

U.S. NAVY MEDICAL DEPARTMENT ORAL HISTORY PROGRAM

ORAL HISTORY WITH DR. ROLLIN BAKER

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Interview with Dr. Rollin Baker, World War II veteran, worked with NAMRU II in the Pacific during World War II.

I'd like to start--we can start kind of at the beginning and find out where you're from originally.

Well, okay. I was born in Illinois at my great-grandfather's little town he founded in 1846 on the Mississippi River called Cordoba, like Cordoba, Spain, you know.

Yes.

And I was born in 1916 in my grandfather's house. My mother happened to be in late stage of pregnancy visiting my grandmother who [unclear], my mother's from Texas. So instead of being born in San Antonio, like I was supposed to have been, I suppose, I went back two weeks later, but Mom had her first baby up there and I was it.

Did you grow up in Cordoba then?

No, no. I never lived there really. My father was a geologist with a degree from Oberlin and Chicago and California--Berkeley, California, worked at UC-Berkeley. So we moved around a lot as a kid. Lived in lots of different places. Lived in Berkeley, California, in the twenties, early twenties and finally moved to Houston. In 1926 we moved to Houston, and then in 1931 moved to Austin.

When did you decide you wanted to be a scientist?

Oh, at the very, very start. I always wanted to study animals. I suppose I would have been richer if I had studied geology and found some gold mines or something, but animals intrigued me. I was going to say that I got some of this in Houston. We used to study little animals in Houston and when I went to Berkeley, the University of California campus had summer school sessions in nature things for children, which I and my sister attended. When Houston--one passing thought was that Walter Cronkite, who, you know, was the CBS newsman?

Sure.

We were in the same class all the way from grade school and junior high, then San Jacinto High School, until senior year we moved to Austin so I lost track of Walter until I met him years later at a university function in Michigan.

So you knew him from the early days, then?

Yeah. He was our best mechanic in the area. He still is a mechanic. I understand he does all the mechanic work on his boats.

He's got quite a nice boat, a sailboat.

At Martha's Vineyard or somewhere.

Yeah, I think that's where he lives, in Martha's Vineyard.

Yeah. Anyway, I got out of high school and went to the University of Texas and majored in zoology. Went there from 1933 to '37. Texas had a [unclear] department and was sort of oriented toward laboratory-type biology. Mueller [phonetic] was there, who later won a Nobel Prize for discovering that you could X-ray fruit flies and change their genetic structure. Herbert Mueller left Texas about the time I went there, actually, but he did his X-ray research work there. They went to Russia for a while and he came back to the University of Indiana where he ended his days.

So I was really grasping around. To study animals you have to go out in the field, and we didn't have a really field-oriented course except one course in entomology. I got in that, and senior year, I applied for a job as a wildlife technician--actually, it was a student wildlife technician with the National Park Service, which paid an exorbitant amount of \$70 a month.

When would that have been?

That was in summer 1937. I was there three months and I was ordered to duty at the CCC [Civilian Conservation Corps] camp which was then located in what is now the basin of the [unclear] Mountains in the Big Ben National Park in Brewster County, Texas. It's right down where you were, pretty close.

But this is back in the early days when they were just starting some of their park work, and I was hired along with some other fellows, young fellows that had just graduated in geology, forestry, botany, wildlife, and so forth, to make what we called pre-park surveys. They had the CCC Camp there where we were based, and we spent the whole summer in the field collecting and gathering data on animals and plants, depending on what our specialties were. I was specializing in insects, actually, on that particular assignment.

Then I took all that collection after leaving the summer job back over to Texas A&M [University], where I suddenly found out they were having a field-oriented program in both wildlife and other zoological subjects, but I used this collection of insects which I had various specialists in the various groups all over the country identify for me. They were readily anxious to do this, because the Big Ben was a very interesting area biologically. I got an insect

or two named Bakeri after me.

Oh, really?

Flattering.

Got your own species.

Well, anyway, I got my master's. I got the master's at Texas A&M University, having gone through in '38 and '39. No. '37 and '38. Excuse me. I got the master's degree in '38, and that summer I joined another colleague of mine who had been at Big Ben and worked out in Mexico collecting mammals all summer on the joint University of Texas and University of Mexico expedition in northern Mexico, which was great fun.

I came back in the fall of 1938 and went to work as a wildlife biologist for the Texas Cooperative Wildlife Research Unit, which was a subsidiary of Texas A&M at College Station, and I was ordered to field work in the Eagle Lake area of Texas, where I met my wife and that's why we're retired back here, back in her hometown.

I worked on prairie chicken and quail and whitetail deer, fur-bearing animals, rodents, song birds, all that kind of stuff.

What kind of work were you actually doing? You were collecting specimens.

Well, I was in Mexico and in the Big Ben, but in school work I was an ecologist. We were interested in the conservation of these critters. In other words, we were studying, first sort of making inventory of what was here, how land-use practices affected these particular animals. Of course, the prairie chicken had waned tremendously because they haven't been at all compatible with what man has done down here on the prairie, but it was not so much collecting as it was ecological, environmental studies.

In 1939, I happened to be at the right time--seemed to be all my life--at the right time, at the right place and all that. The Pittman-Robinson Federal Aid to Wildlife Act was enacted in Congress in 1937. Pittman was a senator. You may know of his son who has a religious TV program--Pat.

Oh, yes.

His daddy was a great guy, let's put it that way. Anyway, they passed this law which meant that the federal tax of arms and ammunition which you paid if you bought a gun or bought ammunition was set aside to go back to states on a three-quarter federal, one-quarter state fund, and they could hire people to do wildlife research. This was part of a total package of conservation which

emerged in the thirties. Soil Conservation Service, the people at that time, was the most prominent part of the whole picture.

But anyway, I got into that and I spent about five years working on all sorts of wildlife animals, publishing papers on the ecology of tree squirrels in east Texas, on the food habits of raccoons, life history of armadillos, things like that. Then the war came along. I have my three cards here. I had to sign up in 1940. They put me in 3A. I'll tell you the date. Let's see. On September 3, 1941, I got put in 3A, but--

3A?

Yes.

Category?

You didn't have to go in 3A, but they put you in a position where you might be called, see. But the bad news came--let's see. In November 19, 1942, they put me 1A.

So which means you were eligible for--

From that part of east Texas where I was stationed. Well, I knew I was going to have this happen, so I had been negotiating with the Navy, so as soon as I was put in 1A, I was pretty much through with the research I was trying to get complete so I could publish it. I rushed down to Houston to the Office of Naval Officer Procurement, the Houston office of that which was then going on in World War time, and applied and I became a midshipman, reserve midshipman, and reported on February 1, 1943, to Notre Dame, Indiana, where they had one of these big what you might call a "ninety-day wonder" school. I guess that's an Army term, but anyway, I was there four months. I can't believe how much I--I had been out of school so long, and we had trigonometry the first day and I forgot. [Laughter]

What kind of a course did they give you?

