

RUTGERS, THE STATE UNIVERSITY OF NEW JERSEY

NEW BRUNSWICK

AN INTERVIEW WITH CHARLES LOUIS SMART

FOR THE

RUTGERS ORAL HISTORY ARCHIVES OF WORLD WAR II

INTERVIEW CONDUCTED BY

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and

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TRANSCRIPT BY

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Shaun Illingworth: This begins an interview with Dr. Charles Louis Smart on April 30, 2004, in Brick, New Jersey, with Shaun Illingworth and Joseph McGrath.

Charles Smart: I started in Bearville. It became an area called Locustwood, and then, became part of Delaware Township, now called Cherry Hill Township, now filled with malls and people, but, when I was a child, just fields and sandy roads. Route 70 was just a two-lane road. It was a great place to grow up. There was a nearby Cooper Creek, where the CCC, Civilian Conservation Corps, had a camp and built a fabulous park. ... The road was a marble-like substance, but was closed off for years. So, for a kid to skate, it was just great, and then, we would sled, raft in the river, and a horseback academy, where the horses would get stir crazy during the winter. We could go over and ride whenever we wanted to. One time, I was a little kid, a horse ran away with me, ran several miles before ... he would stop, [laughter] and then, we plopped back very slowly to the barn. Anyway, looking back at my childhood, it was ... really great, no problems. I had a brother and sister, lots of friends my age, Boy Scouts, that sort of thing. So, I look back on it with no trepidation. ... A big thing would be to say, "Let's go to Atlantic City for a seafood dinner." Food was cheap. My father was an advertising man. He was the beginning of the advertising agency in this country, he and some friends, but, before that, he would go, let's say, to Hines Foods and he would lay out a proposal for their page ad and say, "Now, here's the circulation of the *Philadelphia Evening Bulletin*," which was the largest evening newspaper in the country and a very good one, sort of the *New York Times* before its time, ... but, later, long after he died, the *Bulletin* was in a labor dispute. Whoever owned it at the time said, "Forget it," and that was the end of the *Philadelphia Evening Bulletin*, which you've never heard of, probably, but a big paper. Anyway, he was very good at drawing. He had been a draftsman, so, he'd be able to lay this out for the prospect. So, in our family, say, a page ad for Campbell Soup or something like that, would be a big thing. So, that was my childhood. My mother had been a businesswoman, but, now, she was a stay-at-home mom with three kids. I went, then, to Haddonfield High School, which took kids from sending districts, including Delaware Township, but was just sort of a twenty-minute walk, maybe, to school and I would cut through a park where the original dinosaur in this country had been dug up and the hole was still there, but the bones are now in the Philadelphia Academy of Natural Science, where my oldest kid, then, was a paleontologist, long after this, of course. ... So, I would run around this hole. That was the way I had to get to school, but Haddonfield, ... this was during the Depression and a lot of the teachers had PhDs, the only job they could get, but I have very happy memories of it. Nothing super happened. I had always been in sports and so on, ... a lot of friends, but, then, after I graduated, this would be in, say, 1937, my father, as I said, had been a draftsman as a young man, so, I got into a school that the Baldwin-Lima Locomotive Works ran. Baldwin was a big name in locomotives. If you're an engineer, you'd know about Baldwin and I was sort of a trainee on a six-month trial to become a patternmaker. Next to toolmaking, patternmaking is considered, or was considered, at least, the best of the trades and most of the people there had been brought by whole villages from Hungary, Germany, and so on, so, very little English was spoken, but these were the craftsmen and very, very skilled people. ... I would spend half the day in drafting, in the morning, and then, [the] afternoon in the shop and I would have little projects, like, I made a piece for Boulder Dam turbines or I ... helped to make, in wood, the first General Sherman tank. You had to make it beforehand, so [that] the plate makers putting the tank together would know what to do and we even had the wood .155-mm gun and so on, but, anyway, that was Baldwin-Lima Locomotive Works. At the end, very harsh times, still,

... of six months, all but two of us were let go. Now comes the first downer; several months later, an aunt said, "I'll send you to college." I had no idea this would happen. When I told Baldwin, they were really angry and I didn't blame them. [laughter] It was so embarrassing, really, because, here, they'd kept me on. So, I was accepted at Villanova and Penn and Rutgers. I went to Rutgers for two reasons. One, it was not officially the State University of New Jersey, but, still, got a lot of State money, and then, I think it was actually, to me, less expensive than Pennsylvania and Villanova. So, I went to Rutgers at the last moment and the dorms were filled. This would be, I guess, in 1939 ... and I lived on Somerset Street, a block off the campus. You know where the Corner Tavern is? Well, you continue up on the next block and way up, almost to the parochial high school, it was there.

Joseph McGrath: St. Peter's?

