earlier this morning.

People's Exhibit 164 would be the notes of Dr. Deadman. Again, I gave those to Mr. Insero.

(Marked.)

THE COURT: Is that it?

MR. BOLEN: Yes.

THE COURT: Okay, bring the jury in, please.

(Whereupon, the jury enters the courtroom.)

THE COURT: All right, call your next witness.

MR. BOLEN: The People would call Linda Duffy.

L I N D A D U F F Y, a witness called on behalf of the People, having been first duly sworn, was examined and testified as follows:

THE COURT CLERK: Would you please be seated. Would you state your full name for the record, spell your last name and state your occupation and business address, please?

THE WITNESS: My name is Linda Duffy, D-u-f-f-y. I work for the Westchester County Department of Laboratories and Research in Valhalla, New York.

THE COURT CLERK: Thank you.

THE COURT: Proceed.

MR. BOLEN: Thank you.

DIRECT EXAMINATION

BY MR. BOLEN:

Q Miss Duffy, how long have you been associated with the Department of Laboratories and Research, and what is it that you exactly do for that particular agency?

A I worked in the Forensic Serology Section for five years.

Q Try to keep your voice up.

THE COURT: Speak into the microphone.

A I worked in the Westchester County Forensic Serology Laboratory for the past five years.

Q Your voice is trailing off.

A I worked as a forensic serologist. I

examine evidence for the presence of physiological stains, such as blood, semen and saliva.

Q How long have you been doing that?

A Five years.

Q At this time could you briefly and concisely tell the ladies and gentlemen of the jury, aside from your current work experience, what you have been doing, what your training and background is in that particular area?

A Before joining the Westchester County Department of Laboratories and Research I worked for six years as a medical technologist in the blood bank in the Northern Westchester Hospital.

During my time there and during the time I worked for the Westchester County Department of Laboratories and Research I've attended the annual meetings of the Northeastern Association of Forensic Scientists to update myself on current techniques, also several workshops each year.

My background includes a masters of science in forensic science from the University of New Haven, and a bachelor of science from

Hartwick College in medical technolgoy.

Q Prior to today, and in other courts of this particular state, have you testified with respect to the area of serological analysis as it pertains to blood and seminal fluid and similar type body fluids?

A Yes, I have.

Q Would it be fair to say that your particular area exclusively deals with the area of forensic bodily fluids and serology and fluids?

A At present I'm also training to do DNA analysis. That does cover forensic serological analysis, I believe. So, yes.

Q So, my questions from here on out will deal exclusively with your serological analysis of blood and any other body fluids you have been called upon to examine in connection with this case; all right?

A Yes.

Q At this time I would like to direct your attention to specifically November 17th, 1989, sometime in mid afternoon of that particular day.

Did you have occasion to receive from a Deputy Medical Examiner by the name of Dr. Louis Roh certain items that he might have removed during the course of an autopsy he performed on the body of one Angela Correa --

THE COURT: Would counsel please approach.

(Whereupon, the attorneys approach the bench for a discussion off the record.)

MR. BOLEN: May I confer with counsel for a second?

THE COURT: Yes.

(Whereupon, Mr. Bolen confers with Mr. Insero in a discussion off the record.)

Q Miss Duffy, during the period of time that you have been employed by the Department of Laboratories and Research how many times would you say approximately you have testified in the particular field of serology?

A In excess of a dozen.

Q On each of those occasions were you qualified to render certain opinions with respect

to your analysis and test results?

A Yes.

Q Would those prior occasions that you've testified, would they have occurred within the State of New York?

A Yes, within Westchester County.

Q Have you ever testified in any courts of law outside Westchester County within the State of New York?

A No.

Q Would it be fair to say that you have not testified out of New York State?

A That's correct.

Q You alluded to one organization. Do you belong to any particular associations or organizations in the field of forensic science in the criminal aspect, and more particularly the serological aspect?

A I'm a member of the Northeastern Association of Forensic Scientists, and I'm currently a member of the Society of Clinical Pathologists.

Q By the way, have you in any capacity ever taken any additional course work, other than

the work that you've alluded to, with respect to your bachelors degree and masters degree?

A I'm not sure I understand.

Q Specifically have you ever attended any other courses given by a state agency in your particular field?

A Yes.

Q Could you tell us about that?

A I attended several seminars in joint connection with the University of New Haven and the Northeastern Association of Scientists in New Haven in several new techniques in serological analysis. I also attended the FBI Quantico training course for DNA analysis, completing six credits with the University of Virginia for that work.

Q You've indicated that you currently have a masters in what?

A Forensic science.

Q Could you tell us at any time, including the present time, whether you're working towards a further post doctoral degree in connection with your particular field?

MR. INSERO: Post doctoral?

MR. BOLEN: I'll withdraw that.

Q Are you working forwards a PhD in your particular area?

A Not at this time, no.

MR. BOLEN: Your Honor, at this time I would offer Miss Duffy as an expert in the area of forensic science, specifically the analysis of serology and related bodily fluids, including seminal constituents.

MR. INSERO: I have no objection, your Honor.

THE COURT: All right, she's so certified as an expert in the field.

Q A few preliminary, very general questions, and then I will ask you certain specific questions with respect to certain tests you performed.

In connection with this case, whatever work you might have done in connection with items that might have been submitted to you for analysis either from the body of Angela Correa or any clothing that she might have had or any other related evidence, I wonder, one, if you could

briefly tell the ladies and gentlemen of the jury in a chronological sequence and in layman like terms, how you go about testing for the presence of blood, distinguishing between human and animal, and then how you go beyond that to determine blood type, including whatever enzymes you're able to detect from the specimens that might be submitted to you?

A On blood only?

Q Yes, just on blood only.

A When I examine physical evidence submitted to the laboratory I visually examine it for stains. If a stain appears to me to possibly be blood, the first test I subject it to is a chemical test. It's called the presumptive test for blood. It's a very simple chemical test involving a color change. If this test comes up positive, then blood is present. But it could be human, it could be animal.

The next test that I do is an immunilogical test to determine whether it's of human origin or animal origin. If that test comes up positive as human origin, I then further subject the stain, if the quantity is sufficient.

At each step I can stop if I don't have enough to do any more analysis.

At this point once I've proved that it's human in origin, if there's a very small quantity I usually go ahead and do what's called an electropherisis on the stain. There are certain enzymes in the blood that perform functions that they can be typed like a blood can be typed A, B, O, that sort of thing. These enzymes perform the same function in everybody, but they can be distinguished from one person to another.

I perform that test on the bloodstain, get a result or no result. If there is sufficient quantity, I then go ahead and try to find out if I can find an A B O antigen present in the blood corresponding to the blood types that most people are present with, A, B, A B and O.

Q Do you do an RH factor?

A No. An RH factor is very difficult in a dried sustain. On tubes of blood from autopsy victims and other tubes submitted to the laboratory we will perform the RH test, but not

on a dried stain.

Q Now, when you're dealing with a stain, as opposed to a fresh tube of blood drawn from a live or a dead person, Miss Duffy, could you tell us in the course of your analysis that you performed step by step, you indicated that you made the determination whether you would do certain tests or not do certain tests based upon the amount available to do the test?

A Yes.

Q Similarly, in the course of testing a suspect stain, when you do the test do you, of necessity, use up part of the sample when you do that?

A Yes.

Q Now, I've asked you certain questions with respect to blood. I wonder if you could briefly tell the ladies and gentlemen of the jury whether you are able to determine blood type from bodily fluid, other than blood? If so, how does one do that?

A Yes, it's possible to get a blood type from another fluid other than blood, such as semen and saliva. Eighty percent of the

population will secrete in their other fluids of their body their blood type. These are people who are called secreters.

What we do, in an immunilogical test we attempt to determine if we can find those substances that correspond with the blood type in the particular fluid or stain submitted.

Q Now, again solely with respect to blood and its component parts, from your vantage point as a forensic scientist analyzing stains, could you tell us what, if any, factors or what, if any, other factors would affect your possible results, and in what fashion?

A In relation to --

Q To determining whether there's blood or not. Do you understand my question?

A I don't think so.

MR. BOLEN: I'll withdraw it.

Q When you are given a stain, and assuming you have no personal knowledge where it came from or where it's been, in your ability to determine the blood type, could you tell us whether any bacteria or contaminants might have an effect with respect to the blood type?

MR. INSERO: I'll object to the question. I think it's a four-pronged question.

THE COURT: I'll permit it. Overruled. Maybe she can explain it.

A Well, all the things that you've mentioned are factors that determine the outcome of a particular analysis on a stain, the environmental factors that it's been subjected to, where it's been stored, how long the stain has been on the particular article. These all have an effect on my analysis.

I have had cases where there was known blood put on a particular item --

MR. INSERO: Your Honor, I'm going to object to other cases.

THE COURT: Yes, I think so.

MR. INSERO: Thank you, your Honor.

THE COURT: Maybe you can do it without reference to a particular case.

MR. BOLEN: If I could just move on to the next question?

THE COURT: Yes.

Q I've asked you questions with respect to blood and the analysis of blood. Let me now ask you, since you've already indicated you test for this as well, to briefly explain to the ladies and gentlemen of the jury from your vantage point, forensicly speaking, what the components of seminal fluid would be and how you go about and detecting the various constituents of the seminal fluid?

A Seminal fluid-- it's also referred to as seminal fluid, semen or seminal plasma. It's all referred to as liquid produced by the male reproductive organs.

Generally, the way I explain it is there are two main fractions of semen. One is the cellular fraction. This is the spermatozoa, the actual cell that contains the genetic material from a male.

The other, the liquid portion, contains various enzymes, proteins, and other materials from the male reproductive system.