Oh, many, it was rough. They busted about a third of the class out, and they were all, you know, recent graduates. I was probably the oldest guy there. Twenty-eight was the cutoff, and I think I was 27.

The tough part was the math part for most of them. The seamanship was just where you'd memorize ordnance. But navigation was pretty tough.

So you would have been learning in a compressed course. You would have been learning what a midshipman at the [U.S.] Naval Academy

would have been learning?

Well, pretty much, yeah. It's just like OTS in Army, you know. Officer training.

But it was only three months?

Well, actually, the first month you were what they called an apprentice seaman, and if you passed that first rigorous training, you were made a midshipman. If you successfully completed that, then you would be commissioned an ensign in the U.S. Naval Reserve and probably with a sea duty billet or qualifications. Actually, when I graduated, I graduated about 50th in a class of 600. I did pretty well, by the way. So I got my choice of where I would go, and I picked destroyers.

So really it had nothing to do with the fact that you were a mammalogist or anything else?

Not really. I was offered a commission two or three months before I got to be in 1A, as a photographer. I had always been a good photographer, a field man, but I turned it down because I wanted to finish some stuff up. My wife was expecting a baby, which was born in December of 1942, so I was there for that.

This commissioning took place in May. Oh, it was quite something up at Notre Dame. I don't know if you've ever heard of Russ Morgan and his Orchestra, but he was--

Oh, yes.

--one of the more famous name bands in that period. He played for our graduation ball. Very formal. They had the Secretary [of the Navy] there. We had an annual called the *Battalion*. I can't believe it, like high school or college.

You say the course was actually longer than three months.

The course was four months, because at the first month you were an apprentice seaman and they were giving you the once-over. That's when they blast out all of them. And at the gate, if you were kicked out, there was the Army waiting to say hello to you. You'd get almost drafted almost immediately as a private.

So it was good incentive, then, to study hard.

I think it did help encourage some of the fellows. [Laughter]

I imagine.

It was tough, but it was quite an experience. But anyway, I was ordered to a ship in the Atlantic called the USS *Belnap* (AD-251).

It happened not to be a brand-new one. It was an old four-stacker which was constructed a little bit after World War I. It was like the ones that President Roosevelt gave the British back in about 1940, if I remember.

Right. He had a "destroyer for bases" deal.

That's it. You're well informed. Anyway, I was on that ship. When I first went on board, I was a line officer, deck officer. I pretty soon became fully acquainted with the ship and was promoted by the captain to OOD [officer of the deck]--in other words, I was conning the ship on my watch. What we did first was escort baby flat-top carriers around the Atlantic chasing submarines. What we called a baby flat-top was really actually a merchant ship that had been converted to a--

Escort.

Yeah, escort. They weren't like the big carriers, the *Spruance*.

Right.

And all those in the Pacific. These were small ones and they carried torpedo bombers and F-4Us, which were a little kind of a fighter plane.

Those little aircraft carriers helped beat the German Navy.

Yeah. The way it worked, we'd go after six weeks out of either Norfolk or Staten Island base at New York or Boston or Charleston or Norfolk, places like that, and then we'd be out about six weeks with a carrier. Half way through, we'd get into Casablanca, North Africa, which is a very interesting desert country, kind of like my old area in the Big Bend country. I'm a great person for the desert. I'm a desert animal.

What we'd do, at night the German submarine would surface, would probably charge or recharge their batteries or something, too, but they would radio to Saint Navarre, which was their main base off the French coast, you know. They held France at that time.

Right.

And we'd pick them up with radio direction-finding equipment, see, and be able to focus in on exactly what position they were from the ship. But now, if we added another carrier group off 50 miles away or something, or whatever, they would also pick this up and then you'd triangulate and you knew where the sub was. So the next morning, bright and early, if the weather was terrible, you'd send

your planes out, your torpedo bombers out, to try to find that submarine and sink it with either depth charges or--they used depth charges, I guess, not torpedoes. We were very successful at this. We'd get four to five of them every time, but we'd all kind of feel glum about it, because those poor Germans, we didn't know them. We hadn't been personally mad at them. They're pretty interesting.

So the *Belnap* then went out and depth-charged these and also the planes from the carrier?

Yes. Once in a while our destroyer was sent out sometimes when a submarine might surface and it had aircraft equipment on it, and it would start shooting at those airplanes. They'd send a destroyer. See, there would be three escorting destroyers, one in front and one on each side, handling a sonar screen, so if you detect anything out there ahead, like a submarine. What I'm trying to say is that if we felt kind of small about this, the carrier was not dispensable, but the escort vessels, they could be expended, see.

Yes.

In other words, if some submarine had actually shot a torpedo at our carrier, we're supposed to get between the carrier and the submarine, you know. After all, a carrier, you don't want to lose it. You can always get another destroyer. Well, you can't get one every time you want, but at least they're not as valuable of a warship. We were very successful in doing this and had a lot of interesting experiences.

While I was on there, our ship captain, Benjamin T. Brooks, a Yale man. We were all reservists. We had an Annapolis captain when we first went aboard, but he wouldn't even eat with us because we were a bunch of lousy reservists, you know, and he was from the Academy.

He was regular Navy and you guys were reservists.

Oh, yeah. Oh, yeah. Oh, yeah.

So you were in a different class. He saw you in a different class.

Yeah, an underclass. We were friendly, but he--well, I don't know. I supposed he resented the fact that all these greenhorn landlocked types had to be brought in to fight the war with him instead of having his old comrades from Annapolis. This is probably true of any war.

How long were you aboard the *Belnap*?

I boarded June 9, 1943, and I'll tell you what happened. First of all, I want to tell you that the captain, a Yale man's sister was a lady named Peggy Brooks. She married a guy named Joe Hickey [phonetic], who was a professor at the University of Wisconsin. They're both ornithologists. Peggy, who is now dead, gave Ben a copy of Alexander's *Birds of the Ocean*. That was an old-timey book about how to identify birds of the ocean. So I got hold of it.

What was the book called?

Birds of the Ocean by Alexander.

Alexander.

I don't have a date. He was a bird guy. So every time I went on bridge watch--and I got the captain to give me permission to do this--every time I went on bridge watch, at least in the daytime you could see something, I got permission to get the water temperature from the log and the latitude and longitude from the log and the time of day, of course, and I watched and counted birds. I did this all for almost a whole year. I published a paper on it called *Birds of the North Atlantic* or something in one of the ornithological journals after the war. We weren't really supposed to keep those kinds of records. I'd kept diaries all my life, but during the war we weren't allowed, for several good reasons.

But anyway, every time I got a chance to get off the ship at Norfolk, I would hitch a ride. In those days, you could walk to the Navy airfield and hang around waiting for a plane that was going where you wanted to go, you know, and hitch a ride. I hitched a ride up to Washington [D.C.] to the Smithsonian Institution and the U.S. National Museum, which is now called the United States Museum of Natural History. You probably know.