CS: St. Peter's, right, almost that far. It was a rooming house and there were about eight of us students in it, but two of them became my best friends, because, one, we were freshmen, the others were sophomores, mostly, and we would do all sorts of things together and one of them, Ken Bachman, I still see at reunions, which will be in about three weeks. He went to Exxon, retired from there. He was the coxswain on the freshman crew, because one of the sophomores had been recruited from the Buffalo area, which is very good for intramural or scholastic rowing, Chris Maggio was his name, but, anyway, ... he got Ken Bachman to be on the freshman crew. The other roommate was Bill, ... I'm tempted to say Bill Everson, an old boss of mine, Bill Wurtz was his name. He was a one-man gang. ... As a freshman, he was a wing back on the football team and easily, I thought, probably, the best of the runners they had. He was a power forward on the basketball team and he was a one-man track team and, in all this, my memory of him is that he would sleep in his clothes to save time and he'd just slip on his moccasins and run down the street to class, where he was an A student. So, he's really a great guy. He later became a very successful industrialist. ...

SI: How do you think living off campus affected your Rutgers experience, as opposed to, say, living in Winants?

CS: ... Winants, at that time, where, probably, offices are now, there were students that lived in the dorm upstairs and in the basement was a cafeteria and you would get a card for so many dollars, and then, they would punch that when you went to eat and I guess the food was all right, but we would usually eat downtown. Down across [from] or near the railroad station was a diner and I guess the food must have been fairly inexpensive, because our choices would be that or one of the Rutgers eating places, but there was no commons at the time. It was just Winants basement and all I can remember is that it was common to buy two pieces of bread and put the butter in-between, so that you didn't have to pay for the butter. [laughter] Butter would be another penny or two, I imagine, tough times. ... While my aunt paid my tuition and books and so on, I had to come up with some way to live. So, I was taken on as, essentially, the office boy. I was in the College of Agriculture, because my father, the advertising ... agency guy, he dreamed of being a farmer and, in our home, in Bearville, now Locustwood, we would have several thousand leghorn chickens and he had a peach orchard and he sold and bought real estate and so on. ... Anyway, his dream was to be a farmer and escape from the rat race, which he never did, never made it. ... Anyway, so, they said, "What are you going to major in?" and I

said, "Oh, agriculture." Okay, so, ... the Dean of Men for the College of Agriculture was a Professor Helyar. He was called the director of resident instruction and a great man and he had a bullpen of probably about, say, twelve secretaries. I was the office boy, the gopher, "Go for stamps," that sort of thing and a mimeograph machine, where you get the ink all over your fingers, ... I don't know whether you've seen them, but they were really bad. There was one thing about most of the women there, they'd been there for many years, guess what? They literally didn't speak to one another and would say things like, "Hey, Lou, the next time she says that, I'm going to break my handbag over her head. Now, you tell her," ... and here was a kid in the middle of all this, with Professor Helyar behind the locked door. [laughter] He didn't know what they were up to. ... Anyway, I could work any hours that I pleased and I think I made, say, forty-five cents an hour, but forty-five cents was a lot more then than it is now, of course.

SI: Was this an NYA job or a job offered by the college?

CS: No, I don't know who paid for it, but I just know that that's what I got. So, as I say, I could work and, sometimes, I'd be so broke, I just skipped going to a lab or something, but, regardless, somehow, I must have done all right, lab or no lab. I got a State Scholarship after that year, ... after my freshman year. Not knowing if I'd get the State Scholarship, I had to work like a demon that summer and I got a job, through a friend, at Campbell Soup in Camden. I lived in Haddonfield, outside of Haddonfield, as I told you, now, in Delaware Township. My job was in the shipping department and they had to keep a record each day of what was shipped out, all over the world. Now, a problem is that with canned items, particularly tomato items, every once in a while, they explode, with the microorganisms making gas and blowing them [up]. So, thus, in warehouses scattered around, Campbell Soup would keep these cases of soup for about a month before they would ever distribute them, then, to the stores. We had to know where each can of these millions of cans was going. We couldn't go home until everything balanced. Here are the number of cans that were made, here are the number of cans that we were accounting for, here are other cans that have been ... in storage for a month somewhere, all this had to balance. We couldn't go home without that. Sometimes, there would be a case ... aimed at a little store with six cans of tomato soup, six cans of vegetable beef and so on. Now, suddenly, six cans can't be accounted for. Why, we would be really working, so that everything would come out and we could go home for the day. Anyway, it was a good training job for a kid, just to see the hum of industry and what you have to go through to make a living. So, then, I went back to Rutgers. Again, I'm still working, although not as furiously as I had to when I was a freshman. Freshman [year] was really tough and I can't really, other than the same acquaintances, ... think of anything outstanding to talk about. However, ... December the 7th, ... I was walking from the library back to my room and some guy coming the other way rushed up to me, "The Japanese," Japs, they called them, "have bombed Pearl Harbor." It was a Sunday. So, everything changed, of course. Quickly, Rutgers became, for the rest of my stay there, all turmoil, people joining [up]. The first two years, you were in ROTC, but ... just as a buck private and the courses were really easy, but we would be doing mapmaking and things of that sort, and then, a highlight, at the end of each year, would be a review over in the stadium. Now, the students who had gone on to advanced training were juniors and seniors. They had been told that a cat walking across a bridge with its paws in sync can knock down a bridge. So, now, "Okay, break step." We, of course, being carefree freshmen and sophomores, would be, for the first time in our lives, really in-step, that Landing [Lane] Bridge they call it. Do you know where that is? It parallels Route