When I test for semen, one of the tests that I can do is to look for the cellular fraction. If I find spermatozoa on a stain or an

article, the only place that spermatozoa can be found is in semen. If I find spermatozoa in a particular stain there's no question that semen is present on that stain.

The other way to test for semen is to do an immunilogical test we perform. There's a protein found only in higher order apes and semen. It's called P-30. If I find the presence of this protein then I know that semen is present on that particular article.

There's also another test. It's called acid phosphatase. That's an enzyme found in high levels of semen, and in other areas, but not to the extent found in semen. That's a simple color test.

Q Now, with respect to your analysis of seminal fluid, do I understand you to say that the two constituent parts from your vantage points would be the cellular or spermatozoa?

A Yes.

Q What did you refer to as the second aspect?

A The liquid portion. It's generally referred to just as semen or seminal fluid.

Q Now, during the course of the time that you have been employed at the Department of Laboratories and Research, have you, prior to your involvement in this particular case, been called upon to determine the presence of any seminal constituents from any swabs that might have been taken from the body of an individual during the course of an autopsy, one, from the vaginal area?

A Yes.

Q About how many times during the course of the five years that you have been working at the lab have you been called upon to do that?

A If I had to give a number, I would probably say between ten and fifteen autopsy cases of women with swabs.

Q During the five years that you have been there?

A Yes.

Q Now, I ask you the same question with respect to any swabs you might have taken from the anal area of any female upon whom an autopsy might have been performed?

A Each autopsy on a female victim has the

same swabs taken. So, the number would be the same, vaginal, rectal and oral.

Q Now, when you get these vaginal swabs, are there times when you do them yourselves?

A Yes.

Q And are there times when you it's done by a Medical Examiner and given to you?

A You mean the taking of the swabs?

Q Yes.

A No, I never take the swabs. That's done by the Medical Examiner.

Q Now, when you get a vaginal or an anal swab, how do you go about analyzing it? Do you just look at the swab itself, or is the swab transferred to something else to assist you in making that determination?

A As with any other stain I take an extract of the swab and do my tests on that. In other words, I put some physiological saline in with the swab, extract some of the material off of the swab with that saline, and I perform the test that I described, either looking for spermatozoa or doing in conjunction with the P-30 test and the acid phosphotase test.

Q Do you use anything other than the naked eye to make these determination?

A Yes. Each test is -- well, the test for spermatozoa I use a microscope to aid me in determining whether spermatozoa is present. The others we use various apparatus at the laboratory.

Q With respect to the utilizing of the microscope with respect to determining spermatozoa, do you somehow put a sample on a slide to do that?

A Yes.

Q When is that done in this process, and by whom?

A Are you talking now from a swab that I receive?

Q Yes.

A I would make an extract and make the slide myself, stain it. We use a stain that is designed to bring out any spermatozoa that are present, stains that are red and green. It's called the Christmas tree stain. And I would personally perform the analysis under the microscope looking for the presence of

spermatozoa on such a slide.

Q If one were to look through a microscope to see if there were any spermatozoa present, how would they reveal themselves through the microscope to you shape wise?

A In order for me to call it spermatozoa on a particular slide it has to really look like a text book spermatozoa. It must have a head with a neck, a mid piece and a tail sufficiently long to make a determination that this is indeed an intact spermatozoa.

Q Now, when you reference an intact spermatozoa, what does that indicate to you, forensicly speaking?

A That semen is present in whatever I took that extract from.

Q Now, if one were to look through a microscope and not -- and observe sperm, but it not being intact, what, if anything, can you determine from that, forensicly speaking?

A There are several reasons why they would not be intact.

Q Could you explain that to us?

A One can be just mechanical in the

physical making of the slide. You can rip the tails off. Also, the environmental factors that I mentioned before on the particular items or stains, bacteria. The bacteria will slice the tails off and separate them from the heads.

Q Let me follow up on that. You used the word bacteria. Could you please tell the ladies and gentlemen of the jury, utilizing the human anatomy, and particularly the female human body, could you tell us what, if any, impact urine and/or feces might have with respect to the detection of spermatozoa in an intact fashion, and if there's any difference between the two please let us know.

A Well, urine on a normal person without a urine infection has no bacteria in it. Bacteria wouldn't be a factor with that. The PH of the urine could have a negative impact on the spermatozoa. I'm not familiar -- I can't talk too much about that.

Q Fine.

A Fecal material is loaded with bacteria. Anything contaminated with fecal material, the spermatozoa would not remain intact for more than

a few hours.

Q In terms of determining the age of sperm that you might see under a microscope, could you tell us -- you've already described to us the term of intact, head, a neck, a body and a tail. What about the concept of movement or motility. Can you explain that to us?

A Our laboratory does not do any motility studies. When I get a slide or I make a slide, I immediately heat-fix it to the glass, the material on there. That would destroy any motility that was present.

Then, like I said, I physically stain the material on the slide. So, I never see motility on the slides that I look at at the laboratory.

Q But from a forensic viewpoint, motility would be similar to movement?

A Motility means movement.

Q But your lab does not perform those tests, is that correct?

A Correct.

Q Now, getting back to the swabs that might be taken from the vaginal area which you've

indicated is done by a pathologist who performs an autopsy -- is that correct?

A Yes.

Q That's the practice within the Medical Examiner's Office of Westchester County?

A Yes.

Q In connection with this case, do you know the name of the physician who performed the autopsy on the body of Angela Correa?

A Yes, I was present when the swabs from this particular case were taken by Dr. Louis Roh.

Q So, you saw him take what type of swabs, and from where?

A I saw him take vaginal swabs from the vaginal area of Angela Correa's body.

Q Do you recall whether or not any anal swabs might have been taken?

A Anal swabs were submitted, along with oral swabs. However, I was not present when those particular swabs were taken.

Q Now, in terms of the constituent elements of seminal fluid, drawing upon your background, training and experience in the area, how long can the constituent elements of

spermatozoa remain in the vaginal area, assuming there has been some type of contact between a man and a woman such that the penis of a male entered the vaginal area and there was an ejaculation and depositing of some seminal fluid within that area?

A Are you talking on a live person or a dead body?

Q Let's start with a live person.

A Generally, it's our laboratories policy if we find spermatozoa in the vaginal area, we say that coitis has taken place within twenty-four hours. The environment in the vaginal area is not conducive to spermatozoa staying around for more than that, that the normal bacterial will destroy them and eventually just disappear.

Q Now, when you say twenty-four hours, would that be twenty-four hours going back in time from when the seminal fluid was deposited?

A Correct.

Q Now, what about -- let me ask you the same question with respect to the other constituents of seminal fluid, other than

spermatozoa?

A The same applies. After the twenty-four hour point very little constituents are found.

Q Now, you've indicated what the office policy is of the Department of Laboratories and Research. Are you familiar with the literature in this particular area?

A Somewhat, yes.

Q In general, with respect to the -- with respect to how long reasonably speaking the constituent fluids remain in the vaginal area, how long would that be?

A There have been cases reported in the literature stating up to seven days in the vaginal area.

Q Let me ask you this: Is there any way for you to determine whether --

MR. BOLEN: Withdrawn.

Q With respect to the series of questions I just asked you with respect to how long seminal fluid can remain in the vaginal area, would your answers be the same or any different with respect to the -- assuming it were deposited there, the

presence of seminal fluid in the anal area?

A In the anal area, as I mentioned before, the number of bacteria in that particular area is so high that generally you do not find seminal constituents after hours. I'd say in my experience, in my cases, no longer than six hours after anal contact.

Q Now, in connection with this case there was a point in time on the afternoon of November 17th, 1989 when you were present in the autopsy room with, among others, Dr. Roh, is that correct?

A Yes.

Q And prior to that time earlier that afternoon had you received any items from Dr. Roh, independent of those things that you might have taken yourself later on that day in the autopsy room?

A In connection with this case?

Q Yes.

A I was called in before the autopsy was started, so I viewed the body while the pictures were being taken. There was a point where I left the autopsy room after the original vaginal swabs

were taken where I went back to the laboratory, made a slide from that and viewed spermatozoa. I then returned to the autopsy room and requested Dr. Roh to take more vaginal swabs.

Q All right, you've answered my question of what I was getting to.

Let me ask you this: Based upon your own observations of the body --

MR. BOLEN: Withdrawn.

Q At some point in connection with this case --

MR. BOLEN: May I have one moment, please.

(A brief pause.)

Q In going ahead in time to November 20th, 1989, shortly after ten o'clock, on that particular day do you recall receiving from the Peekskill Police Department certain items of clothing, yes or no?

A Yes.

Q And among the other items you might have received, would they have included a pair of underpants?

A Yes.

Q A pair of blue jeans?

A Yes.

Q And a bra?

A Yes.

Q Now, at some point was your attention drawn to that set of underpants?

A I performed my regular analysis on those underpants, yes.

Q And I have one specific question of you as to the underpants at this point, and I will ask you some more questions with respect to your various tests of the underpants later on. But let me ask you this:

When you first observed and were about to commence your analysis of the underpants what, if anything, were you able to detect, either with your outward senses or a microscope, if necessary, as to the presence or absence of any fecal material on the underpants?

A Fecal material was apparent on the underpants, both visually and with my nose.

Q And going back to November 17th, 1989 when you were in the autopsy room where the body was, were you able to determine or make any

similar observations with respect to the presence of any fecal material on or about the body?

A There was fecal material in other areas, other than the immediate anal area.

Q And again in response to one or more questions I previously posed to you, fecal materials, among other things, contains bacteria which would affect spermatozoa, is that correct?

A Yes.

Q Now, I now would like to ask you certain questions with respect to certain tests you performed on November 17th, 1989 sometime later that afternoon.