Sure.

The curator was Dr. Remington Kellogg, who was an authority on whales. I would plead with him and also a curator at the American Museum of Natural History in New York, to help me identify whales that would surface and I didn't know what they were and I still don't, never did find out. But anyway, I would talk mammal, I was a mammalogist and bird man--with the boys at the Smithsonian.

Along in March or April of 1944, I was up there, and Dr. Kellogg said to me, "Why don't you go over and see Commander James J. Shapiro," whose name, by the way, is in that article that I gave you.

Yes. I've heard his name before. He's pretty famous in the field.

Oh, yeah. So Kellogg made a phone call. I walked into Jim Shapiro's office.

Where was that, by the way?

In BuMed, in the old-timey place.

Yes.

He looks at me and grins and said, "Are you a mammalogist?"

And I said, "Yes, sir. That's what I am."

He said, "Would you like to get out of sea duty and become a mammalogist for U.S. Naval Medical Research unit number two?" And he explained what they're going to do out at the Pacific. Oh, my lord. I nearly fell off--you know, I told you a while ago, the right place at the right time.

I guess so.

Two days later, a guy comes in from South America who had been working on monkeys in relation to yellow fever down there. The Rockefeller Foundation. He was in many ways much more eligible than I would have been for this job, but I was two days ahead.

But anyway, so Shapiro said, "Okay," and he got a lot of information from me. He said, "Go on back to your ship, you know, go on back to your duty, and you'll get orders."

I got on back to the ship and I told them what happened. They didn't believe me, said, "You can't get ordered from sea duty. You've been trained to be a fighting officer type of person. How in the Sam Hill can you be transferred to a less priority position?" Which BuMed would have, you know what I mean?

Yes.

Everybody wanted line officers and I was qualified not only deck duty, but qualified for destroyers under way. I was in line to be exec--you know, captain or something if I had stayed around long enough.

Anyway, in June I received these orders to report to the Rockefeller Institute for Medical Research, which is now Rockefeller University in New York. It's on York Street, York and something, up in Manhattan, anyway. Along the river. Along East Side. The famous micro [unclear]--did you ever hear of Paul de Christ's [phonetic] book, *Micro* [unclear]?

Sure did.

Well, I mean guys like Theobald Smith, who did something with Texas spotted fever, and Niguchi and his crowd over in Nigeria that's

all died from yellow fever. Anyway, a lot of the [unclear] people that he talked about were either Rockefeller Institute guys or Rockefeller Foundation--Micro [unclear]. So, I mean, here I was in the middle of all this and stationed about July '44 and I stayed in New York on duty until we left in November for the Pacific.

What kind of duty did you actually do there?

I published a paper with Dr. Wilbur K. Downs, who was a Cornell graduate and a Rockefeller Foundation medic, just recently passed away. He was head of the [unclear] lab at Yale when he died. But Will Downs and I had a common interest, because he had had a course in ornithology and he liked birds and animals. We did a paper on the crossing between two species of [unclear] mosquitos. Unbeknownst to people, the Rockefeller Foundation, or Rockefeller Institute for Medical Research and the Foundation, had a colony of H_____, which was the Old World carrier of yellow fever which shouldn't have been in the country--don't quote me on that one. And also H_____, which is our common carrier of yellow fever in this country.

Dr.--what was his name? A South American guy that won the Nobel Prize for yellow fever vaccine--starts with a "T". I can look it up.

We can find it sometime.

We did a story. It was published [unclear].

You and Dr. Downs?

Wilbur K. Downs.

Did you have any particular reason why you wanted to cross these two species of mosquitos? To see if it could be done?

Scientists are always interested in finding out something new, you know, add to the knowledge. You don't go around repeating what other people are doing. You just try and figure out what can I do that is beyond what we know now about this. So here were these two colonies of mosquitos that we played around, tried to get them to cross-breed, which we did.

But at the same time, I was getting together all this real good field equipment for collecting animals in the field. My objective from Captain Thomas Rivers, who was our commanding officer, then stationed at the Rockefeller Institute for Medical Research because at that time he was head of the hospital there, my objective was to collect animals which parasitologists, virologists, bacteriologists, etc., could examine to see if there are any diseases

they might be carrying which might affect troop concentrations. What we worried about was here's half a million troops ready for invasion and some local disease to which they have little resistance, they might end up with diarrhea the day of the invasion. And guess who loses that battle? We were real scared because our troops were out in these foreign areas.

You go to Denver, you know, and sometimes get diarrhea, or Mexico City or El Paso, Texas. I mean, you get a new set of oral things in your gut or whatever, and it upsets the situation. Well, luckily in the South Pacific during the first part of the war, both the Japanese and the Americans got sick. Japanese don't do any better in the tropics than we do. My recommendation is the next time you have a war like Vietnam or someplace in the tropics, hire a bunch of Panamanians to go down there. Don't send any Americans. They don't even fight good in Texas. They fight real good in Germany. Oh, Germany is a great place, I mean, you know, it's cold. We do well in Germany.

Very similar to what we have here.

Yeah, but we're not tropical people. Mad dogs go out in the midday sun.

Right. So you got orders. You were at the Rockefeller Institute.

Yeah, on this temporary duty until we were to leave. The Rockefeller Foundation just handed over our administrative staff 25,000 bucks cash, to spend any way we wanted to. In other words, Navy red tape and all that wouldn't be involved. So I used to go down to Abercrombie & Fitch, or some of those outdoor stores--

Right there in Manhattan?

Yeah, and buy collecting equipment, traps, all kinds of skinning equipment and everything.

They had all that there?

I'll tell you one of the best ones was we had enough priority to get--you know L.C. Smith shotguns?

Oh, yeah.

L.C. Smith quit making shotguns.

Well, they won on a war footing.

That's right. But we got priority for them to make six 16-gauge field grade double-barrel shotguns for my use, or our use, in

collecting animals, birds and stuff in the Pacific. And they made them. Now, when they got to us, the outside was not finished on them. Can you beat that? Some admiral must have those in a collection somewhere, because we left them all in Guam when we left. But they weren't finished outside. They were all machined inside, but the outside wasn't completely finished. So they were unique guns. Anyway, we took them with us. I just use that to point out the fact that we had a lot of priority in buying things.

Were you already attached to the NAMRU then, to NAMRU II officially?

Yeah. I was ordered to the Rockefeller Institute for Medical Research in New York City.

So that was when you officially were attached to NAMRU?

Mammalogist/ornithologist for U.S. Naval Medical Research Unit number two--NAMRU II. At the same time, I got hold of a card file. You folks at BuMed had a card file of all of your pharmacist's mates.

Well, I still do.