18. We would try to knock it down. ... At that age, you have nothing to lose, really, [laughter] ... but, then, quickly, people would get into different programs and another highlight, un-highlight, really, would be that I had been in a surfing accident, body surfing, where you use your forearms and slide around. I had been thrown over and flopped on my back. I went through two operations, because of infection in my lower back, in a local hospital and it sort of changed my whole life, really, but I had to drop out just as I started the, I'm trying to think now, I can't remember, either the first or second semester. I skipped a semester, in other words, and, through a friend, I learned of a job at a DuPont plant, out on, I think it was called New Jersey Avenue, parallels the railroad, and DuPont had a fairly large plant there. Now, the lab was run by an ex-Rutgers chemistry professor, his name I better not use, but he was a very large man and he and a very large daughter lived across the street from the plant and, every Friday, we would have, in the plant, the lab, a spaghetti dinner for all the employees, big scale, and ... the sauce would be made by the wife of one of the technicians and was really great sauce and meatballs and the water to heat the spaghetti would be cooked over in the lab director's apartment, second floor, across the street. Now, then, we would be monitoring the cooking of the spaghetti and the question, over the years, had been, "Is it done?" Now, what we would do is throw it against the ceiling and if was ready to ... finish cooking, it would stick to the ceiling, but this had been going on for quite a long time and, after I went back to school, I heard that the landlord had come in, finally, [laughter] and discovered this and booted the lab director and his daughter out, but, anyway, it was good training for me in the lab.

SI: What did you do at the lab? What did the lab produce?

CS: Right, okay. When I got the job, the lab director said to me, "Now, I've been here X number of years, mind your own business, just do as you're told, don't ask questions." I hadn't been there a week, but I knew everything going on in the plant, because there were only four operations they were engaged in, and I was sent around to do sampling. Now, one problem was that upstream from us was a battery company and, every once in a while, to look at the acidity, it would plummet and we would call the battery company, you know, with sulfuric acid, and say, "Hey, you've dumped another load." "Not us," you know, it's all ... "Not us, not us," but it was dissolving our plant, literally dissolving the plant. So, one of my jobs, with a little color meter, was to monitor this stream, which flowed and probably still flows through that area. We were irradiating fish liver oil for Vitamin D and one thing I remember was that the bioassay was to take the tibia of a chick who had been fed feed with some of the Vitamin D concentrate, just to ... determine how good it was. There was a boy who was not much swifter than I was, let's put it that way, who would take a chick's legs between his fingers and hit the head on a board to kill it and he had to do this by the hundreds, because we needed all these tibias to ash and, depending on how much ash mineral, we would be able to tell whether the Vitamin D was doing its job and what level it was in and there were several others in that plant. If you buy some expensive perfume, very likely, it is still made by some producer, such as DuPont, in those days. ... The distributor, then, who takes out page ads, puts it in little bottles, where, usually, the bottle costs more than the perfume, but you'd never know that now by what you or your girlfriend or wife would pay for the thing. The question is, the chem engineers, who would run the operations in the plant, BS chem engineers, had they been successful at making a batch that was good, in other words, had no particular, unwanted impurities? These are mixtures of chemicals, but, if you say this is an expensive perfume, it isn't the first odor, it is the lingering odor, in other words, a

