of that experience.

Santucci: And then the responsibilities of, at the museum. Is there one or two things that you're most proud of in terms of contributions during your tenure?

Gangloff: Yes. As I said, I tried to be, do the job that was my description. And that was, I wasn't just there to be a paleontologist, although there are outstanding collections that I had to deal with. And fortunately I had a broad and fairly deep, excellent education at UC Berkeley with both geology and paleo. And like I said before, I had some great mentors, whether it was Charlie Gilbert or Garniss Curtis or Wyatt Durham or Gregory in vertebrae, I had a solid background in vertebrae paleontology and zoology. As well as invertebrate. So I could take on some parts of that collection where it had been neglected. And there was Pleistocene collections that for instance of mammoth ivory that had been just sort of piled up, taking up room. And some of it was really not worth keeping. But some of it was solid for research that I sent on to Michigan and other places where I had colleagues, and helped them do some work that they had always wanted to do.

So I was able to let it be known that I was willing to work with anybody that these [idiom?] or collections might help. And that included the gold collection. And I developed one of the best gold collections. There was a gold collection already, but I was able to add to it because of the good publicity that I had gotten from my other work. So I'm proud of some of the, there's a couple of specimens that are world-class specimens that are in our vault there at the museum.

And I worked with a number of my colleagues there that worked with teachers and so forth. And so I was awarded several awards for my work with, like the Caribou Award for my work with teachers and people [that?] the museum that were important to public contacts. So it was, all in all it was a career that went beyond just my specialty and specialties. And I always will be proud of that. And also was involved in getting the plans for the new expansion of the museum, which turned out to be a very fine expansion. So I was very fortunate. I went there at a time when some real things were happening. And some things that touched a lot of my areas of

expertise and experience. And love. So, you can't ask for more than that when you have a career, that's for sure. A career that went from East LA to Siberia.

Santucci: (laughs) I like that. A very Park Service-specific question. Do you recall dealing with the National Park Service at all regarding paleontological collections in Fairbanks?

56:00

Gangloff: Oh, yes. (laughs) I got involved with Denali. Again, I saw that geosciences had been neglected quite badly in both Denali and Katmai. And of course that's where I finally met you was at Katmai and Brooks camp, and got involved with that. And I still have regrets that I wasn't young enough to really follow up some of the, we saw from the air, and I still think are high potentials in the Katmai park. And no one's ever followed those up. So maybe someday they will. But I see, just like I saw the great potential on the north slope, and we only have given, we have the greatest well, the greatest representation of the paleontology of north slope Alaska and other parts of Alaska, and especially dinosaurs. And that whole story of dinosaurs in the Arctic, in the paleo Arctic. There's so much more to be done. And we never got to some of the rivers farther east. So, you know, part of that is the Denali area, it was a park that was geologically, just like Katmai, was geologically foundation, though, you know? And very little geology had been done, really, until about halfway through my career in Alaska. And I worked, I finally worked with a geologist that was trying to do a lot of stuff that needed to be done. And we did at least set the stage for further work. And further work has been done by some of my colleagues at University of Alaska as well. I may be running out of juice here.

Santucci: Okay. No, you're doing great. So, do you need a break, or—

Gangloff: Well, I'm just thinking that maybe my phone is starting to – well, no, we still have juice.

Santucci: Okay.

Gangloff: Go ahead.

Santucci: I thought you were talking about your own personal energy level. (laughs)

Gangloff: No, the phone. (laughs) We used to have a landline, but it was such a terrible service that we went to all cell phones. But they have their limits. (laughs)

Santucci: Okay. Did you view yourself as a regional repository for the national parks of Alaska? Did you serve that role?