And their attributes. And I went through the file trying to find three or four pharmacist's mates who had some special educational qualifications who could be assigned to the mammalogy program for NAMRU II. I spent some time doing that.

In the meantime, my colleague--we had two of us--Dr. David H. Johnson had been on leave as assistant curator of mammals at the U.S. National Museum, now the U.S. Museum of Natural History, was already in the field. He and I were two officers involved in this mammalogy lab, a unique kind of a thing, and we were the only--it's a little bit of an ego trip on this one--but we were the only two guys that had this kind of assignment in the whole dad-gum war! Either Army, Navy, Marine or, you know, Air Force. anything. It was a very unique position to be in. Everybody thought we were just hunting and fishing, which we were doing a little bit, too.

They probably saw your 16-gauge shotguns and figured you were going off hunting.

That's right. We did all this in that space of time, a few months, and that all had to be sent out to the West Coast. We had one whole ship which was cargo, you know, a transport ship, in which all of our equipment was going to be stored, sent out, boxed up, and sent out to Guam, where we were going to be headquartered. That's a lot of work.

Most of this equipment, you said -a good deal of it, you had gotten from Abercrombie & Fitch?

Well, yeah, and other sporting, hunting and fishing outfitters. There was a lot of outfitters in New York City.

For example, your Smith shotguns, you had dealt directly with the factory to get those?

Yeah. We had to get those. Yeah, we had a high priority, got priority from the government or something. We got them. I'm sure they weren't extremely happy to do that because they were doing something else, you know, but they supplied us six double-barreled shotguns to our special case, 16-gauge. Also we had a machinist who worked for the Smithsonian in Washington make us some little auxiliary barrels. In other words, when you open up--are you acquainted with a shotgun?

Yes.

You break it down, you see, and you put your two shells in the slots, you see.

Right.

Okay. You can machine a little tube that you can slide into that instead of the shell, see. Inside of that, it's been drilled out to accept either a 410-gauge shell or a 38-gauge long Ballard [phonetic] shell which you handload with buckshot, you know.

So it was like a sleeve?

Yeah, there were sleeves.

You put a sleeve in there and then you could go to a smaller--

Set for 22 buckshot. In other words, if you're out in the field and you see a bear or something, you could shoot it with buckshot, see, or whatever. Or if you see a hummingbird, you can stick in that--of course, you don't have hummingbirds except in North America--that's not a good one. But a small bird, you can put the sleeve in and take some of this [unclear] shot that just sort of poofs out there and just barely kills the animal. You don't want to tear him all to pieces, see.

I see.

So, you know, if you're collecting to try to identify what's out there and inventory it, you sort of--

Well, a 16-gauge would be a little overkill for a hummingbird,

so you'd want something a little less than that.

Yeah, so you'd slip a sleeve in there that would take a very light shot, see.

Oh, I see.

One that wouldn't just blast him, obliterate it. So we had that sort of thing. But in those several months there in New York and also while I was there, I got travel orders to go to Harvard to the Museum of Comparative Zoology and to look at their collections of animal life that were preserved there and study skins in trays, you know, in the mammal and bird division from these islands we were going to be at in the Central Pacific and Micronesia, the Philippines, Coastal China, all through there, not knowing what we were going to do, exactly. We had some guess that they were going to try to go into China and then come around, you know, head off to Japan by coming in from the east side, if you get what I mean.

Then I had orders to go back to the Smithsonian to look at the collections down there, and I spent an awful long time. The best collections of the Pacific were in the American Museum of Natural History in New York, the bird department especially. In the 1920s and 1930s, one of the rich, wealthy families in New York had sponsored some expeditions in the Pacific on their own personal yacht and let the collectors go to all these different islands, atoll groups, over a period of years, including some of the Japanese-held islands up from Micronesia there around Guam. So they had a great collection.

We had William Coltis [phonetic], who was a collector for the Smithsonian--or I mean the American Museum at that time--had a fantastic diary/journal that he kept, and I read everything about Saipan and Rota, Ponapei, the Palau Islands, and so forth that he had in there, so I had a pretty good idea what to expect.

Some years before, incidentally--I'm doing all the talking here--a Japanese ornithologist accompanied by two alleged assistants who actually turned out to be embassy Secret Service intelligence guys, came to the American Museum and wanted to look at not only the collections, but also these journals. The director and the curator got scared of it, got hold of Washington, and found out that these two guys were intelligence officers for the military--Japanese military. This is back in about '38 or '39, before the shenanigans started.

What had happened is that Archibald people had sponsored an American Museum expedition for several years to New Guinea and they had magnificent photographic pictures of a float plane landing on wakes up near Mt. Wilhemina [phonetic] you know, the highlands of New Guinea, and apparently this Japanese ornithologist, highly

respected, had been ordered to get in there to examine all this stuff, getting ready, I suppose, for the war.

They wanted a heads-up on us.

Yeah, so actually they were not allowed to look at this information. But, you know, people like the work I was in, where you do field work, the animals don't come to you, you go to the animals, you see. And we get to know an awful lot about the country. I worked in the Mexican state of C_____ for about twenty years till I wrote a book on the mammals of the state, but I had to make my own maps most of the time. If we had a war with Mexico in those good old days, no doubt they'd have called me in as an intelligence person to tell them about the terrain in this area, because I'd probably know as much about it as anybody because I walked all over that country. This is what was true of these expedition guys in places like New Guinea.

Dillon Ripley, who was secretary of the Smithsonian--you probably heard his name.

Sure.

Dillon Ripley, a pretty good friend of mine, incidentally, did his doctoral dissertation on the birds that are found on some islands off the coast of Java. He was pretty well-to-do himself and he had a yacht at his disposal to gather the data. Did his Ph.D. at Harvard, I think. No, wait a minute. Yale. One of them. He went to Harvard or Yale. Anyway, one undergrad, one grad. But during the war, Dillon was OSS which is, you know, equivalent to the CIA today. Why? Because he spent a couple of years over there in Indonesia, you know. He knows a lot about the place.

When did you actually start your field work then? Was it on Guam? That was the first place you got to?

We left in November and went out to San Bruno, California. We were ordered out there. That used to be a racehorse track.

November of '43?

'44. The NAMRU ii outfit should have started about two or three years earlier to have been most effective by then. We were out at San Bruno, California, which is just down south of San Francisco. It used to be a horse racing track. What it was, was a staging area for people going to the Pacific and they gave us training in ordnance and all kinds of first aid and all kinds of stuff for anybody that's going out to the Pacific, you know, on duty, for about several weeks, and then finally we were ordered to San Francisco and we boarded a

converted Matson line. The Matson line used to run passenger ships from the West Coast to Honolulu and back, and this was the Matson line. It had hundreds and hundreds and hundreds of Army, Navy, Marine, all kinds of personnel.