Now, on that particular day did you have occasion to receive from Dr. Roh or be present when certain vaginal swabs were taken?

A Yes.

Q Approximately how many in number?

A I believe there were eight in total.

Q And when we say a swab, what specifically are we referring to that was utilized to extract, if you will, a specimen from the vaginal area?

A Our laboratory uses applicator swabs

which are approximately six inches in length. It looks like a Q-tip with a wooden stick.

Q At some point later that day or thereafter did you have occasion to perform certain serological tests with respect to one of more of those vaginal swabs to detect the presence of any seminal fluids, including spermatozoa?

A Yes.

Q What were the results?

A I found the presence of spermatozoa on the swabs. I treated all the swabs, because I was present when they were taken. I treated all the swabs as one specimen. In other words, assuming that spermatozoa was on one, spermatozoa was on all of them, because they were taken at the same time in the same area. Spermatozoa was present, so that indicates that semen was present on those particular swabs.

Therefore, I went ahead and did the test to determine whether I could find any blood group substances corresponding to a blood type on the swabs. I performed that test, and I found there was the presence of blood group substance A

and H.

When the blood bankers were naming antigens and substances they didn't make it easy. Blood type O means the absence of A or B antigen. There is no O blood substance. They called it H. So, the antigen that determines that you are O, what we find when we do the blood typing is H. So, the presence of A and H would indicate the substances came from most probably an A type person.

H is found on all cells. Everybody has H. It's a building block. H is what you make A from. It's what your body makes B from. So, A people have H, but not as much as O people, because they haven't used any to make A or B.

So, the presence of A and H most probably indicates that that came from an A type person. It could also be a combination of an A secreter person and an O secreter person, or two A secreter people. There's no way to determine with that test how many people's fluids are mixed in that particular stain.

The next test that I performed on the vaginal swab was the test for the enzyme typings.

Those are performed. The first enzyme is called ESD. That's called for Esterase D. I found that to be type one.

The second enzyme is PGM. That stands for Phostoglucomutase. That I determined to be type one also.

The next enzyme that I tested for was GLO. That stands for Glyoxilase. That I also determined the presence of type one. These enzymes and the blood group substances were consistent with the enzymes that I tested in the tube of blood submitted from Angela Correa's body. They're consistent with her blood type and her enzyme types.

Q And specifically I was about to ask you to a reasonable degree of scientific certainty, what was Angelo Correa's blood type?

A She was A.

Q I asked you about the constituents of the seminal fluid. How about a man and a woman engaging in sexual intercourse? What fluids would a male excrete or generate?

A If you're talking about what would be found on the vaginal swabs?

Q Yes.

A It would be a mixture of the vaginal secretions from the woman and the seminal constituents of the man.

Q So, that when you just recently mentioned that with respect to some of your analyses as to the vaginal swabs, that they corresponded to Angela Correa, you're talking about the secretions of Angela Correa, is that correct?

A That's correct. The vaginal swab is a mixture of the semen and the victim's vaginal secretions. In this case I was unable to detect any constituents, any types on the enzymes or the ABO that did not correspond with the victim.

Q Now, again during the course of that particular afternoon, among other things, did you have occasion to receive and/or participate in the removal of what we call certain pubic controls from the vaginal area of Angela Correa's body?

A I can't remember whether I was actually present when that was taken. As I said, I did leave the autopsy room. But I did receive

specimens marked pubic from Angela Correa and scalp marked Angela Correa, as in the course of a normal autopsy I would receive the pubics, the hair samples and the swabs.

Q With respect to the pubic hairs you received from her, would they be manually extracted from her pubic areas?

A Yes.

Q They're called controls for the purposes of comparisons?

A Yes.

Q Apart from the pubic controls, did there come a time that day that you had occasion to receive what we call pubic combings from the vaginal area as distinguished from pubic controls?

A Yes. We provide the autopsy room with kits containing the various swabs and slides that we require for analyses on an autopsy victim homicide. This includes a paper towel, an envelope with a comb, to comb the vaginal area to determine whether there are any foreign hairs mixed in with the victim's hair.

Q Now, in connection with this case, to

your knowledge, who was it that took the pubic controls?

A I believe it was -- the controls?

Q The controls.

A That I don't remember whether I was present for it. Most probably it would be Dr. Roh, but I really couldn't say.

MR. INSERO: I'll object to the most probably answer.

THE COURT: Sustained.

Q Let me ask you this, Miss Duffy: Dr. Roh, what's his full name again?

A Doctor Louis Roh.

Q To your knowledge, where is he from?

A Korea.

Q Now, did there come a point in time on November 17th of 1989 that you had occasion to be in the autopsy room when the body of Angela Correa was still there, and to remove what we will call certain artifacts from her body?

A Yes.

Q And specifically, in terms of artifacts that would have been removed from her skin surface and solely with respect to that, as you

sit here now do you recall the specific order that you retrieved those artifacts from, and from what parts of the body?

A The specific order?

Q Yes.

A No. But I know what I picked up.

Q Directing your attention now to specifically the breast area of Angela Correa, do you recall what, if any, artifact you might have removed from that area?

A Yes. I removed a hair-like artifact. I'm not a hair expert, I'm not a fiber expert. When I see a foreign material I can only describe it as to what it looks like to me, hair-like or fiber-like.

Q So, do you recall from which breast it might have been removed?

A The right breast.

Q Next, do you recall whether or not you yourself or in your presence any type of artifact was removed from any portion of the feet of Angela Correa?

A I removed another hair-like artifact from the right leg above the right foot sock

area.

Q When you did that were socks on the foot or not?

A I believe there was a sock on the foot, yes.

Q So the record is clear here, when you removed that artifact, was it removed from the sock or the skin?

A The skin.

Q Where in relation to the sock was it?

A Above it.

Q How close or how far?

A Not that far. Within several inches of the sock.

Q In any event, it would be somewhere between the ankle and the knee?

A Correct.

Q And, lastly, do you recall whether or not with respect to either the right or the left arm you had occasion to remove any type of artifacts?

A I removed another artifact from the left arm.

MR. INSERO: The left arm?

THE WITNESS: The left arm.

MR. INSERO: Thank you.

Q Now, I've asked you a series of questions with respect to whether any swabs were taken of the vaginal area and the anal area. Let me ask you this:

To your knowledge would it be the course of the procedure on a female individual, in addition to those swabs that were taken from the mouth area --

A From a homicide victim, yes, we take from female and male, oral swabs, yes.

Q Now, to your knowledge, that was done in this case since swabs like that were given to you?

A They were submitted, yes.

Q Now, with respect to any analyses you might have thereafter done, and to a reasonable degree of scientific certainty with respect to any oral mouth swabs, the results were what with respect to the presence or absence of spermatozoa?

A I didn't test the oral swab for the presence of spermatozoa. I performed the

chemical and immunilogical tests to determine whether semen was present, and the results were negative.

Q What is your --

MR. BOLEN: Withdrawn.

Q With respect -- you've already given us the results with respect to the vaginal swabs. Again, what were your results to a reasonable degree of scientific certainty with respect to the rectal swabs for seminal constituents?

A They were negative again for the acid phosphotase and the P-30 test.

Q What does that mean in the context of the fact that you have indicated there had been some defication in this particular case?

A I'm not sure exactly what you want there.

MR. BOLEN: Let me withdraw the question.

Q Could you tell us to a reasonable degree of scientific certainty what, if anything, fecal matter might have played with respect to the area of the anal swabs?

A I would expect fecal material on the

rectal swabs.

Q Okay, fine. Now, the artifacts that you have previously described that you removed, the right breast above the right leg, and the left arm, as well as the pubic controls and the pubic combings, do you recall whether or not in connection with this case any or all of those various things were mounted on some type of slides, yes or no?

A By myself, no. I gave them to the trace evidence department of our laboratory.

MR. INSERO: What department?

THE WITNESS: The trace evidence department.

MR. INSERO: Thank you.

A Specifically Karen Lamminen of the laboratory. And I have seen them mounted. So, yes, they were mounted, but not by me.

Q Would you now take a look ceriatum and collectively at what has previously been marked for identification as People's Exhibit 162 A through G.

(Witness examines.)

Q Have you had a chance to look at each

of those which comprise Exhibit 162 A through 162 G?

A Yes.

Q At some point between November 17th, 1989 and today have you had occasion to see each of those particular slides?

A Yes, visually.

Q Now, could you tell us whether those various slides would comprise, among other things, the three artifacts that you had removed?

A Yes, they are present here.

Q As well as one or more elements from the pubic controls and/or pubic combings?

A Correct.

MR. BOLEN: May I have those back, please.

Q As you've already indicated, you have no expertise in the area of hair fiber analysis, is that correct?

A That's correct.

Q Now, going ahead in time to November 20th, 1989, I've already had occasion to ask you one question with respect to the underwear. You've already indicated that on that day, among

other things, you saw underpants, a bra and jeans, is that correct?

A Yes.

Q Were you also provided on that day with what would be denominated as twigs and leaves?

A Yes.

Q Now, could you tell us whether with respect specifically to the jeans, the bra and the underwear, whether you performed any tests to determine the presence or absence of semen?

A I did on each article.

Q With what results, to a reasonable degree of scientific certainty?

A I found no evidence of semen on any of the articles.

Q Did you notice or observe with your eyes what appeared to you to be certain stains on one or more of those objects?

A I tested stains on each of the objects, yes.

Q Would it be fair to say when you do that, before you do an analysis, that you do certain cuttings of the stained area and then take certain cuttings of control areas?

A Yes, where possible I take a control area.

Q Now, in this particular case with respect to the bra, the underpants and the jeans, once you were done with your testing would it be fair to say that they would not be in the same condition with respect to the presence of certain holes where you had taken certain cuttings?