Gangloff: Uh, yes, we did. But we encouraged, at Denali, we encouraged them to start developing some kind of exhibits. And keeping some of the materials there. And as time would go one, hopefully they would develop much more of a museum section that would, for visitors. I mean, there's a lot of the story of that park that just still needs to be done. And there's plenty of potential for not only the dinosaur trackways and other materials, but we know also that just outside that park, the state park that borders on Denali has similar materials. So there's a reasonable area that could be a big picture. That could be focused on in the park for visitors. And

certainly I would hope that my successor you see at University of Alaska and the museum would, Druckenmiller, would work with them eventually in trying to further that work. I think they've just scratched the surface. I felt that after a couple of field seasons there. And I was very pleased at the cooperation that we got from the Park Service there. When I worked there.

1:00:28

Santucci: So, being seated in the center of Alaska then of course you were surrounded by tremendous opportunities for collecting Pleistocene megafauna. And of course the remarkable specimens that were preserved with soft tissues in the permafrost, had you had any opportunities to actually observe any of those in the field and do collecting of some of these remains that were preserved in the permafrost?

Gangloff: The first part, I missed where you were talking about.

Santucci: Oh, okay. So for example, the specimen Blue Babe that's on exhibit at the Museum of the North, did that specimen arrive prior to your arrival at the museum?

Gangloff: Yes, but I was charged with working with the exhibits people very early in my time there. And we put together and redid the Pleistocene exhibits. But I also, working with my Canadian colleagues, which have always been very, very cooperative. And one of the great parts of my career is working with people like Currie, who are just – even though we might even differ on some of our interpretations, we work together very well. And he arranged for us to have the skull for the exhibit on dinosaurs, the Pachyrhinosaurus. And wouldn't take any money for it. Said, "If you can get it shipped to your place, I'll make sure it gets shipped to you." And that was always the kind of thing that I found with my Canadian colleagues. And when we found that it went to the Yukon area and found the first dinosaur tracks and first direct evidence of dinosaurs in the Yukon Territory, again it was because we had such great cooperation and great help from our colleagues, our Canadian colleagues. So yes, we redid that. And I also went to the American Museum of Natural History with my assistant. And we, there was a big collection and it's still there at the American Museum that's – heavens, supposed to come back. And we negotiated it and then it fell apart for various reasons. I'm not going to go into all that. But we did get the juvenile face and trunk of the juvenile mammoth. And then put into the exhibit that had never been there. So we actually got the actual specimen from American Museum. And we got some, made some casts of it through UC Berkeley. And so, yeah, we completely redid under my direction the exhibit on Pleistocene. And that included Blue Babe.

Santucci: Outstanding. And I understand that there are collections of other mammals that have soft tissues that are preserved from permafrost in Alaska.

Gangloff: Oh, yeah.

Santucci: Was there anything of interest that you'd want to share about those collections?

1:04:11

Gangloff: Well yes, as part of that Pleistocene collection, I said well you know, one of the things that's a fascinating story is the preservation of ground squirrels that became mummified in the

permafrost and preserved. And that was included, we included that in that exhibit. So most people like to see Blue Babe. But at the same time we have additional exhibits that talks about some of the other organisms that are buried in the permafrost. So that's on exhibit there as well. So, yeah, I tried to bring in the perspective that yes, sometimes we get fascinated by the big stuff. But some of the smaller stuff sometimes gives us more of a detailed history of the past than the big stuff.

Santucci: Very good. So I wanted to reach back out and talk a little bit more about Yukon-Charley River. So, let's see. You had a colleague by the name of Dirk Bodnar.

Gangloff: Yes.

Santucci: Can you tell me about him and your relationship?

Gangloff: Good old Dirk, yes. Dirk was a graduate student of the department, of geology/geosciences. But he was also supported to do some fieldwork with Carol Allison and Dick Allison, including work in the Yukon-Charley River area. And he became my assistant my first trip there to Yukon-Charley River. And Dirk got his, finished his degree. I think he got a master's. And went to work for oil companies. He, we still are in contact. He has a place in California as well as in Alaska. His family, he's third generation – second generation Alaskan. And he has left the oil companies as a consultant on certain aspects of the oil extraction. So he's doing quite well. (laughs)

Santucci: Excellent. And so you both did fieldwork in Yukon-Charley area?