Meanwhile, the ship that had all our equipment had already gone out to Guam. It was the USS *Cape Cleare*, the name of the ship. At Pearl Harbor we had to wait for a while because of the propeller--something happened and they had to replace it or something, but finally we got to Guam right after the first of the year, the beginning of '45 and we were moved to the wreckage of what was the capital city of Oguanya [phonetic] on Guam, on to this point of land where we were to have our headquarters.

What do you remember about what Oguanya looked like?

Between the Japs and the Americans, it was just messed up real good. There was some reinforced concrete buildings, you know, still standing around, but most everything that was there had been burned out and you had pilings around where wooden structures had been. It was pretty much of what you might call a ghost town, like somebody had just either leveled it with heavy artillery or had burned it. But it was pretty much of a wrecked place.

But you say you went out to a point which was close by to set up your headquarters?

Yeah, let me look in my notes. I can't remember the name of that. It's up above T_____ Bay, north of T_____ Bay. For the officers, they already had put up tents and there were four officers in a tent. At that time, the Seabees were working and directing us to help them work in erecting our Naval Medical Research number two headquarters and we used mostly Butler huts. B-U-T-L-E-R. Mr. Butler was from Kansas City, and most of us were wondering how we could get back to Kansas City after the war and strangle him very slowly, because those damn things, you have to bolt them together. The seabees had all of us, officers, commanders on down, screwing together these darn different panels. The concrete of the bases had been laid in there, the plates, you know, and you were putting all these ten-sided parts.

So you didn't have a lot of time to go out.

Oh, no. We were not doing nothing but--

But putting these things together.

One of my pharmacist's mates was a good shot. He made a slingshot. He shot some birds which I studied on the QT, more or

less, but we didn't have any of our equipment. It was all still in boxes under a big canopy of tarpaulins and stuff, you know.

So we spent maybe two months or a month and a half on this real good work.

[Begin Tape 1, Side 2]

Commander Zimmerman, who was a famed pathologist, I mention him in the article because stuff they're still doing on Guam that has to do with aging diseases that are going on there--this is *New Yorker* magazine. It's in that article. But here's Zimmerman sitting there, a very distinguished pathologist from Yale, sitting there straightening nails. He did that I don't know how many days. Nails were, you know, hard to come by.

Sure.

Anyway, so all of us participated and we put up these Butler huts, but we had these marvelous Seabee guys, unbelievable, hard-working guys. While they were out working there, somebody else was taking over their business and making a lot of money on war, you know. Some of them kind of regretted that, but, they were a pretty patriotic bunch.

They had been engineers in their civilian days.

They had been civilian engineers, they had been contractors. They had been people who built buildings, houses, brick work. I mean, they were builders.

Yes.

They were not college degree or college kids. I mean, you know, they had been on the job.

So they were professionals?

Oh, yeah, and they were very dedicated because they maybe had their own businesses at home and they maybe left them to their kinfolks to run or something, but here they were. They didn't have to come. A lot of them were old. They were over fifty years old, old-timers, a lot of them were. So it's unusual, because most of our troops, you know, eighteen-, nineteen-, twenty-year-old people.

But anyway, we finally got this thing together. We got under way probably by mid-February. We were able to have our labs straightened out and all the equipment put up. We had our collecting guns and all this ammunition. God, I had thousands of rounds of all sizes of shells for collecting different kinds of birds and animals.

What size would you have? You'd have everywhere from buckshot up to maybe number 8 or something?

Yeah, you'd have buckshot. As a matter of fact, we shot one deer on Guam, Sandbar [phonetic] deer which the Spaniards brought in about 1750 from the Philippines. The Smithsonian now has the skins and the complete skeleton of that critter. We ate the meat, I might add, or most of it. But, yeah, we had all this variety of--we had traps.

What kind of traps?

Well, snap traps like you'd use to catch a mouse. We had box traps which you catch them alive. One thing I did was set up a bunch of grids. We were interested to see what rodents were on Guam. They're all introduced. There are no natives. You're too far out in the ocean. These oceanic islands you know, came up out of the ocean, and for anything to get there, it would have to come overseas. A bird can fly or an insect might fly, but rodents were probably brought by commerce or by the Polynesians brought one of them called a Polynesian rat.

Anyway, there were two big rodents and one little house mouse-like animal which were all introduced. What we were interested in seeing how far they moved in their normal travels because we didn't want them to come from the jungle and invade the camps, you see, and bring diseases in.

You thought these might be vectors?

They might be vectors for disease. That's correct. They might be carriers of something or just fleas or ticks or mites that are on them be carriers. Just like in the New Guinea, Solomons area, one of the small rats down there had carried chiggers which were infected with [unclear] fever--you know, scrub typhus, which both the Japanese and Americans had a problem with. They had an ecologist down there in the early days. He could have probably told them, "This particular species of rats occurs only in this environment. Don't bivouac in this environment." In those days they didn't know, you know. Didn't know where to go.

How far afield did you go from where headquarters was to get your animals?

On Guam?

Yes.

It's only thirty miles long. I did a complete survey of the

inventory of all the birds and the mammals on the island, the fruit bats which were natives and many of the little birds were endemic. You see, if they got out there mostly from the Southwest, from the Philippines and the islands of Indonesia. They had their closest relatives there. And when they got out there and isolated due to what we call a genetic drift and other factors, they slowly, through thousands of years, evolved into something else from what they previously were. We had some beautiful little birds, about ten species on Guam, most all of which were described as being found only there. In other words, they were endemic.

I want to go back to that grid thing for a minute. We set up a bunch of grids, guard grids with square and we'd have a trap every twenty-five feet on the grids. There might be 100 traps, fifty by fifty. No, I'm wrong. If you have a grid that's like seven by seven, there will be 49 traps, or eight by eight is 64 traps in this grid at these different stations.

There were live traps with doors that snapped close when the animal walked in to eat the food. What we did was trap them and we'd mark them with the help of my pharmacist's mate who would go out there every day and run these traps and shake the animal into a cloth bag, turn it inside out, so I could examine him and collect parasites, fleas, chiggers, ticks, whatever, and we marked them, each of these individuals, and we did it by clipping off toes. That sound's kind of brutal, and I admit it might be a little brutal. We'd clip off toes in a certain combination, then release them. Then if we caught them again in a nearby trap or one that's 100 feet away or something like that, you'd get some notion of how much moving around they did. You'd get something on what's called home range. We did that over a period of months.

You didn't do any tagging then?

Well, we tagged them by clipping their toes in a combination. Without cutting too many toes off, you get a lot of different number combinations with that. You only had four on the back feet. No, five on the front feet, four on the back. Five fingers on the front feet and four toes on the back. I guess I've got that right. Anyway, we marked them and then for each individual animal that is marked, which had a number, we would keep track of what it's doing. We had special note papers we kept for those.