A Where I take cuttings I mark the holes with a stain designation one, two. I mark which ones are controls, and I mark each article with my case number, the article designation and initials, so they would have writing all over them.

Q Now, going ahead in time now to the new year. We're into the new year, specifically on January 11th of 1990, at some point on that particular morning did you have occasion to receive one or more items from a Detective Paul Astrologo of the Peekskill Police Department? And if so, what would those items be?

A Yes, I received a box with two tubes of blood contained within it.

Q Did you then have occasion to perform

certain serological analyses to determine the ABO blood type of the blood contained in those particular tubes?

A I did.

Q With what result, to a reasonable degree of scientific certainty?

A I determined the blood to be from an AB individual.

MR. INSERO: I'm sorry, a what?

THE WITNESS: AB.

Q You were not present when those tubes of blood were drawn?

A I was not.

Q Nevertheless, were you advised that was the blood of one Jeffrey Deskovic?

A It was labeled as such, yes.

Q Now, I know you briefly explained to the ladies and gentlemen of the jury the ABO system and how it breaks down. Approximately speaking, there are four categories under the ABO system, is that correct?

A Yes.

Q I wonder if you could briefly tell the ladies and gentlemen of the jury what the four

categories are going from the most prevalent to the least prevalent?

A The most common type is type O. The second most common is type A. The third most common is B, and the least common is AB.

Q Now, did you --

MR. BOLEN: If I could have one moment. I'm almost finished with my direct examination.

(A brief pause.)

Q Miss Duffy, with respect to the autopsy blood specimen, the tubes taken during the autopsy of Angela Correa, as well as any one or more of the vaginal swabs that were taken of her vaginal area during the course of that autopsy, as well as the tubes of blood that you were given on January 11th of 1990 and upon which you performed certain testing, did there come a time in January, specifically mid January, on or about January 17th of 1990, that you had occasion to forward by express carrier certain of those items to the Federal Bureau of Investigation, and specifically their DNA laboratory in Washington, D.C.?

A Yes.

Q Could you tell us as concisely as possible what it was that you sent of those various items to the laboratory in Washington, D.C.?

A The DNA laboratory in Washington will not accept a tube of blood, wet blood. Therefore, of the two tubes that I received on January 11th marked Jeffrey Deskovic, I took one tube and transferred it to clean cotton, white cotton cloth, and allowed that to dry. I submitted that as a specimen of known origin of Jeffrey Deskovic.

I also submitted a similar cloth made from the tube of blood taken at autopsy from Angela Correa, and I stored it in the freezer. Also, a vaginal swab taken at the autopsy from Angela Correa.

Q And directing your attention forward in time, did there come a period in June of 1990, on or about June 19th of 1990, give or take a couple of days, that you had occasion to receive back from the FBI laboratory in Washington, D.C. various component parts of the items that you had

sent down to them in January?

A Yes, I did receive back what they didn't use.

Q Now, early on in my examination of you I asked you with respect to -- drawing upon your training, experience and background in this area, I asked you how long one or more of the constituent elements of seminal fluid deposited by a male in the female vaginal area could remain within the vaginal area. You gave your answers with respect to that, is that correct?

A Yes.

Q I did not ask you, again drawing upon your training, background and experience, how long one or more of the constituents of seminal fluid would remain in the vaginal area remain there post mortem, after the death of the female. In your experience, what would your answer be to that?

A The vaginal area of a corpse would be changed from a living vaginal area. The presence of spermatozoa would last twenty-four hours in a living body. After death the area is not as harsh an environment to the spermatozoa as

previously. There have been cases where spermatozoa had been found a week or more after death, assuming that it was deposited before death within a twenty-four hour period.

MR. BOLEN: May I have just one moment, your Honor.

(A brief pause.)

MR. BOLEN: Judge, I think that would conclude my direct examination.

THE COURT: Okay, this is a good time to stop. Let's take a lunch break. Let's come back at a quarter to two. We'll have a short lunch break, because we have a full day.

Don't discuss the case amongst yourselves or with anybody else. We'll see you at 1:45 p.m.

(Whereupon, the Court declares a luncheon recess at 12:55 p.m., and the trial resumes at 1:50 p.m.)

MR. BOLEN: This is the transcript of the Grand Jury testimony of Martin Burrett, pages seventeen through twenty-two. At the Court's direction,

I'm providing a copy of this to Mr. Insero.

MR. INSERO: Your Honor, I'll look it over right here, if I may.

(Marked.)

(Whereupon, Mr. Insero examines said document.)

THE COURT: Okay, bring the jury in.

(Whereupon, the jury enters the courtroom.)

THE COURT: Good afternoon. Bring the witness back.

(Whereupon, the witness Linda Duffy returns to the witness stand.)

THE COURT: Go ahead, Mr. Insero.

MR. INSERO: Your Honor, I don't know if Mr. Bolen is finished.

MR. BOLEN: Your Honor, one question.

DIRECT EXAMINATION

BY MR. BOLEN: (Continued)

Q You made mention of Karen Lamminen?

A Yes.

Q Who is she?

A She's a scientist assigned to the trace evidence laboratory.

Q Who is Robert Adamo?

A He's the supervisor of both the serology and the trace evidence section.

MR. BOLEN: Thank you. I've no further questions.

THE COURT: All right, Mr. Insero.

MR. INSERO: Thank you. Miss Duffy, I have no questions for you.

THE COURT: Thank you.

(The witness is excused.)

THE COURT: Call your next witness.

MR. BOLEN: The People call Peter DeForest?

P E T E R D e F O R E S T, a witness called on behalf of the People, having been first duly sworn, was examined and testified as follows:

THE COURT CLERK: Would you please be seated. Would you state your full name for the record, spell your last

name and state your occupation and business address for the record?

THE WITNESS: Peter R. DeForest, D-e-F-o-r-e-s-t. I'm a Professor of Criminalistics at John Jay College of Criminal Justice, City University of New York.

THE COURT: Thank you. Please proceed.

MR. BOLEN: Thank you.

DIRECT EXAMINATION

BY MR. BOLEN:

Q Dr. DeForest, while you're here please keep your voice up.

Having just indicated that you're a Professor of Criminalistics at John Jay College in the City of New York, I wonder if you could briefly tell the ladies and gentlemen of the jury what would be the areas that you particularly teach?

A The areas of trace evidence and crime scene reconstruction. The term criminalistics applies to the use of science in dealing with legal questions, trying to have some input on

resolution of legal questions. So, that the areas I specialize in would be the trace evidence, the trace and transfer evidence and reconstruction.

Q Would your particular area that you cover include hair and fiber analysis?

A The hair and fiber area is part of trace evidence.

Q Now, I'm going to do this, even for me in logical sequence. I wonder at this time if you could tell the jury your educational, your academic training in the areas you've just described?

A I have a bachelor of science degree in criminalistics from the University of California, Berkeley, and a doctor of criminology degree in criminalistics in Berkeley.

Q Did you study under any one particular person who is fairly well known?

A My mentor was Dr. Paul Kirk who was the pioneer in forensic science education and research.

Q At this time could you tell us something of what you do at John Jay College,

your particular area of expertise?

A I teach three discrete groups. I have a program, a bachelor of science degree in criminalistics, we have a masters, and also a PhD concentration in the criminalistics PhD programs.

I have three kinds of students. The courses I teach deal with microscopy and trace evidence, and some forensic serology, as well.

Q What would be your professional background prior to joining the faculty at John Jay?

A I have had a series of jobs that I worked when I was still a student. I was -- I first started in the field about thirty years ago in a sheriff's laboratory in California, and then I did some work study in other police laboratories.

I also worked on some Federal grants in the area of forensic toxicology while I was a graduate student. I consulted with my mentor in his private laboratory also while I was a doctoral student.

Q At this time could you tell us any formal teaching students you may have had?

A There have been a number of lectures and teaching assignments at other universities, Northeastern University in Boston, the University of New Haven in New Haven, Connecticut. I can't recount all of these, but I've lectured or taught things at various other universities.

Q With respect to your PhD you secured, what was your doctoral discertation in?

A The forensic of hair by pyrosis photography.

Q Could you tell us any society memberships you have?

A I'm a Fellow of the American Academy of Sciences. I'm a life-long member of the Northeastern Association of Sciences. I'm a member of the American Chemical Society for the Advancement of Science, a Board Member of the New York Microscopic Society, and I am a Board Member of the New York Society of Forensic Scientists. I'm a member of the California Association of Criminalistics, a member of the Canadian Society of Forensic Sciences-- Forensic Society is the proper term.

Q With respect to any publications that

you might have individually or jointly authored, have you done so with respect to any particular books?

A Yes. I have co-authored a book with two colleagues and contributed chapters to several other books. The total number I've forgotten right now, but one book is actually co-authored and several I have a contribution of chapters.

Q In addition, have you offered any articles in your particular field or fields? And if so, can you give us the approximate number?

A Something over thirty articles in various scientific journals.

Q Now, in addition to your teaching assignments at John Jay, do you also have and maintain a private consultancy business?

A Yes.

Q Could you please tell us a little about that?

A As a sideline I have for about the last twenty years or so maintained a consulting practice which started out very small and has

become more like the tail wagging the dog at this point, and I really have to keep a lid on that, but it is engaging in these areas of consulting with attorneys, both prosecution and defense, and also in civil case work, as well, that deal with physical evidence problems, particularly trace evidence and reconstruction areas.

Q Prior to today have you testified in any courts in the State of New York with respect to your particular fields, specifically hair and trace evidence?

A Yes, I have.

Q About how many times within any state courts of the State of New York?

A I really don't know how many times it would be within New York. But New York would probably be something in the majority of the cases that I've testified to, a rough number about one hundred times I've testified in total. So, perhaps forty or fifty of those would be in New York State.