slightly higher boiler, and that's what determines whether this is a good or a bad perfume. If it's a bad batch, they just get rid of the whole thing. ... In those days, at least, you couldn't really instrumentally tell which was good and which was bad, so, they had a French employee who was rumored to be the highest paid employee in the ... whole DuPont Corporation. He had an office with just a bare desk and a chair and a little ... glass container with strips of filter paper coming out and we thought he had a rather large nose ... and his nose was his living. So, the chem engineer would bring in, in a stoppered container, this would-be perfume that we were then going to distribute all over the world. He would take the cover off and he would dip, just a little bit, a strip of filter paper in, and then, he would close his eyes and he would waft it under his nose, and then, he would either shake his head, yes or no, and, if he said no to the chem engineer, production chem engineer, this was a big disaster. [laughter] ... Then, I went back to school and the next thing I can remember is that on Easton Avenue, in a high, maybe four-story house, across the street from a fraternity called SMU, I think it was, we called them the Sammies, and the two sides used to fling records ... and break one another's records off the house, but the fraternity was just renting this place and, at the end of the story, we were being booted out for not paying the rent, because the fraternity was dissolving with all the people going off to the war. ... I lived there as a boarder, as it were, because they needed money, but there was no question of joining the fraternity. The fraternity was just about to go up in the air and, not only that, I had not enough money to join the fraternity anyway, nor did I have any desire to, other than the fellows that I knew there, but, of that group, Alpha Chi Rho had a lot of the leaders of the campus in this poverty stricken place. A lot of the big athletes were there. One guy, the third baseman, I can't remember his name, went off to the pros, but, anyway, as I say, people just coming and going and, also, sort of living there illegally was a graduate student and I can't remember his name and I wouldn't give it anyway, but he had been in a bobsled accident and he said, "Now, I'm being drafted, but it doesn't matter, because I'm going to go down to the examiner at the draft board with my X-rays." He came back in an old fashioned sailor suit, almost looked like the British Navy, [laughter] the unhappiest sailor you've ever seen in your life. The same guy was over at Columbia, in law school, as he lived at Alpha Chi Rho. He told me, at least, that a law student in the first year is allowed to try cases in local courts worth twenty-five dollars or less. The Chinese laundry up on the next block on Easton Avenue had lost his shirts, so, he said, because the man that ran it spoke no English, really, and we often wondered how he could run a business, but he could count money, but this law student said to me, "Come on, I'm going to tell this guy [that] I'm going to sue him," and we went down and he tried to get over to this poor man, and often foreigners have a big fear of the police, you know, who about died when he realized what was going to happen, but, luckily for him, and unluckily, probably, for the US Navy, this guy shortly went off ... to the war. [laughter] Okay, so, that was Alpha Chi Rho. In my senior year, I had the best job on the campus. Where the Rutgers Library is now were four Georgian mansions. In one of the Georgian mansions, I was what was called a preceptor. Now, you may never have heard of Rutgers Prep School. Infants ... were registered at Rutgers Prep School because the staff, at that time at least, were on the Rutgers University faculty list. So, I assume that those kids were getting a good education, but I had ten students, nine of whom were seniors and were no problem at all, because they were ... under big pressure from home to do well in what you now call the PSATs, but I forget what they were called at the time, but to do well in those. ... They were real students and didn't fool around. I had my own room, whereas in Alpha Chi Rho, I was in four in a room in a slum. Now, I had my own room and all I had to do was check everybody in in the morning, but, then, I only had to be on duty

every other night. Now, in that prep school, at that time at least, life was run by bells; bell, you'd get up, second bell, you'd go down to the pool room and get checked in, third bell, you got your bed made and ready for breakfast and so on; food, very good, incidentally, very good. Then, in the afternoon, they were great on activities. You had to be on a team of some sort, didn't matter what it was, and I could wander around in the afternoon and look over what they were doing, but I didn't have to take part at all, and then, as I say, real good meal, but, after the meal, in about ten minutes, "Okay, go to your rooms and, in another five or ten minutes, sit at your desk." The program is, and what they pushed, ... that a student will sit at his desk for a certain number of hours. He will stare at a book with a light turned on. Now, a rebel will look out the window, look at the ceiling, fidget around, ask if he could go to the bathroom, but, sooner or later, this goes on five nights a week, the easy thing to do is to read the book, which, in my time at least, very few high school students had ever done seriously. Now, here were kids [doing it] five nights a week, so, it was no wonder that they would do well in testing, compared to the average high school kid, public high school kid. So, then, finally, it was the end of the year and I went off. I probably would have stayed there the rest of my life. [laughter] It was really soft living, very good food, my own room and so on. I went with a friend whose sister had a shack in Mantoloking. Mantoloking, now, has plush homes along the ocean and ... on the bay, but, at the time, you could sort of reach out of a window and feel you could touch the next shack, but, really, great for people just batching it, the beach right there. So, meantime, my back's still acting up, so, what to do? So, I heard of a plan that the Army had of a school where they would train people, some of them sergeants, some of them, in my case, civilians, to be ammunition experts and the first school was at the Philadelphia Cargo Port of Embarkation, the largest ammunition port in the world. I don't know whether you know the Philadelphia Airport, but it's a very big airport, and as you sit on the runway there and you look over at the river, you can still see the piers right along the river. ... Ammunition, during World War II, was made in the Midwest. All civilian traffic stopped as these ammunition trains came ... to the port and we were two parallel tracks, so that you could unload one, with a metal plate between cars, so that the ammunition can be wheeled across, and then, picked up and put into the ships, where we were loading five ships at a time. After some months of that schooling there and sort of on the ground training, I then went off to a nine-week advanced school at a place called Delaware Ordnance Depot in Penns Grove, New Jersey, right on the river. It was just every detail of ammunition you can think of, how it's made, how it's taken apart, how it's destroyed, how it's shipped and so on. On returning to the Cargo Port of Embarkation, as a kid, I had really great powers. I could stop anything, ... because we had the Army, the Coast Guard patrolling off the coast, because German subs would try to come up the Delaware Bay, they were very bold. It was all a very hectic time and stevedores were paid big money, but it was brutal work and probably must have ruined the backs of many men. On a street corner somewhere, I assume mostly in Philadelphia, they would shape up, they called it, and the contractor for a particular hold on a ship was being paid by the Army, by the Ordnance Department, depending on how much weight he could put from the train into the ship and he had his own men down, the carpenters they were called, ... and they were wild men, with saws and hammers, putting up the bulk heading that would hold the cases of ammunition, so that they didn't shift during the voyage. Now, if a person were a deadbeat, then, he would not be rehired, because he would influence, thus, the income of the man who was in charge of shipping for that particular hold. Usually a ship has five holds; there is a middle, top and bottom. One problem is, like, one of my ships in a convoy disappeared, just blew up, and G-2, the Army's intelligence people, were after