Later on, I published an article about 1946 on this population study of the animal [unclear] on Guam in a technical magazine called *Ecological Monographs* after the war. But we were interested in seeing how far these moved around [unclear] what we call biomedical experts or epidemiologists or whatever you want to call them.

You were focused on mammals then. You weren't focused on insects, were you?

No, we had entomologists.

But they were part of the team?

We had a whole lab on entomology out there and we had insects, insectaries, cages full of--they were studying malarial insects, mosquitos that carry--[unclear].

Yes.

Elephantiasis, you know and [unclear].

Was Dr. Shapiro there with you?

No, Shapiro never came out.

He didn't?

No, he was staying in Washington. He was the guy, actually that helped Captain Rivers, Captain Thomas Rivers, who later became commodore, by the way, select from civilian life all these kinds of specialists. The pharmacist's mates were picked up mostly out of that--

Card file?

Well, a lot of them did laboratory work, virology, bacteriology work, were down there in Bainbridge. A lot of them were from Bainbridge, were trained there. But we had high-quality kids who worked for us. They didn't have degrees. Many of them went back to school and got medical degrees and so forth after the war. But, of course, my area was interested--people that were interested in field work, maybe had some knowledge of birds or mammals in the field. But anyway, we had all these different labs out there. We had parasitologists with Norman Stoll [phonetic], who was a famous Rockefeller Foundation hookworm specialist who had been in a process in India on how to--using a filtration method, you can find out what hookworm infestation was. Now, in Guam, we had both species of American hookworm and the Old World hookworm both together, which was an unusual thing at the time.

When you got all your data, did you submit reports back to Washington?

No, mostly to the local people. They may have gone through the chain of command, you see, to Washington, yes.

So the local people then were instructed on how to get rid of these animals or how to live with them?

Yeah. We had bacteriologists, we had virologists, people working on different aspects of environmental medicine out there. All that stuff would be combined and it went to Captain River's office. How he transmitted that, I don't know. It went up through the chain of command. They used to have a man in BuMed who was the head of research, Admiral Smith in my day--I don't know, a long time ago. But maybe he had the research/administrative sector of BuMed put all this together and then diagnosed it, issued it out to medical commanders and various fleets or the various invasion forces and so forth. I just don't know how they did that.

You had quite a number of people at that camp then, didn't you? At the place?

Yes.

Yes, had about twenty or thirty outstanding medical people plus a lot of others. I was just thinking about Louis Thomas the other day. He was in our outfit. Do you know who he is?

No.

Louis Thomas was head of Sloan Kettering in New York. He's retired now. He's writing books in his old age--*The Life of a Cell* and some others. He's written some very interesting, more or less, children's books on science. As a matter of fact, his picture was on the front of *Time* magazine a few years ago. But Thomas is probably one of our most famous modern individuals still alive. Most of the old-timers, like Dick Schol [phonetic], who was famed for his work on swine viruses and so forth, of course, died fairly soon after the war. I think Rivers, who was with Gorgas in Panama as a young doctor, he was in his sixties or seventies when he was out on Guam. He was an old-timer. We had a lot of people who couldn't have passed a physical for anything that were in our outfit because of their--

Their expertise.

Expertise. They pulled them out of civilian life. They couldn't have passed a physical. [Laughter] For our purpose, you know, this shows how wonderfully flexible the organization at BuMed was at the time. I'm sure they still have that same attitude, but there are rules.

You had said something in your paper about when you were helping with the construction of those Butler buildings. You had duties of

keeping tabs on the Japanese who might have been wandering around.

Yeah. Well, on Guam at that time, the island had been subdued in American's hands for maybe six months or something but for a lot of unreconstructed Japanese were running around the bush. Because I've been a line officer with Captain Rivers, immediately when we got there, they made me the gunnery officer, or the officer in charge of guards and all that kind of stuff. For some reason, I had the line, anyway. So we had guards. We had the tents around and we had training sessions, went out and shot guns and things. The pharmacist's mates didn't know very much about that sort of thing, but we tried to whip them into shape.

There were Japanese, but the interesting thing about these Japanese, they would come in, of course, to camps at night and steal things--you know, hungry and they weren't armed. If they were, they had very small amounts of ammunition. They weren't going to shoot anybody, you know, I mean particularly unless they were [unclear].

I recall there was one of these fellows who just gave himself up about ten years ago.

Yeah. There was one guy that was--I remember the news article on it.

In fact, he didn't give himself up; they caught him. He was stealing from somebody's garden or something.

The Japanese probably were under the impression that they would be killed if they were caught, which probably their commanders had given them this information because that's a good way to, you know--they'll keep fighting, for fear of being captured. I'll tell how they captured a bunch of them. They'd come in and watch movies at night. It's the damndest thing. Then suddenly they'd all turn on the lights and here would be these Japanese sitting back there, a whole bunch of them in a row, and they'd capture these poor guys.

They'd be sitting watching the movie?

Yeah. We were down on the Pelalau islands. You know, where Palau was. We were camped up in a place called K_____, a little atoll up towards the [unclear], which was the big island in the Palau group, which had not been subdued. There were lots of Japs on it. But we were staying in this big Quonset hut. My collection of animal work was in the daytime, but a Japanese guy would get up the hill above the camp and throw rocks down in the middle of the night on that tin roof. They called him "Bed Check Charlie." What a mean character! That's dirty stuff. [Laughter]

He'd keep you awake all night.

Yeah. We had these Marines on Guam, flyers--Tyrone Power and Ted Williams. You know those two names?

Sure.

Baseball and--

Oh, yeah.

They were two of these guys--I'd didn't get to know them very well. They were down [unclear] at the officers' club [unclear]. But they and their colleagues every once in a while would go down to Yapp, which was an island where they had this big stone money--you may have read about the Yap stone money. Anyway, it's down there between Guam and the Palau Islands. It's halfway and the Japs were down there. We made no attempt to invade most of those islands--just key ones--key islands, you know? But they'd fly over the island every once in a while to see how the Japs were doing with their cultivating crops because they were starving down there. Every time that the whatever it was--taro [phonetic] or whatever they were growing, would get near ripe, those darn Marines would go down there and spray it. That's dirty.

What did they spray it with?

Oh, napalm or they'd spray it with some kind of oil or something, you know, ruin the crops so the poor devils couldn't--

Couldn't eat.

That's right. That's dirty war.

You had said something in your paper I wanted to pursue a little further, how you were asked to introduce pheasants to Guam so Admiral Nimitz could hunt.

Admiral Nimitz, he's an old Texan. He's born and raised out here in the hill country, in the deer country. He loved to hunt, hunt and fish, that kind of thing. Here he's up at island command and they got a nice place up there. Of course, he's got to keep busy. He's CinCPac, you know, commander-in-chief of the Pacific Fleet. Well, anyway, he conceived the idea, "Let's have something to hunt out here." They had an introduced little hunting quail which came from Okinawa or over the Chinese area, that the Japanese or the--either the Japanese or Spanish had brought it in there, but there were no game. There were pigeons. There were pigeons around.