Gangloff: Yeah. He was with me when we got rescued by the helicopter. (Santucci laughs) And at that time, he was the one that carried the rifle. And he definitely knew much more about the environment and the area than I did. And so I was very dependent upon him, and I learned a lot from him.

Santucci: Very good. How many years did you get out in the field with him at Yukon-Charley?

Gangloff: It was only the one year. Seventy-eight.

Santucci: Seventy-eight. Okay.

Gangloff: Yeah.

Santucci: And so can you tell me a little about that, a little bit more about that particular field experience? And did you make collections of archaeocyathids during that time?

1:07:41

Gangloff: Yes. Systematic collections as well as, you know, photographs and mapped some of the details that hadn't been mapped earlier of the outcrops and their form. And then communicated with some Canadian colleagues that were working at the upper end of the edge of the shelf. And they had come to the conclusion that they were mainly working on other Cambrian organisms, like trilobites and so forth. But they had come to the same conclusion that I

was coming to. And that was that we were really dealing with a major platform reef complex. And that that carbonate platform had been a very important part of the Cambrian, and probably started in the upper-most pre-Cambrian. And Carol Allison who had worked, as I mentioned, was there, working on the upper pre-Cambrian. She published a series of papers on some very early organisms that had never been described from the neo-Proterozoic to the very late pre-Cambrian. So, yeah. We, Dirk and I collected, or I collected following up after Dirk a number of localities that we had outlined, and we felt were critical to understanding the context. I've always prided myself on not just studying the organisms, but because of my background in geology and sedimentology and so forth, I've always looked at things in the context of the environment, the total environment, not just focused on the organisms themselves. And I was quickly realizing that we were dealing with, as I said, pieces of a carbonate platform that broke off for whatever reason, maybe during storms, and had slid down a fairly steep detrital slope into deeper ocean water. And that these were not build-ups in place, but were really pieces of shallow water platforms and reef development. It was now what we'd say are out of place where we find them. And I also realized that in my work, in my doctoral dissertation in the Great Basin, in the northern part of that study, again came across a situation where some of my colleagues from University of Washington State had determined or at least felt they had a good hypothesis that the same thing had happened there, and had been misinterpreted by USGS and other geologists. And when I did my study there and collected and concluded that my doctoral dissertation, I agreed with them. Everything I saw in the field told me it was exactly the same situation. And that even some of the other deposits to the north that were famous trilobite deposits had also formed in the same way. So, I think we have a number of bits and pieces of a large carbonate platform development in the lower Cambrian that most people did not, most early geologists and paleontologists didn't appreciate.

Santucci: And so having worked in Death Valley and Great Basin area, and also in Alaska and Yukon-Charley with these extensive archaeocyathid units, did you come up with any sort of paleo-geographic implications associated with these lifeforms?

1:12:02

Gangloff: Yes. I did. I published in my dissertation, it's in my dissertation which hasn't been published, but Steve Rowland went on with it with some of his graduate students, and followed up what he and I had hypothesized. And he's published on that. And they have come up with a model that includes the Yukon-Charley Rivers area in Alaska. And quite an interesting hypothesis as to its extent. And across the country even as far east as what we now call parts of the Great Lakes. And they've actually postulated direction of the primary winds and all that kind of stuff and published on it. And there's been papers that have also been published specifically on the Tatonduk and the surrounding areas and the geology as well as all of the paleontology.

In fact, there's a paper. I don't see it here. I don't have all my papers with me. Some of them, we moved a year and a half ago. And I still have a box up in my attic, which I need to get out. (laughs) And as I told you, I'll be glad to send out anything that you don't have in your archives that I do have. I'd love to see it get someplace where it may eventually be an important part of this picture. And anybody that follows it up.

Santucci: Well, that's much appreciated. I'll follow up with you on that. We'd like to get that archived into the National Park Service Paleontology Archives.