Q And the others, would they be in other courts, that is state courts or federal courts or both?

A Both.

Q What other states have you testified?

A Obviously things nearby, Connecticut, Rhode Island, Massachusetts, New Jersey, Pennsylvania, Delaware, Virginia, Florida, Louisiana, California.

Q Now, Dr. DeForest --

MR. BOLEN: At this time, your Honor, I would propose that Dr. DeForest is an expert in the area of criminalistics, particularly with respect to trace evidence and hair and fiber analysis.

MR. INSERO: I have no objection, your Honor.

THE COURT: He's so certified in criminalistics and other related matters.

Q Now, Dr. DeForest, I wonder at this time if you could briefly and concisely explain to the ladies and gentlemen of the jury what is cannoted by the terms transfer evidence or trace evidence?

A There is somewhat of a casual use of

these terms. Strictly speaking, trace evidence applies to things that are very, very small, little bits, traces of things that are exchanged between surfaces. That exchange process is called transfer. So, very often what's transferred is, in fact, the bits of small materials.

The terms tend to be used jointly, but really they have separate meanings. The transfer implies the exchange between the two surfaces.

Q Early on in answer to one of your questions, Doctor, you used the word microscopy?

A Yes.

Q Does that have to do with microscopes?

A Yes, it does.

Q In connection with this particular case, on or about April 16th of this year, do you recall receiving at your offices -- by the way, where would your consultancy office be located in New York?

A In Hartsdale.

Q Again, on that date do you recall receiving a number of slides on which were mounted various type of hairs, those items being

delivered to you by two individuals or perhaps one individual, and maybe two, a Robert Adamo and a Karen Lamminen of the Department of Laboratories and Research of Westchester County?

A Yes, I do.

Q Jumping ahead in time to on or about September 7th of 1990, on that particular day do you recall again at your offices in Hartsdale receiving from Mr. Adamo and Miss Lamminen a number of known hair exemplars from an individual by the name of Jeffrey Deskovic, specifically certain head hairs, and of more particular significance here, certain known pubic control hairs?

A Yes, I do.

Q Now, I wonder if I could just ask you, Dr. DeForest, with respect to your analysis of hair-like, hair artifacts or hair-like artifacts, and particularly with respect to hair artifacts, would you agree with me there's a differentiation between human hairs and animal hairs?

A Yes.

Q My questions will deal with human hairs. Drawing on your training and experience

in the area, do you as a forensic scientist have occasion to utilize or employ certain terminology to describe hairs of certain individuals as they correspond to the human population?

A Yes.

Q Breaking them down into certain categories?

A Yes.

Q How is that done?

A The terms that are used?

Q Yes.

A There are three racial populations, racial groups that are recognized. And the terminology has been derived from -- it's been established many, many years ago. So, the term Caucasoid is used to determine hairs that have characteristics of white population in layman's language. The term Negroid is used to determine hair from an African origin. The term Mongoloid indicates hairs of American Indians, Chinese, Indians, and that kind of group.

Q Within the three categories you use, and obviously would it be fair to say that as terminology changes you in the forensic world

change the terms, Caucasoid, Mongoloid and Negroid?

A I think of late there has been a use of both, the lay terms and the classical scientific terms.

Q Now, within any of those three general categories, from a forensic scientist viewpoint, are there further sub-categories to eliminate the possibility of cross -- what's the word I'm looking for-- inter-relationship between certain individuals that share characteristics between each of the groups?

A I think I understand what you're getting at. The point should be made that we do not say that a given hair is from a particular racial group. We generally look at the hair, we observe certain characteristics of that hair and say that that hair exhibits characteristics of hairs derived from that group, rather than identifying the hair as having come from that group, because we recognize that there is a continuing variation here.

And only when we have certain features do we say that it's predominantly of a particular

group. But we would never say this hair came from an individual of a particular group.

Q Now, next with respect to head hairs on a human and pubic hairs on a human, as opposed to an animal, generally are there any similarities or dissimilarities between the two? And if so, what would they be from a forensic science viewpoint?

A There are different characteristics that can be seen in the head and pubic hairs. Generally we do not have any cross correlations with an individual. We would compare a pubic hair sample with a pubic hair individually. We would make no inferences about a comparison if we had a head hair sample with a pubic hair sample with somebody else. We wouldn't even consider doing that at all.

Does that answer your question?

Q Somewhat. I can be inarticulate at times. Forgetting about the racial origin what, if any differences or similarities, would there be between a head hair and a pubic hair to the naked eye, or if you need a microscope, from that viewpoint?

A Those that can be seen with with the naked eye or low magnification, there are features that make it very easy to differentiate the classical type pubic hairs from head hairs. It's not a difficulty generally assigning a hair to a particular body origin.

Q That's what I'm asking you. What would those things be? Can you articulate between a head hair and a pubic hair?

A One of the most obviously is what we call bottling. The cross-section changes very dramatically and, therefore, what appears to be the continuity of the shape. It's kinky, curly, as opposed to the head hairs which tend to be straighter and have a more circular type ofcross-section.

Q Now, generally speaking with respect to any human, whether it be a male or female, confining ourselves to head hair, if you were to examine all the head hairs on such an individual, would all the hairs be uniform in terms of the characteristics that you would look for, particularly with respect to color, length, configuration and whatever, or would there be

differences?

A They would not be all the same. I would not expect that to be the case. In fact, in many cases we see quite large ranges of variances within individuals. We do have to account for a fairly large degree of individual differences.

Q Would your answer be the same with respect to pubic hair?

A Yes.

Q With respect to your being called upon to analyze a head or pubic hair first visually with your eye and then perhaps with the assistance of a microscope, can you, drawing upon your experience, tell whether a questioned hair was natural, as opposed to being artificial in color?

A The coloration?

Q Yes.

A Yes, generally one can do that.

Q And is there any way for you, forensically speaking, to determine the age of the hair?

A Age in terms of the donor's age or in

terms of the times and shedding?

Q Let's take the first one, the donor's hair.

A Other than dealing with infants and people who have graying hair, like my own, those are very broad things. But the answer to that is no.

Q If you came back to me with a question with respect to the hair specimen, could you determine age simply from looking at the specimen?

A Not in any accurate way. There are certain kinds of includes we might have, that might be the debris on the hair, that might have been in an environment that might have been dirty. We may see some kind of damage, such as insect damage, whether it's chewed up a little bit, or we may see physical abhorations type damage to the hair, which might suggest it might be an area trot upon.

There may be functional damage. That would be indicative of some age. Again, these are very, very hard to pin down. There's another thought I had, and I lost the train of thought.

But, in general, it can only be handled in very general ways.

Q If you were given a known hair for analysis and possible comparison, are you able, drawing upon your experience and training and background, to determine whether one particular questioned hair is a -- is what we would call a growing hair?

A Yes.

Q How would one do that?

A I think we've all experienced the fact that when we brush our hair or shampoo and so forth, hairs fall out with no pain. The roots of these hairs have a different appearance. They become inactive. There's no living tissue associated with them.

We shed something on the order of one hundred hairs a day. The normal loss of hairs, even when we aren't going bald, would be about a hundred hairs a day. If we have a hair that's plucked out, one that may snag in a hair brush or may result in some kind of violence, that hair has been removed from the follicle while it's actively growing and has a different appearance

from the so-called fallen hairs.

Q One or two more general questions, and then I'll get to specific questions with respect to items delivered to you.

Assuming, Doctor, if you will, that we're dealing with a young man or woman approaching and perhaps going through the age of puberty. If you can, from your vantage point, Doctor, how would that be manifested with respect to particularly the pubic hair on such an individual?

A One can see more range of variation within that kind of a sample. There's an evolving process going on there, so there are hairs with different degrees of maturity that would be present in a sample taken from that. There's not a lot of data on this. There's experience with case work suggesting that this can be a problem in interpretation in some of these cases.

Q Doctor, I think lastly, although I shouldn't really say that, from your vantage point as a forensic scientist, do you have experience, scientificly speaking, with the way

to draw a certain known or exemplar hair specimens for comparisons with certain hair specimens?

A You mean the comparison of the hair specimens?

Q Yes.

A Yes.

Q If one wanted to get certain known controls let's say of the pubic area of a human being, how would one do that generally?

A There are some considerations here that really depend upon what the nature of the unknown samples would be. But typically in most cases involving the pubic hairs, the hairs in evidence are the ones that were in the head naturally, ones ready to fall out.

So, what we would do, we would do a combing of the pubic region which would be enough to remove hairs that are ready to be shed and, therefore, become the controlled sample for the comparison work.

If the combing is insufficient to produce an adequate number of hairs, then a massaging of the area would dislodge a number of

others so that the combing would pick up others, as well.

Q Would any of that involve when you're trying to get certain controlled pubic hairs, actual plucking of hairs from the body?

A That would be another way of increasing the numbers of hairs that would be obtained. If it turned out it was difficult to get enough by the former method, or if it turned out that the hairs in evidence were the ones that had been growing at the time they were shed, the best comparison sample would be one that consisted of actively growing hairs. But normally it wouldn't be necessary to have actual pluckings.

Q Early on in my examination of you, I asked you, and you complied, you told the ladies and gentlemen of the jury basically the difference or what's entailed with transfer evidence and trace evidence, the concept of transfer, is that right?

A Yes.

Q Would your response there certainly apply to hair comparisons?

A Yes. It's not the exclusive evidence

of having -- for example, a burglar at a crime scene might leave hairs at the crime scene without contacting the surface the hair is found on. But the majority of the hair we encounter is as a result of contact.

Q And let me ask you this: I guess I can phrase this in terms of your professional experience and perhaps your own experience. Assuming there was an act of intercourse between had a man and woman, would you expect or not expect to see the transfer of evidence, vis-a-vis, among other things, pubic hairs?