me as who was responsible, on paper, for ... this whole ship. "What had happened?" "Had I," I suppose, "put in a fuse to blow it up at a certain time?" but I pointed out, you know, how many holds on a ship, two parallel trains, hundreds of men working that I'm responsible for, but ... in no way did I know how this could have ever happened out of all these hundreds of ships. I did do another one. We had a poor regard of Navy ammunition. Now, this is just almost hearsay, but, I think, based on some facts. Navy ammunition, in those days, didn't have as many precautions as Army ammunition had and, we felt, [was] very dangerous. So, when a ship would come into a city, like Philadelphia, for example, they would have to discharge their ammunition, because on the ship would be what is called the Armed Guard. These would be sailors who would man, usually, maybe, a .155-mm gun, which, one, they had never fired, I believe didn't know how to fire. My brother was a signalman in the Armed Guard, so, he would tell me these things. So, they were really helpless, but they'd be on these Merchantmen, supposedly, [laughter] to shoot at poor old subs and, anyway, that ammunition had to be offloaded before they could actually enter the locale of a city. So, now, this would be collected, and then, would be sent to central storage and I took a convoy one time. ... In the Raritan Bay, if ever you look at it, there's a long pier in an area of a place called Leonardo that juts way out into the Raritan Bay and that ships can tie up to. If ever you go on Route 34, you'll notice fences for many miles, this is the Navy ammunition area. We were out on the pier, moving stuff from other ships that had just landed, going in there, rather than go closer to New York City. The next day, a destroyer disappeared, not one I had been associated with, but, anyway, those were dangerous times.

SI: Were there any accidents in the loading area?

CS: ... Not that I can think of, no. There are a lot of things, like, the civilian crews on these ships were from all over the world and with ... [the] usual funny backgrounds and so on and, let's put it this way, they would drink a little and so on. ... They had one fellow, I think, initially from China, ... [who] was caught dipping his clothes in gas, and then, ironing his shirts or pants or whatever they were. So, there were all sorts of possibilities, but none, really, that I can think of. One New Year's Day, I had to work ... and remember that the Japanese had come down and taken over one-third of the Earth and this had included the Dutch East Indies and they had an awful lot of ships. ...

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CS: ... About the Dutch ship, okay. ... I was invited, on New Year's, to go out to dinner and there was ice and snow all over. ... The captain, and his, maybe, first mate, maybe second mate by then, would be on the ship, still responsible for this, because what was to happen was loading, taking on ammunition, when a space would be cleared at our dock. So, I come out to dinner, but, since the ship was empty of tonnage, there's this Jacob's ladder that goes up the sides of ships, but, since it was not low in the water, it was really high. So, I had to climb an icy ladder maybe three-and-a-half-stories high or so to get up and step onto the ship, which I really regretted, after going through that and having to go down on the way down, but I assume a very nice dinner, really a great ship. Okay, now, finally, V-E Day. Oh, I might tell you, ... last but not least, I had met, at the advanced school on ammunition, a girl sent from a Depot called Lassen Ordnance Depot in the California desert [who] had been sent there for training. ... In each class, there'd