Gangloff: Yeah. I have all of Carol Allison's papers on the uppermost pre-Cambrian organisms that she's published on. And like I said, there are a number of fairly recent papers that were done by the USGS. One real good synthesis on the geology that I would hope the Park Service would already have. I'd have to, it's up in my box that I eventually have to get up in the attic and go through. But like I said, I'll be glad to send on anything I feel is cogent. And if you have, if it turns out you have duplicates of it, then you may do what you want with it.

Santucci: (laughs) Okay. So, if you had another lifetime to dedicate to archaeocyathids, what do you think are the big questions that still need to be addressed?

Gangloff: Well, first of all, I did start to publish on my work on the Tatonduk and Yukon-Charley River area, collections there that I realized the bones had direct implications as to connection with the Soviet Far East, as we called it then. The areas of the extreme eastern Siberia, and work that's been done subsequently by the Russians. I had hoped to publish that. I had started, had gotten the spin sections and made determinations and had put together graphics and this kind of thing. But the dinosaur work just took over. As I said, all the excitement about the pre-Cambrian and Cambrian kind of died all over the country. (laughs) Just started limping along. I shouldn't say died, but is limping along. Had nowhere near as many professors and as many programs. And even some of the universities got rid of their collections. And so dinosaurs just took over. And in a sense, I'm happy about that. Because it was an area that I had never thought I would be contributing to. And I have contributed to new taxa as well as new interpretations of this. Plus I said very clearly that we just barely scratched the surface in the circum-Arctic. And unfortunately my Canadian colleagues aren't really following that up, either. They're concentrating on places like China, which is fine. But we just need more people to really start doing some of this work. We just barely gotten started.

And I think that's true of the Yukon-Charley River area. And its context with this, as I've said within a much more important regional picture and environmental picture. And you've got some real problems with structures, like the Tintina Fault and so forth, which can really mess up things for field geologists sometimes. We found the first, there are some dinosaurs in Yukon Territory. The deposits we found them in had been mapped by the field geologists, some very good field geologists, but this is a very complex faulting area. They had misidentified the age. And we were very happy if that age had stuck because we would have had the only Paleogene dinosaurs in the world. (laughs) But as it turned out, they went back and looked much more carefully. And they realized that we were right, it was upper Cretaceous dinosaurs, not the earliest part of the Cenozoic. (laughs)

So sometimes paleontologists actually correct field geologists when it comes to their work. Even when they're good field geologists.

Santucci: And so as far as the archaeocyathid collections from Yukon-Charley River, would they primarily be at UC Berkeley and Fairbanks? Or would there be some at the Smithsonian as well?

1:19:02

Gangloff: Let's see. The Smithsonian does have a collection. And I'm trying to think. It mainly came from Battle Mountain areas. And Francois Debrenne and [Jean] Lafuste, we published a paper on tabulaconus. And we also published a paper on the identification, modern identification of the archaeocyathids from there. But it wasn't from Yukon-Charley River, unfortunately. So there has to, there are some collections in the Smithsonian US national museum. But most of them are from, I don't know of any that are from Death Valley. But I would be surprised if there weren't some. The collections were not in good shape when I went through them just before I left in 1977 for the Soviet Union. I stopped off to work at the Smithsonian with a colleague, former UC Berkeley student, Mike Taylor. And I was shocked at how poorly they are, the collections of Wolcott. I had this in my mind that they would be considered gold, since he did that pioneer work in Waucoba Springs and other parts of Silver Peak area and so forth. But I don't think any of them ever came, I never found any that actually came from Death Valley area.

But I just think that we need to just re, shall we say, re-ignite the interest in the pre-Cambrian and Cambrian and early Paleozoic. There's much to be done. And much to be done in Death Valley beyond even my work, certainly, and the work of some of my colleagues, with the rest of this stratigraphic column. I think there's a rich history there that is not well, shall we say, well-displayed or well-demonstrated to the general public yet. And you and I talked about that to some degree after the meetings in Las Vegas.