A Clearly that does take place. We have a lot of case work experience showing that these kinds of transfers do take place as a result of sexual contact. There is no data that would allow us to talk about what percentage or under what conditions this takes place. There have been limited studies that have been done, but nothing that allows us to make overall generalizations.

Then there's the additional question that has to be considered about the retention of those after the transfer has taken place.

Q Now, Doctor, at this time I would like to, with the assistance of the Court Officer, show you what has been previously deemed marked for identification as People's Exhibit 162 A through G. And directing your attention to this particular exhibit, and specifically directing your attention to it as you look at it, the right hand column starting with the fourth slide down, would you take a look at that.

(Witness examines.)

A Okay.

Q Have you looked at each of those, please?

A Yes. Okay, I have a general idea, yes.

Q Now, there are some seven slides there deemed marked for identification. I ask you this, whether you recognize collectively those slides and the slides delivered to you on or about April 16th, 1990 or on or about September 7th of 1990?

A I do.

Q Now, again I am glad I had a caveat before. I have a general question. With the naked I or under the microscope, can you

distinguish between a hair artifact and a hair-like artifact that might consist of fiber, fabric or vegetable matter?

A Yes, microscopically it's very easy to tell a hair from a vegetable matter.

Q Now, directing your attention to the last slide, the bottom slide which appears to be a hair removed from the left arm of Angela Correa --

MR. INSERO: Could we have a citation on that?

MR. BOLEN: That would be Exhibit 162 G.

MR. INSERO: Thank you.

A I recall that one.

Q Are you with me?

A Yes.

Q Did you have occasion, and again these series of questions are drawing upon your background, training and experience and your personal analysis in this case, do you have an opinion, sir, as to what that particular artifact is?

A It is clearly not a hair. It's a

vegetable fiber of some kind.

Q Working our way upwards, directing your attention to what has been deemed marked for identification as Exhibit 162 F, do you have an opinion, and if you can answer this to a reasonable degree of scientific certainty, please do, and if you can't, please tell us, as to what that particular artifact is or represents?

A It is a human hair fragment. It is not an intact hair. It has the characteristics of having come from a black person or what we would call a Negroid hair.

Q So the record is clear, referring to Exhibit 162 F, that would have been an artifact recovered from the right foot of Angela Correa between the angle and the knee.

Directing your attention now to what has been deemed marked for identification as Exhibit 162 E, a slide of an artifact taken from the right breast of Angela Correa, what is that, Doctor?

A That's a human head hair with Caucasian type characteristics.

Q Did you, in connection with this case,

Doctor, have an opportunity to compare that with known head hair exemplars of Angela Correa?

A Yes.

Q What was your opinion?

A That I could not eliminate her as the source of that hair.

MR. INSERO: That you could not?

THE WITNESS: That I could not eliminate her as the source of the hair.

Q This is corresponding to the hair found on the right breast?

A Yes.

Q Now, I want to direct your attention now to the first slide which has been deemed marked for identification as Exhibit 162 A, a hair slide of a pubic control taken during the course of the autopsy on Angela Correa. What is that, Doctor?

A It is not a pubic hair. It is a human hair that has the characteristics of having come from a Oriental type person, what we call a Mongoloid type head hair.

Q What, if anything, could you tell us

with respect to whether that hair would be a growing hair or not?

A That would have been a growing hair when it was lost.

Q Now, did I understand you to say early on when you broke down the classification is into Caucasian, Negroid and Mongoloid, that within Mongoloid you refer to as Oriental?

A Yes.

Q Did you also include into that correlation?

A Yes, of course.

Q Let me ask you this, Doctor, if you can, having just determined that this is a growing hair, a head hair from an individual Mongoloid type hair, and mindful of the concept of transfer, if one were in the process of taking or trying to extract certain known pubic hair controls during the course of an autopsy, and one were to bend over, in your experience could a head hair from that individual come into the known pubic controls?

A Yes, that's a possibility and, in fact, it does happen.

Q Now, lastly, Doctor, I direct your attention to what has been --

MR. BOLEN: If I can just approach the witness for a second?

THE COURT: Yes.

Q Directing your attention to that holder, specifically again directing your attention to the right hand column, the fourth slide up from the bottom which has been previously deemed marked for identification as Exhibit 162 D, what, if anything, can you tell us about that hair to a reasonable degree of scientific certainty as to whether it is a human or animal hair? And if human, what kind of a hair, and things like that?

A Exhibit 162 D is a human hair which is from the pubic region and it has Caucasian characteristics.

Q What, if anything, can you tell us based upon your examination of that hair as to whether it was a growing or non-growing hair?

A It was a non-growing hair. It was a shed hair.

Q In terms of color what, if anything,

could you tell us about that hair?

A I can check my notes. It was basically a medium brown hair. Do you want more detail than that?

Q No, that's fine. Now, in connection with this case, you've already indicated that you were provided with certain known pubic control hairs of Jeffrey Deskovic, is that correct?

A Yes.

Q You've also indicated to us that you were provided with certain known pubic control hairs of Angela Correa?

A Correct.

Q Now, did you, sir, with respect to the known pubic control hairs of Angela Correa make efforts to compare that particular hair, People's Exhibit 162 D deemed for identification, with the known pubic control hairs of Angela Correa?

A Yes.

Q With what result, if any?

A That it fell outside the range of variation exhibited by the control hairs themselves. In other words, with the availability of the control hairs from the victim

this hair fell outside of that range and, therefore, suggested that it came from a different origin.

Q Can you rule out completely to one hundred percent certainty it was not from Angela Correa?

A No, I cannot.

Q The reason being?

A The reason being that based on the sample of the knowns that I had available it fell outside that range, but there were not a large number of knowns available. I was also concerned at the time about the range of variation exhibited in the knowns that I did see and the question of the maturation process as far as the victim goes.

Q I guess now that -- well, let me ask you this: In connection with this case, sir, did you have occasion to compare Exhibit 162 D with one or more of the controls of Jeffrey Deskovic?

A Yes.

Q For purposes of a comparison between Exhibit 162 D and any one or more controlled knowns of Jeffrey Deskovic?

A Yes.

Q With what result, if any?

A There was no comparison. In other words, I was unable to associate the Exhibit 162 D with the known hairs from that of Jeffrey Deskovic.

Q And, lastly, by way of capsule summary, during the course of your particular analysis here you found within the known pubic control combings taken during the autopsy of Angela Correa, you found a head hair in that which was Mongoloid?

A Correct.

Q And on the right leg you found a Negroid hair artifact?

A Again, let's use the terms that they exhibit those characteristics, rather than giving the idea that we can associate those given to a particular racial group.

Q Lastly, Doctor, I don't know whether you can answer that, but with respect to Exhibit 162 D, the pubic hair taken from the combings of Angela Correa which you've described as being a pubic hair and Caucasian, when you say that, can

you rule out it not having any Mongoloid characteristics?

A Maybe I wasn't giving it my full attention. Repeat the question, please.

Q With respect to Exhibit 162 D which you described as being a pubic hair Caucasian, which was included within the pubic combings taken during the course of the autopsy as opposed to the pubic controls -- are you with me so far?

A Yes.

Q You indicated that was a human hair and Caucasian?

A Yes.

Q Were you able to rule that out as having any Mongoloid characteristics or any Oriental characteristics?

A No. As I tried to indicate, when we make a statement about the hair exhibiting certain characteristics, that's the predominant feature seen. But we can't rule out the contribution of some other racial groups to that.

Q Would your answer be the same with respect to ruling out whether that feature contains any Negroid characteristics?

A Yes.

Q Nevertheless, having determined that hair to be Caucasian, are you saying that is those are the features that dominated in that hair?

A That's correct.

MR. BOLEN: I have nothing further of the witness.

MR. INSERO: Your Honor, may I proceed, please?

THE COURT: Yes.

MR. INSERO: Could I perhaps see the exhibits that the doctor has been referring to, Exhibit 162, A, B, C, D, E, F and G?

MR. BOLEN: It's right here.

(Whereupon, Mr. Insero examines said exhibit.)

CROSS EXAMINATION

BY MR. INSERO:

Q Good afternoon, Dr. DeForest.

A Good afternoon.

Q Doctor, let me make sure I understand some of the terminology that we have been using

here this afternoon. Your science breaks down hair analysis into essentially three groups, am I correct?

A In terms of the requisite groups?

Q Yes. The Caucasoid, the Negroid and the Mongoloid group?

A Yes.

Q As part of your analysis of this situation in this case, Doctor, you were presented with hair exemplars, samples of Angela Correa?

A Correct.

Q And you were also presented with samples of hair from Jeffrey Deskovic?

A That's correct.

Q In fact, the hair samples from Jeffrey, they were known samples to you, were they not?

A They were presented as knowns, yes.

Q They were a control group?

A We call those control hairs.

Q And you, in fact, studied Jeffrey's head hair and his pubic hair under the microscope, did you not?

A I did not look at the head hair, but

the pubic hair, yes.

Q The pubic hair you looked at under the microscope?

A Yes.

Q What were those hairs of Jeffrey that were presented to you? What were they called again, control samples?

A Known controls.

Q Known controls?

A Yes.

Q In addition to the known controls of Jeffrey and the hair of Angela Correa, were you presented with any other known controls?

A None that I recall, although let me think for a minute here. No, I was not.

Q Were you presented with known controls from a pathologist named Dr. Louis Roh?

A No. I made that suggestion, but I was not given any hairs.

Q Were you presented with known samples from that pathologist's assistant?

A I was not.

Q Do you know, sir, that that pathologist's assistant is a member of the

Negroid race?