probably be about fifty or sixty people and one thing led to another and she had to go back to her job in California, at the end of the class, but she worked out a transfer back to ... this Depot, as I told you, the Delaware Ordnance Depot, to be an inspector there and to become my wife. Well, my memory of the class, there's only one thing in it, that a demonstration was made of how dangerous black powder can be, if it's confined, and, as the students were all sitting on the ground around this guy demonstrating how to safely destroy black powder, it blew up and almost killed him. That was quite a demonstration, really, but, anyway, that was Delaware Ordnance Depot, rather small depot for ammunition, but a big training center. I had resigned from the Army, rather than move to Seattle, which is another story that I'll get to in a moment, but we ... had moved near 900 North Broad Street, in back of a lab, Wyeth, which is a big pharmaceutical company, which you would know if you were in the medical business. Wyeth belonged to what was called American Home Products, the ... second largest holding company in the whole country, who had bought up about fifty little ethical pharmaceutical houses. Ethical drugs are things you get by prescription. Wyeth had the best name, so, they brought all of these, or many of these, fifty together, but called them Wyeth and they had a six-story lab there. Now, the reason we went there was, one, that I didn't want to move to Seattle to work in the Port of Embarkation. Wyeth was scaling up from little glass vessels, penicillin. This was the beginning of doing this, because it was really needed for wounded people and so on, and so, I was in on the scale up of that, and so, I stayed there until after V-J Day, in other words, ... the end of World War II, with the dropping of a couple of atom bombs. Please stop me if you wish me to continue. The guy who was my boss in ... the analytical lab said, "You're going to graduate school," and I said, "Yes, yes, I know, but my wife is now pregnant." "No, goddammit, you're going now." So, he found me a job. The State Chemist of Indiana is a source of Purdue University's money. When I went there, Purdue was the largest technical university in the world, not the largest university, but the largest technical university, or, as we said in those years, everybody carried a slide rule, which, of course, is a joke now. Engineers by the thousands were coming back from the war. ... The reason Purdue got their money via the State Chemist, who was the head of the biochemistry department. In big agricultural states, if you buy a container of animal food or seed or fertilizer, there'd be a tag on it which has been bought from the State Chemist, which says this bag or container contains, now, it could be, I suppose, a hundred percent sand. It doesn't matter what it's to be used for, it just matters that you're saying what's in that container, that's the law and is the source of Purdue's money. Now, they run a big control lab, control meaning you run ... tests, percent water, percent fat, percent nitrogen and so on, where nitrogen is a way of telling how much protein is there and that's big in animal food, of course. That's where real money is, trainloads of animal foods, even in those years, millions of dollars, and then, they would have inspectors out on the road who would pick up these samples, bring them in. They'd be analyzed, but this was the beginning of pesticides and there were strange and unusual analyses to be done and that's why they hired me. So, I went out to do that and they gave us a house on the campus. They cut our grass, they did everything. When my wife came out, with our first child, we stayed in the Union at Purdue, which is a hotel for visitors. To move into our just completed house, being put up by the thousands, we were in the first group. The furniture, when it came, had to cross a pile of dirt, ... just to get into the house, but, quickly, they put in sidewalks and lawns. ... Purdue is a first class operation, you know. In fact, the way that they did things, they bought a whole Army camp in Kansas and moved it over, and then, divided each barracks into three and they now had three instant apartments, just [had] to put in the plumbing and electricity and so on. So, students were in that, both undergraduate

and graduate students, by the thousands, but I was in with young assistant professor types, you know, and had a great time, because nobody had any money. Nobody was trying to fool anybody, just get on with your life, rise in your profession, but don't worry too much about it. So, it was a great time, great time for little children, and we made friends there that we still have to this day. So, I got my PhD in the fall of 1952 in biochemistry and had co-written a book on my field, *Polysaccharide Chemistry*, and came back to work for the Celanese Corporation, which you many never heard of now, but, if ... you were a woman wearing clothes, you would know them. ... I had helped develop a fiber called Arnel, where if a woman wore, say, a red dress on Christmas Eve, that was Arnel, or a slip, but, in addition, we were in acrylic fibers, polyester, nylon, polypropylene and so on, but ... mostly I went there because my mother was living in suburban Philadelphia, in a town called Audubon, down near Haddonfield, where I'd gone to school, and so, we came back to live in a town called Basking Ridge, you ever heard of that? and we stayed there a year, and then, we lived above a town called Millington. We lived up on a hill, in what had been an old hunting lodge. We probably stayed there about four years, then, we bought our own home down in the valley, the first housing development in that whole Basking Ridge-Summit area, and we bought the house for twenty thousand dollars, sold it twelve years later, probably for thirty, but, now, those houses sell for 125,000. [laughter] One story about the house is that we were having children and we now had, in that house, after twelve years, seven children. ... One was in Vietnam, after I told you, he had spent a year at Rutgers, he was in Vietnam, one was in law school, Rutgers Law School, that's the second boy, the third girl must have been in high school. I was ... on the high school [board], Watchung Hills Regional High School. At that time, we were rated one of the best ten public high schools in the United States, because ... the school had been founded by Bell Lab people and what we were running was another Rutgers Prep School, [laughter] a New England type prep school, but the voters finally caught up with us. We had staff that were very good in their subjects; in other words, the science teacher was really a scientist. You can't say that, probably, these days, but he was very poor in being trained at a teacher's college in teaching methods, but ... they had no trouble at the school, as I say, but, finally, I was the president, the newly elected president of the board, and the teachers had gotten a little on the wild side. One music teacher would take sophomore girls to his apartment after school. There were all sorts of things the public kept telling us [were] going on. So, finally, the superintendent was leaning on the wild men and their leader, a Harvard PhD, came in and threw his resignation on the desk of the superintendent and, thus, if he left, his friends would leave and, thus, we would lose a lot of people that knew their subjects, but had other problems. That night was a school board meeting and the supporters, a big mob of these guys, came to the school board meeting. "We will now have a vote on whether or not to accept Dr. X's resignation;" vote, nine to zero to accept it, whereupon the audience got up and left [laughter] and that was the end of that, but, anyway, it was good training for me, really, but a very good school. My kids liked it. Okay, the other was that I decided to build a putting green. I liked to play golf before my back really acted up and the *New York Times* had a page, the *Sunday Times*, on how easy it is to make a putting green. So, I had a large lot and, in the back, I selected a place with drainage. I got in the proper soil, proper top dressing. Over in Rahway, there's a shop that sells parts for greens and so on and I got a regulation cup and a pin and my wife put our house number on the flag and I could chip with a five-iron and putt, and then, I couldn't buy a hand-pushed mower. When you mow a green, you want the grass not to fall on the ground, you want it to go into a bucket. So, it takes a special type of mower to throw it forward into this bucket. Well, the only ones, by then, were motorized and I'd just be faced with