So Nimitz, like most high-commanding people, had their own private pilots, you know, and airplanes and stuff, so he had his

lieutenant commander--I don't remember his name now--his pilot, in a fairly light plane, it could travel across the ocean, but it wasn't a big one. He engaged some game farm and it was either in California or Oregon. I think it was California, if I remember right, that they bought a bunch of pheasants, half-grown or full-grown, almost full-grown pheasants, and they had them all caged. The pilot flew to wherever this was, the West Coast of our country, and loaded them all in the plane and flew them back to Guam. I can't think of his name--the pilot told me it was the most nerve-wracking thing he did during the whole war because Nimitz didn't want them to fly very high. He was afraid if he got up too high, the pheasants would die from not being in a pressurized cabin or whatever. So he flew low back--can you beat that--thousands of miles at low altitudes. Say you're only about 2,000 feet above the ocean, you can go for hours instead of being up at 10,000. It's a very difficult flight behavior.

But anyway, somehow they found a wildlife biologist in the island command and also CinCPac area, and asked me to come help set up an accommodation for these birds. Of course, I objected. I said, "We should not bring them out here. It's an alien bird. It might bring in disease to some of the local endemic species that we would like to see preserved, and they might not do any good," and so forth and so on, but who's going to pay attention to a jaygee or a lieutenant, whatever it was at the time? But anyway, he brought them, so I did the best I could in helping try to build some pens for the birds to acclimate them in captivity, you know, put them in pens, and as they seem to become acclimated to the new environment, open the door and let them go on out, which is one of the standard ways that you do liberate critters. You don't just drop them down and then let them go, but you try to adjust them locally so it's gradual shock to them of being released in an alien area.

But anyway, so this was the way they did it and it was a place between Oguanya and sort of in the mid-island area--I'm trying to think of how Oguanya--they must have been slightly east of the city of Oguanya where they did this. It's some farming land over there, which probably is the best place, where they have small crops and stuff. Pheasants do like agricultural [unclear]. They released them.

Were these full-grown birds?

I think they were pretty much full grown, but they were on the young side. In other words, they'd hatched out. They were at the stage in life, which according to the [unclear] experts, are the most hardy or most adaptable for release purposes. Anyway, they released

them and nobody saw them again.

They just disappeared.

Two or three of them hung around where the feed was thrown out in liberal quantities for them, but they just drifted off.

And never seen again?

Never seen them.

So they never reproduced in the wild?

Admiral Nimitz didn't get--

He didn't get to hunt?

He came down to our lab. I happened to not be there at the time, but some of my colleagues were. He wanted to see our collections. One of our field group got down to the Solomons, down in there, and collected a lot of pretty parrots, those kind of birds. We had trays of them, [unclear], and Nimitz came down to take a look. We had a photograph. I don't know what happened to the photograph of the admiral looking at a tray of these birds pushed out from the study case it was in, and he was examining them.

Captain Rivers had one big shot after another, visitors come to Guam. They were legislatures, senators, the head of the American Red Cross, and they'd all come to the research unit because it was interesting nature. Rivers was a great showman, a great guy, actually, and he would always come down to our lab to show them the birds, which was spectacular. When you walk through a virology lab, there's nothing exciting going on, you know, but here were all these birds. We had numerous visitors, USO people, some of these movie stars that were out with the USO, they'd come over. We'd see people, some of whom we didn't know who they were, but I'm sure they must have been--

How many miles -was the headquarters there where you were at from Oguanya? Was it about twenty miles, maybe?

No, I'd say about less than ten. The island was only thirty miles long, you know.

That's true.

Up north, some of that area is where we had our grids for studying these small mammals. It's where the B-29s went out. When we first got there, they were bombing every day in the Japanese stronghold somewhere, or not on the main island. They'd come back late afternoon. God, they'd have holes in the wings and one engine

would not be operating or something. They had a rough time of it.

In looking for these mammals, did you come across any you had never seen before?

No. No. Everything was expected there. Had we gone to the Asiatic mainland, that would have been a different story. No telling. See, on those oceanic islands, always separated by a barrier of ocean from any mainland area, no opportunity for many critters to get there except by human means [unclear] commerce.

So you had really a small pool to really study?

That's right, but the point was that we were operating the war from little islands like that to the east of the Japanese islands. We didn't want to get any of our troops involved in any kind of local diseases that might be [unclear] rodent-carried that could some way, through health, cause us problems in warfare. If they all get diarrhea, as I said before, the other side's going to win.

You obviously justified your existence out there. You must have found some rodents that were vectors.

Yes. Yeah, we found some things. I can't tell you what all some of these things were. Most of them were problems that the rodents shared with us in terms of digestive conditions. I can't tell you much. You'll have to talk to a virologist and the bacteriologist and like that, but on all these animals they would make a complete, you might say, autopsy of what they had in them, you know, and go through everything like you would an autopsy.

Did I mention something about Okinawa?

That was my next question. I was going to say that you had mentioned the fact that your team ran into some problems there at Okinawa.

A lieutenant named John Maple--a Ph.D. from Berkeley in entomology, he was an entomologist with specialty in insecticide-type stuff--economics, you know--insect control, and he was in charge of spraying DDT all over Okinawa before the invasion.

Before the invasion?

That was before DDT was a dirty word, you know.

This was before the invasion?

Oh, yeah. Yeah. He had a series of planes and they would fly low, especially where they thought they might be going to be invading the beaches, and they sprayed that damn stuff, I mean, they must have

blanketed the place. According to Dick Shope [phonetic], Richard E. Shope, who led our NAMRU II party in there on D-plus-6 days, six days after they initially invaded, the place was so damn sanitary, you couldn't find any flies. I mean, they killed mosquitos. Everything was killed out, see. Dick said it was the most sanitary place he'd ever been in his life.

[Unclear] was killed not by being shot down by any aircraft. If you've got a plane come over real low and slow like one of those spray planes would be, that aircraft can't train on it. Too close. They didn't hit him, you know.

Did you go ashore six days after D-day?

A young man named Merle Markley, M-A-R-K-L-E-Y, who had a master's degree in wildlife biology from Oregon State University, was a first-class pharmacist's mate that my lab picked out of the fleet. They wouldn't let me go. They had enough officers, I guess, coming, so he went and represented our lab. He's the character who put the mousetraps over there and a bunch of other stuff, trying to find out what the animals were that might have some problems, which might cause problems to the troops. The great stunt was that he had a bunch of traps down in this little valley, and the Japs [unclear] it during the night, and he claims he lost all his traps. They were all involved in the explosions. It was a big joke. I sure he was being truthful.