A I don't know that of my own personal knowledge, no.

Q Do you know of your own personal knowledge, Doctor, that Dr. Louis Roh is a member of the Mongoloid race, that is if a Korean person can be characterized as a member of the Mongoloid race?

A I do know that he is a Korean, yes.

Q In other words, Doctor, you do know Dr. Louis Roh?

A Yes.

Q Is it my understanding, Dr. DeForest, that according to your testimony here early today, that you would never say that a particular hair is from a particular group unequiviocally, sir?

A Unequiviocally?

Q Yes.

A It would be a very rare occasion that one would be able to support that kind of a strong statement.

Q That's a very strong statement to make, is it not?

A Yes.

Q And it would be extremely rare where one would be able to make that statement, is that correct?

A Yes, in a formal sense, in a report or in that kind of thing.

Q And this case is not one of those extremely rare cases that such an unequivocal statement can be made, is that a fact, sir?

A Are we talking in the case of the question of the pubic hair now or is it of the head hair?

Q In terms of the head hair.

A In terms of the head hair, I guess even there I wouldn't be totally unequivocal on that.

Q And certainly not with respect to pubic hair?

A That's right.

Q And it is a fact, sir, is it not, that not all head hairs, even from the same individual, are identical?

A No. In fact, it would be rare for them to be identical. There are differing degrees in the range of variation. Some people may have

hairs more similar across the sampling areas. Others would tend to have quite a range of variation.

Q And your response, sir, that is to a reasonable degree of scientific certainty, is that correct?

A That's right.

Q And it is a fact, sir, that all pubic hairs, even from the same individual, are not identical, is that a fact?

A Yes.

Q And that is also to a reasonable degree of scientific certainty?

A Yes.

Q I just want to make sure that I'm correct about a couple of things, Dr. DeForest: Exhibit 162 E, I'll hand you back that exhibit. Sir, Exhibit 162 E, that's a human hair?

A Yes.

Q And with respect to that hair, Exhibit 162 E, you could not eliminate that that hair belonged to Angela Correa?

A That's correct.

Q Now, Dr. DeForest, with respect to

Exhibit 162 E, the slide there, where did that hair come from?

A I believe it was the right breast. Let me just check the labeling on the slide.

(The witness examines.)

A That's correct.

Q In other words, Doctor, that could have been Angela Correa's hair on her own right breast?

A Correct.

Q Would you please explain once again, please, what is a growing hair? You used that terminology, a growing hair.

A Let me elaborate a little bit here. I don't want to confuse things. But three different growth phases are recognized as far as the hair follicle goes. The hair goes through the three different phases.

When the follicles are producing hair actively, in which it's active and producing hair at a constant rate, that's the cantigen phase. And that phase lasts for a long time, particularly with the head, the scalp. That may last several years. At some point that follicle

begins to shut down in activity. This is a fairly short phase it goes into next called the catigen phase.

Then after the short period of a week or two, then the hair remains in the follicle for a period of time up to several months, but is no longer alive and growing at the base. It's simply a dead hair that's being held in the scalp mechanically by an enlarged lump at the bottom of the hair shaft. And those are the hairs that fall out after some period of time or come out in the hair brush or in shampooing or so forth.

So, when we talk about a hair that does not contain this hardened bump at the bottom that shows some living tissue at the base of it, then we know that hair didn't come out naturally. It wasn't a shed. Something had to have snagged it or pulled it out. So, that it's a very easy distinction to be made between those two extremes.

Between those in the area between the actively growing phase and the resting phase, there is some question sometimes whether or not you are dealing with a hair that's in the late

part of the growing phase or in the early part of the resting phase. But, in general, it's very easy to distinguish between these two extremes.

Q Dr. DeForest, with respect to Exhibit 162 D, could you look at that slide?

A Yes.

Q That is a human pubic Caucasoid hair?

A Yes.

Q And I believe you described it as under visual examination of a medium brown hair?

A Yes. I can check my notes on that, if you would like.

Q If you would, please.

(Whereupon, the witness examines said notes.)

A The only reference I see in color to that is that it was lighter than the other hairs from that same sample.

Q That is fine. While you have your notes there, before today you discussed this matter with Mr. Bolen, did you not?

A Yes.

Q Would reading your notes reflect perhaps how many conversations you have had with

Mr. Bolen since April of this year?

A Yes, they would.

Q Could you give us an estimate perhaps of the exact number of conversations you have had with Mr. Bolen?

A Some of these would be phone calls --

Q Phone calls, in person conversations or whatever.

A There may have been two in one day. On April 24th I can see there were two calls on the same date. It would be eleven by my count.

Q I just have a few more questions for you, Dr. DeForest: The hair that we're talking about now, Exhibit 162 D, your conclusion based to a reasonable degree of scientific certainty, sir, is that you can't rule out that this hair is also Angela Correa's hair, is that correct?

A Yes.

Q Let me ask you this further: With respect to that Exhibit 162 D, you are unable to associate that particular exhibit with Jeffrey Deskovic's hair, is that correct?

A Yes.

MR. INSERO: Thank you. I have no

further questions questions.

MR. BOLEN: I just have a few questions.

REDIRECT EXAMINATION

BY MR. BOLEN:

Q As a follow-up to your three clarifications of hair stages that it goes through, the first stage being the first stage, the anagan phase?

A Yes.

Q With respect to the Mongoloid phase, what phase was that phase going through?

A That was in the anagan phase. We talk about the follicle being in the phase, rather than the hair itself.

Q I qualify my question just posed and include follicle. With respect to the head hair on the right breast, I assume that was Caucasoid?

A Yes, the characteristics.

Q Was there any follicle for you to determine which of the three stages that head hair might have been going through, if you recall?

A If I recall, it was a hair from a

telegon hair follicle. I don't see my notes of that, but I'm quite certain of that at this point.

Q I assume we can do the same thing with respect to follicles on a pubic hair, the three stages?

A Yes, although the time frame is very, very different.

Q I see. Was there any follicle part of the Caucasoid pubic hair found in the pubic combings of Angela Correa, if you recall?

A You'd better bring that one by me again.

Q Was there any follicle that you noted when you examined that?

A You mean was I able to determine whether that was a shed hair as opposed to a plucked hair?

Q Yes.

A Yes, it was clearly a shed hair.

MR. BOLEN: Thank you, Doctor. I have nothing further.

MR. INSERO: I have nothing further, your Honor.

THE COURT: Thank you, Doctor.

THE WITNESS: Thank you.

(The witness is excused.)

MR. BOLEN: May I just approach the bench for a moment?

THE COURT: Okay.

(Whereupon, the attorneys approach the bench for a discussion off the record.)

THE COURT: All right, we'll take a five-minute recess.

(Whereupon, the Court declares a recess at 2:55 p.m., and the trial resumes at 3:05 p.m.)

THE COURT: All right, bring the jury in.

(Whereupon, the jury enters the courtroom.)

THE COURT: Mr. Bolen, call your next witness.

MR. BOLEN: Yes. The People call Dr. Deadman.

H A R O L D D E A D M A N, a witness called on behalf of the People,

having been first duly sworn, was examined and testified as follows:

THE COURT CLERK: Would you please be seated. Would you state your full name, spell your last name and state your occupation and business address, please?

THE WITNESS: My name is Harold A. Deadman, Jr. I'm a special agent with the Federal Bureau of Investigation, presently assigned to the FBI Laboratory in Washington, D.C.

THE COURT CLERK: Spell your last name.

THE WITNESS: D-e-a-d-m-a-n.

THE COURT CLERK: Thank you.

THE COURT: Proceed.

MR. BOLEN: Thank you.

DIRECT EXAMINATION

BY MR. BOLEN:

Q Good afternoon, Dr. Deadman.

A Good afternoon.

Q While you're here, please keep your voice up and speak as clearly as you can.

A Yes.

Q How long have you been employed by the Federal Bureau of Investigation?

A Slightly over twenty years.

Q Prior to affiliating yourself with the FBI, by whom were you employed?

A Employed by the Dupont Company for approximately two years.

Q In what capacity?

A As a research chemist.

Q During the period of time that you have been with the FBI, what basically have you been doing within the FBI lab?

A I have been assigned to two units within the FBI laboratory. I spent approximately fifteen and a half years in a unit involved with the comparison of hairs and textile fibers. I've spent approximately three and a half years in the laboratory involved in DNA analysis.

Q I wonder if you could just -- that seems to be a shorthand term. What does that term actually stand for.

A It's an abbreviation for a chemical substance called dioxyriboneuclasid.

Q Where does one find that?

A It's in essentially all cellular material.

Q Including that of human beings?

A Yes.

Q Now, at this time would you briefly relate to the ladies and gentlemen of the jury your particular educational background?

A I have a bachelor of arts degree with a major in chemistry from DePaul University. I majored in mathematics. I also have PhD from Carpendale, Illinois. I have a major degree in organic chemistry.

Q During the course of your undergraduate and graduate course of studies, did you take biology?

A I did take a zoology course, I've taken a biochemestry course which basically pertains somewhat to biology.

Q Now, I wonder if you can elaborate, if you will, with respect to your background, training and experience in the field of DNA analysis. I'll use the short term DNA.

A I have been involved in DNA analysis

for approximately three and a half years. I was assigned to a research group in July of 1987 that was responsible for developing the methods that we currently use for DNA analysis. I spent approximately a year and a half in that assignment, at which time I began my training in this field.

I also took course work from the University of Virginia and the National Institutes of Health dealing with molecular biology topics that are part of my or were part of my training. I conducted research. I was also involved in training during that first year and a half.

I was assigned to the DNA analysis unit in March of 1989. This is part of the laboratory that actually receives evidence in case work from law enforcement agencies throughout the United States. That evidence is subjected to DNA analysis, DNA comparisons that are conducted with that evidence. I've spent approximately eighteen months in that assignment.