Santucci: What year did you retire?

Gangloff: I retired, officially retired in 2005. No, I'm sorry. (laughs) No, 2003. But I did continue to do fieldwork with Tony Fiorella and others through 2005. We were working on an NSF grant to continue some of the work. And that's been published on. And Tony has followed some of that up subsequently. So, yeah, 2003 was the actual official retirement.

Santucci: And now you reside in Sonoma?

Gangloff: In beautiful Sonoma. Where the best wine is produced and a heck of a lot better place than most people would imagine that go to Napa.

Santucci: Any final thoughts in terms of your career, your work in Alaska, your work in national parks?

Gangloff: Well, I would have to say that I'm sorry, like I told you, I mentioned earlier, I certainly would love to have been able to follow up the work at Katmai. I just really feel that there's so much more potential there that just really hasn't been appreciated yet. And dinosaur-wise. And there's certainly more can be done in paleontological studies in Yukon-Charley River. And I just feel that now there is, with your work and with others that I've been very happy with at Denali and so forth, I think there's now a chance that this work can be supported and appreciated within the national parks.

And like I said, I think working together with colleagues, pulling together like the [Norse?] information study, that we should be widening, or lengthening and widening the

context of the parks when it comes to these ancient environments and what they hold, and what the parks have been able to preserve and protect.

I'm very proud of the work I've done in the national parks, but also for BLM in places like Eastern Mojave. Many of my students went on to fight for the Mojave National Park and Preserve. Going to the meetings to show what we had found there when I was teaching at Merritt College. And we'd use it as an environmental studies program every year. Eastern Mojave Desert.

And I've always been very proud of the work I've done for the National Archives and the national appreciation of what we have in this country. And I commend the Park Service on hanging in there in difficult times. And Judy and I support Jack London State Park, which almost was shut and closed because of budgetary problems. And the local community stood up for them. And took them over privately with permission of the Park Service. And it's now one of the premier places for schoolchildren to go to and learn about Jack London and [Charmeon?] and that part of our history. So I wish I had had more time to do more work for the Park Service. And to maybe have more influence on where the Park Service is going with their research programs. But I certainly can't complain anything about my overall history. I was very, very thankful to all my colleagues and all of the things I was able to do, even where I started.

1:26:37

Santucci: Well, you certainly have a lot to be proud of. Not only your scientific contributions, the work you've done in the field, the work you've done for us in the National Park Service. But you know, you're a gentleman. You're a class act. And you view all the human dimensions and how people can benefit from that kind of work. And I've benefited from sharing time with you in the field, listening to you and learning from you. And for that, I'm indebted.

Gangloff: Well, I definitely appreciate that. And thank you for the thoughts. I hope I can further supplant things with these publications. And yes, most of these collections are in Alaska in the Museum of the North. And that Druckenmiller certainly is amenable to working with the Park Service, I'm sure. And also there are, I'm finishing up trying to clean up the collections for my dissertation, and making sure that whatever collections for the Yukon area, Charley River area, either properly archived at UCMP or will be sent up to Alaska to be put in the collections by Druckenmiller. So there's still some work to be done. And I won't be happy until I get that done. (laughs)

Santucci: One final thought. Do you have photographs from the fieldwork you did in Yukon-Charley?

Gangloff: Yeah, I'd have to look carefully. I got rid of a lot of my slides and so forth. Just you know we've had to downsize and just had to, I'll have to really look and see what I have left and so forth. But I'll, like I said, I'll be glad to send on anything I think is cogent to our discussion and to your work.

Santucci: Perfect. Well I think this is good. We got good information. I'm going to go ahead and shut off the audio tape unless you have any final thoughts.

Gangloff: No, I think I've done it all. (laughter) I don't want to bore anybody.

Santucci: That's great. I'm going to go ahead and shut this off.

1:29:09

[END OF INTERVIEW]