The idea of the NAMRU II group going in there was to determine how feasible for a research team to go in during invasion times and carry on preventive medicine, research studies, some of the conditions that the troops were finding and their health problems and how to alleviate them. This was part of the reason that the Okinawa invasion was made. Of course, the pre-spraying was done. Part of the objective of the NAMRU II team going in was to determine how effective that spray had been in controlling flies and other things that might give diarrhea or whatever else.

That's the first time that had been done in Okinawa, because it hadn't been done earlier.

That's why this paper I wrote to you guys--I thought maybe somewhere there ought be some literature--something about NAMRU II, because it was a very unique unit. It started too late in the war. It should have been started in 1941.

You said that you also went to other islands. You mention that you were on Pelalau in August when the war ended.

We were sent to Ulithi to look at the animal life down there

and some of their parrots. I had with me pharmacist's mates who were mammalogy lab and those in the chigger and parasite lab, and we were really inventorying down there. We went to Pelalau.

The war ended. The Japanese had the big island, which is called B_____. If you know the Palau chain, it's the north/south chain. Pelalau and Changor are major islands in the southeastern chain. The big island is called B_____. There are a bunch of little atolls where we once had a fleet anchorage at what they call [unclear] Passage. When the Japs gave up, they had I don't know how many thousands of East Indians from India, Indian troops that they'd held as laborer people over on B_____, and they turned them over to us--these poor, bedraggled, unfortunate, half-starved people. We helped them. We were asked by the island medical people to assist in inspecting them for ticks, fleas, and all that kind of stuff, head lice and all that stuff. They had an abundance of that kind of stuff.

So the war ended then when you were there?

Yeah. The war ended there.

Did you get shipped home right away?

Well, actually, we had a lot of finishing-up we wanted to do. Every month I went out to a certain beach on Guam and counted the shore birds, the migratory shore birds, you know. Like we have migratory birds come through, you know, you watch the beach. These species may nest way the heck on the Arctic Circle someplace, but they come through to go down to Argentina for the winter. So you have regular flyways through the Pacific, and these islands are little stopover places for these migratory birds who nest in Siberia or North Alaska and then winter down, say, in Australia, New Zealand, or Tahiti or someplace down there.

So what I was doing was making a survey of species of Guam over time, the species found, and their numbers, on these various beaches. So we had a whole lot of projects like that going, you know. Some of them, you might say, "What does that have to do with the war?" Well, maybe not too much, but if you're involved in the science business, you see things that would be interesting to look at, you know, or to examine or to follow up on. I published I think about ten pretty good-sized papers from a lot of our work.

So you had a lot of material that kept you busy for years?

Yeah. I finally wrote a big 350-page monograph on the birds of Micronesia, plus a monograph on the population study of rodents. It was a tremendous opportunity to do something like this, and I'm surprised that they didn't really do something like this in Vietnam.

Where? Where did you say?

I say I'm surprised they didn't do something substantial with this kind of thing in Vietnam. I don't know, but the military, whatever, must hopefully, at least--well, take BuMed, they must hopefully have all these kinds of data, kinds of procedures that they've been using in different wars and rely on them in the use of many of these in the next one, getting ready for the next one or whatever. So maybe in the years to come, if we have another major conflict, some of things were done by NAMRU II, some of the things that were done right or some of the things that were done wrong would be looked at, you know, and how can we help expedite the war and practice preventive medicine, biomedicine, epidemiology and so forth, effectively and keep the boys in better shape. You want your troops in good shape to go out and fight, you know.

They do that. They're doing that in NAMRU III in Cairo. They've been maintaining that laboratory ever since World War II.

Yeah, they had Harry H_____ out there, who was an old friend of mine. He's dead now. He was sort of interested in mammals, but he was interested more in fleas. [Tape interruption] ... an opportunity to stay in the military.

You were offered an opportunity?

In Africa. You know what they wanted me to do?

No.

You go and collect animals all you wanted to. All we want you to do is every time you see a tire track, take a picture of it.

Tire track?

That's what they said.

Whatever for?

Well, if the Russians' tires were over there.

Oh, I see.

Intelligence.

I guess you were aware of that. You got out in '45?

No, I got out in--well, now, let me tell you what happened. The war ended and we got all wound up out there. As a matter of fact, we were kind of unhappy because we had a lot of [unclear] that we wanted to finish, but the war screwed us up by being over, you know.

Not really.

But we flew back to Washington, even though I was eligible to get out, a number of points, or whatever you call it. I had duty at the Smithsonian for six months, at which time we cataloged what we had collected and I worked up the literature on the research on these birds of Micronesia, and wrote these other papers like this population study of the rodents.

I'll tell you one paper that was kind of interesting. I rode around the island on the jeep, doing different kinds of projects they were doing. I would keep track of where we're going and how many miles it took us--I looked at the speedometer--and then counted all of the birds, identified and counted all the birds. I wrote a paper that came out in one of the ornithological journals on the populations of birds on Guam based on road counts, which is kind of interesting for a little thirty-mile long island to do that, but I had several thousands of miles of running around, you know, in that period of time. You count the birds while you're doing nothing else but driving, you know. It's another way of gathering data.

Did the Smithsonian then end up with the entire collection?

Yeah, they had everything there. When I finally got out in July, 1946, I went to the University of Kansas from there.

You went to Kansas?

Yes. University of Kansas. Then we went back in the eighties. Did you know that, I went back out there?

No, I didn't.

I took my wife. She thought I was hiding out in Mexico all during the war, but I wasn't. No, she didn't.

But we went out to Guam, and here's the University of Illinois team and some other people out there working on this introduced snake. Did you hear about that snake?

No.

It's called a brown snake from Malaya that gets about twelve feet long, long and slender. It's a tree snake. It's a rear-fanged snake, which means it's poisonous, but it's kind of hard to get poisoned by it because its fangs are not up front like, for example, a rattlesnake. But anyway, somebody brought them into Guam about 19--maybe the fifties. So help me, all those little birds are all gone. Exterminated.

All the birds you had seen back then are gone?

Yeah. I was on television out there talking about that I had written this book on birds of Micronesia, you know, on a TV show. I was sort of an authority on birds back in the good old days, and here were five or six of these species totally gone. A Guam [unclear].

So they're extinct?

They're gone. Yes. What happened was the birds had no really natural enemies of that sort and the snake had none that were on Guam, and [unclear] matter, and what they eat, [unclear] are birds. And you know, pretty soon if you don't take care of reproduction, the thing's gone and this is what happened. I took a picture of these guy wires--the whole telephone poles out there along the highway.

Yes.

And they've got these brown metal barrier things on them like you see on a ship to keep the rats from--

Yes. The little cones.

Yes. Why? Because these big snakes would crawl up into the--they're not [unclear], by the way--they'd crawl onto these telephone poles and get electrocuted in these transformers they have sitting on telephone poles. They'd get inside of them. Of course, it'd kill them, but they would short out everybody. So they had these baffles on these--can you beat that?