another ... motorized lawn mower. I already had trouble with the one I had, before I learned how to fix my own carburetor. So, when I sold that house, the first person that came to look at it, I also had a good basketball set up at the end of the driveway, the saleswoman didn't get out of the car, saying to the guy, a young civil engineer, "You won't be interested in this one." He came in and saw the putting green and the basketball set up. Literally, he didn't know there were rooms inside the house and bought it, [laughter] while that idiot sat in the car and got six percent for selling the house. Isn't that something? ... Anyway, that was the house there. I was still at Celanese now. I had been on one project with Hoechst. The town of Hoechst in Germany is an old part of the chemical business. ... We were in a joint project with them, traveling all over Germany and so on. I had been going for a year or more, out to Avon Lake, Ohio, where Goodrich had a big chemical plant, and we wanted a fiber we were making there, an acrylic type fiber, to be made in Germany, in a joint effort with us at Celanese, but their marketers didn't like it, so, that particular project was pretty much a bust. Later, still at Celanese, ... we bought from Hoechst, who had a plant in Germany that I'd better tell you about later, but, anyway, the scheme was to copy that plant making acrylic fiber, which was very competitive with DuPont's ... Orlon 42. If you buy a real good Orlon blanket or sweater or carpeting, that's Orlon 42 and the Germans were making this themselves. Now, being a skeptic, I had thought they had just stolen it from DuPont. They had not. ... They didn't know about statistical experimentation of planning and getting more data from one particular run. They would just change one thing at a time, for years, and they arrived at Orlon 42. [laughter] So, we were now moving this to Mexico and we had a team and we had all sorts of multi-lingual people and we had a Hungarian chemical engineer, we had a Norwegian electrical engineer, who, unknown to the big chiefs in either company, wouldn't speak to Germans. He had been running, in Oslo, the electric plant and the Germans came in and threw him in jail. He said, "I will never speak in my life to a German again." So, here, we now have him on the team to be translating what the Germans are doing over to Mexico. So, anyway, that was just the team and I spent a lot of time on that. It was a big success.

SI: How soon after the war was this?

CS: ... This was about six years after the war, where one story might be that we would go over, sometimes, in a group and smuggle coffee to the Germans, but the customs people would just turn their backs. I mean, we weren't really smugglers. We were just taking coffee over, but it was a good time to be in Europe, because American money was good and Europe, ... with the Marshall Plan, was just really recovering and I would often, with my first class ticket, ... stop over, change it for a tourist ticket and stop over and see one of the ... [big]-name places in Europe. So, I went back and forth ... a number of times and, several times, I stayed over there for six weeks and so on, but we had guys who stayed there for two years, they liked it so much. We were in a little town on the Danube called Kelheim, Kelheim-Donau, it's called, and there were, in this little town, seven breweries and one man, who owned our hotel, owned the biggest brewery, he owned a little supermarket, a little jewelry store and probably other things. He had been one of Hitler's hit men, Erntaler. He had helped them rescue Mussolini from the mountaintop, the first time the Italians arrested him. So, anyway, that was one of my Celanese experiences. We then moved, ... sort of wanted to be on tidal water, ... with our remaining five children at home, to, I don't know whether you know Rumson and Fair Haven, Sea Bright. We moved to Fair Haven on the water, in an old house now worth more than a million, but, at the

time, ... we probably bought it, say, for sixty or seventy, I don't know, something like that. We had our own dock and float. I had my boat there, just great. In Sea Bright, we belonged to a little beach club there and so on. I loved it there, but, because of my job and since I had a biochemical background, Celanese started to look at agriculture and they did it with non-agricultural people. So, they started a lab in Corpus Christi, where they already had a chemical lab. So, ... from the rather large Summit lab for Celanese, I went down to Corpus Christi for several years and the effort grew. We had teams of people doing tests all over the country and so on and [it] prospered and they then moved me back to Summit to really enlarge it and [to] use the Summit analytical facilities and [they] built me a greenhouse and so on and this lasted about, after two years in Corpus Christi, ... five more years riding high in the corporation, but, then, the people controlling Celanese decided that they had to make the company smaller, so [that] it could be grabbed by some really big outfit like Hoechst and here was agriculture, with these wild men running all over the country running tests, selling products with carload lots of chemicals for preservation of grain. What to do? So, they said to me, here, I'd grown up with all these people now, "We're going to close down agriculture, because ... it requires too much explanation to a would-be suitor. They like things simple on a piece of paper and here are these wild ones with agriculture." "What's this about agriculture?" ... They folded up my group and I had an entomologist who went off to another company. ... I had an agronomy expert who went off to ... a company I won't name. He became a one-man toxicology company and so on, but, anyway, there am I, the senior guy, a guy that everybody knew, "What's to happen to Lou? Just keep a low profile and we'll see what we can develop for you." I said, "No, I don't like that approach. Make me an offer I can't turn down." They gave me the best offer I had ever heard, since I was one of them, the best offer I've ever heard to this date, and here I sit. ... After my vacation was over, I went the next day to Mobil Oil, through a friend, who I had had as a consultant, who now had been named the head of Mobil Oil's toxicology lab, where he was to form a world-class lab, which he did, ... in what Mobil Oil called its Princeton Lab, actually, closer to a place called Pennington, out in the country. They built a world-class lab and recruited people from all over the world. However, these were biological people. These were physicians, molecular biologists, analytical chemists, instrumentation type chemists, entomologists for water fleas and so on, the type of veterinarian who deals in slides, looking at slides, looking for cancer and so on, and here were these people who were saying things like, "Hey, chemicals are going to kill you." Some of these Mobil people are oil salesmen, essentially, who deal in the Middle East and so on. So, they said, "We've got to get somebody in here who's gone out in the real chemical world," because these chemical people are killing this guy that I said had brought me in, who had been an ex-professor of toxicology and so on, and they had recruited pretty good people. ... The company wants somebody to come in, not to say that these people are wrong, but to say that they have a reason for running this experiment on our products. If they get ... what they consider a bad answer, is this reproducible? If they ... get a good answer, is that reproducible? Does it really mean anything one way or the other? I had to write the monthly summary, which, believe me, was a real chore, because I had to go around to these guys and go over what they were doing and what they were writing and what they wanted their monthly summary to be and we weren't actually trying to hide anything; we're just trying to ... keep ridiculous things from being said that were not true. So, it was pretty good, but, ... after seven years of this, it was trying on me. I had been already retired from Celanese; here I was, at Mobil Oil seven years. So, I said, "Hey, I'm going to be sixty-five, I want out." "Question: Who's going to write this report, one of these screwballs? Would you please stay? Sign on that you're

going to stay,” [laughter] and they’re paying me so much money, I couldn’t stand it. So, anyway, I agreed to stay and, two years later, the price of oil fell below ten dollars a barrel. Now, in the oil business, this is panic and they said, to another old person and to me, “Hey, if we give you more time toward your retirement, will you ... agree to retire, so that we can say on the books that we reduced the head count by two? Just say ... you’ll retire; you don’t have to say when.” So, I said, “Okay, I’ll leave at the end of summer,” and, as the end of summer approached, I got apprehensive. “How am I going to stay busy? I can only ride in my boat so much, I can only walk on the boardwalk so much, I can only sit on the beach, I can only go around to plant shops. What am I going to do?” So, the guy who was the commissioner at that time of DEP, [Department of Environmental Protection] New Jersey DEP, had come through Mobil saying to people he knew, “Hey, I need somebody that’s been out in the real world, who can deal with both sides, to the stonewallers in industry or to the do-gooders who have ... not many facts, really, but just know something’s bad. We need somebody that can talk to both groups.” So, they said, “Hey, Lou’s going to retire during the summer.” I said, “No, I wouldn’t be interested,” because I had a very poor regard of DEP, ... but, as I say, as the end of summer came, I got apprehensive. So, I said to DEP, “I’ll come for a year and try it.” So, I stayed a little over three years, because I found it very interesting, really, and did some good things for them, I think, and they seemed pleased and I had to appear in court for them, stuff like that. So, I finally said to them, “Okay, I’ve got to get out of here.” ... Finally, at the end, bookwork wouldn’t let me leave. I had to stay another month, ... [until] the end of January. The next day, we were on the Cape May ferry, heading south. I should have mentioned, we have four Rutgers sons and three Rutgers daughters-in-law.

SI: Thank you very much. This concludes our interview with Dr. Charles Louis Smart on April 30, 2004, with Shaun Illingworth and ...

JM: Joe McGrath.

CS: Okay, thank you very much.

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Reviewed by Shaun Illingworth 7/11/04

Reviewed by Sandra Stewart Holyoak 7/20/04

Reviewed by Charles Louis Smart 12/4/04 & 1/17/05