I have been involved in the examination of approximately four hundred cases since my

assignment to that unit.

Q And as a follow-up to the last thing you said involved in approximately four hundred cases, would it be fair to say that of the cases you have been involved with they have been submitted to the FBI laboratories throughout the Continental United States?

A Yes, but they would all be law enforcement agencies.

Q Of the cases you have worked upon, how many of those were you called to testify in any courts of law before today?

A Concerning DNA analysis, I've testified in twenty-five cases. I would say approximately thirty times in those twenty-five cases.

Q And would those cases predominate on the Federal or the State side?

A I think in all cases they are local cases, not Federal cases.

Q Have you ever testified in any court in New York State today within the area of DNA analysis?

A I've testified twice in the State of New York.

Q In connection with the various times that you have been called upon to testify, would that be -- would you be called as a witness both by the prosecution and the defense?

A Primarily by the prosecution, but I have testified at the request of the defense on one occasion in the State of New York.

Q Do you belong to any particular organizations or associations in connection with your association with the Federal Bureau of Investigation, honorary groups, or things like that?

A I'm a member of three professional organizations related to my scientific work and so forth. I'm a member of the American Chemical Society, I'm a member of the American Academy of Forensic Science. I'm also a member of the Mid-Atlantic Association of Scientists.

Q Have you participated in any fashion in connection with the authoring of any type of articles in your particular field, particularly in the field of DNA analysis?

A I have authored articles both in hair and fiber analysis and several that pertain to

DNA analysis.

Q I don't know whether I'm phrasing this correctly, but with respect to the DNA analysis that you and your colleagues do in the lab in Washington, is there any one type of analysis that you utilize or rely upon to perform your tests?

A There are various ways of comparing DNA. We use one particular approach in our laboratory.

Q What approach would that be?

A It's called the restriction fragment length polyformism approach, also known as the RFLP.

Q Are there other methodologies that are included by labs, other than your own, or by private or governmental with respect to DNA analysis?

A There's one other technique presently being used to a somewhat limited extent for DNA analysis.

Q That would be what?

A It's a technique that utilizes a procedure that goes by the abbreviation PCR. It

involves taking the DNA and generating copies of it and then using that DNA for comparison purposes.

Q You did not utilize that in the FBI laboratory?

A We've done extensive research on that procedure, but we're not presently using it for case work to conduct cases or to conduct comparisons in cases that are being submitted to us.

MR. BOLEN: Your Honor, at this time I would ask that Dr. Deadman be submitted to the jury as an expert in the area of DNA.

MR. INSERO: Voir dire.

THE COURT: Okay.

VOIR DIRE EXAMINATION

BY MR. INSERO:

Q I represent Jeffrey Deskovic here. One question: You indicated that you were the author of a couple of articles on DNA?

A My name is listed as an author on several articles that have come out of the FBI laboratory. I'm not the chief author, but I have

contributed to the paper in some way.

Q What papers were those, sir?

A One dealt with the initial development of the DNA technology, what the FBI laboratory set out to do back in 1987. It was written at the end of 1987 or in the early part of 1988.

Q That could be described as a historical article on DNA, vis-a-vis the FBI?

A Historical in the sense that it was written prior to the development of our procedures, but we set forth what we planned to do, the necessary steps that we felt were required to validate our process once it was developed, that type of thing.

Q Are there any other articles, sir, if any?

A The recent article that was accepted for publication that contains my name dealt with our statistical approach for assessing the significance of a DNA match.

Q Sir, you are a PhD, not an EDD?

A It's a PhD.

Q In what?

A Organic chemistry.

MR. INSERO: I have no objection to Dr. Deadman being qualified as an expert witness, your Honor.

THE COURT: Yes, he's certified as an expert witness in DNA analysis and procedures.

DIRECT EXAMINATION

BY MR. BOLEN: (Continued)

Q From your vantage point in the lab, and particularly the DNA unit of the lab, from a scientific viewpoint which is easier to do when you're asked to make a comparison, a la DNA analysis, to include or to exclude?

A It's generally much easier, at least in terms of reaching a conclusion about the result of an examination, to exclude.

Q Now, as I've done perhaps with some other witnesses here, again in layman like terms, and if you have to use any scientific terms perhaps you can sound them out very slowly. If you can, spell them for us. And after you do that, if there is an acronym that you use to refer to it, please do:

Relying upon the technique that you say

you do the RFLP, when you're given knowns and unknowns and you seek to come up with some kind of a match, if you can, using DNA analysis, the technique that you referred to, what do you do from the beginning to the end? What's involved? And if you can just in layman like terms explain the DNA technology that you rely upon to come to a result, to include or exclude?

A The procedure is fairly straight forward in some respects, but it's also complicated in that it involves a number of steps. DNA is a chemical substance present in essentially all cellular material. It's a material that can be isolated from cells.

In our laboratory we take the isolated DNA, purify it. We then process it in a particular way which involves cutting the DNA up into pieces. DNA is an extremely long chemical substance that can be thought of as being anextremely long chain, a chain-like chemical substance. We process it and cut it up into pieces.

We then have the ability to locate certain pieces. These are pieces that have

several characteristics that we're concerned with.

One characteristic allows us to locate the same piece from every individual. In other words, we have the ability to locate pieces that have similar properties from every individual. These pieces, however, are different in other ways. They're different in terms of the sizes of the pieces. This variation in the size of the pieces that we locate and compare is our basis for determining whether we have DNA similar to a particular person or different from a particular person.

So, we process DNA in a particular way, and we have the ability to locate pieces of DNA from our samples. Generally these are samples of unknown origin, bloodstain perhaps, and samples of on a known origin, from a particular person. We have the ability to compare these fragments of DNA.

If they are of the same length we can determine that a particular person could have contributed that DNA. If they are of different lengths, then we can exclude a person as being a

contributor of the DNA sample we're examining.

Q Now, is the DNA components of every individual different and unique from every other human being?

A When the entire amount of DNA is considered, it's considered to be unique to a particular individual, with one exception, that is when you're comparing a DNA from identical twins. They have the same DNA.

Our procedures would show that. In fact, the pieces of DNA we're concerned with would be the same when you're dealing with identical twins. Other than identical twins, however, the DNA from different individuals is considered to be different.

Q Utilizing the procedures you do, you can determine DNA from an adequate specimen of blood?

A Yes. Given a certain amount of blood or other biological tissue, we can obtain results that are suitable for comparison and suitable for either inclusion or exclusion.

Q If you were given a bodily fluid, say seminal fluid in its constituent parts, would you

then be able to determine the DNA in seminal fluid?

A It will mostly contain sperm cells, a large number of sperm cells, all of which contain DNA. So, we would generally be able to get sufficient information from a seminal fluid sample.

Q In the process of the various tests you performed when you're given knowns and unknowns, and questioned things that you want to compare it to, with respect to the various stages of the various examinations that you do, are portions of those knowns and unknowns used up?

A Depending on the amount that we start with, we may in some cases consume all the sample that we are submitting or that is submitted to us. In other cases we may not consume it all. It depends on the amount we start with.

Q Does the FBI, to your knowledge, have any policy as to how they want to receive from another agency, whether it be a sister state or afederal agency requesting testing on blood? How do you prefer to receive that for comparison purposes? Specifically, do you prefer to see it

in the fluid liquid state or in the dried state?

A We have been asking laboratories to prepare a dried stain from a liquid blood sample and submit that to us. It's basically more stable. At least DNA is more stable in a dried state. And there are several other reasons. But we prefer to get it in the dried state.

Q I ask you the same question with respect to seminal fluid specimens. Is there any way you like to receive those to be used for comparisons with certain knowns?

A In almost all cases we've received seminal fluid as some type of stain, either on an item of clothing, a textile material, or we quite often receive vaginal swabs that are obtained from a female. And then those swabs would or should be allowed to dry out before they are sent to us.

Q Now, in particular, with respect to the methodology that you employ within the laboratory for DNA analysis, do you, in addition to determining and making, if you can, comparisons along DNA lines, do you do anything with respect to determining ethnic characteristics of any

specimens submitted to you?

A We at the present time do not have any way of determining ethnic background or racial background from a person's DNA.

Q Now, let me ask you just a few more questions: When for the first time did you and I personally meet?

A Just today.

Q And before today how many contacts have we had, not in person obviously, if you recall?

A I know we've talked on one or two occasions, but certainly just a few times.

Q Now, in connection with this case, Dr. Deadman, sometime in the month of January of this year did your lab and ultimately you have occasion to receive a number of items from the Department of Laboratories and Research in Westchester County related to one Angela Correa and one Jeffrey Deskovic?

A Yes, we did.

Q Now, in this case, as well as in all other cases, in terms of your again methodology within the office, when you're given things to compare to, is there certain terminology that you

give to the knowns and the unknowns?

A We assign a specimen number to the both the unknowns and the known samples. The known samples are given a K number. The unknown samples are given a Q number.

MR. INSERO: A Q number?

THE WITNESS: Yes.

Q K standing for known, and Q standing for question?

A Yes.

Q Very briefly, what steps do you take, if I can ask you this, to make sure that there is no mix among various items of physical evidence sent to you from different agencies? What procedures do you have in place to make sure there is no advertent or inadvertent co-mingling, so to speak?

A When a case is checked in, it's either left in the container it's submitted, or the entire case is placed in another container that is, in fact, separate from other evidence in the laboratory.

In DNA analysis we have had the submitting laboratories quite often do the

preliminary screening for us which involves the identification of blood or seminal fluid. They then have submitted cuttings to us which contain the samples that they have already prescreened or they have submitted the vaginal swabs or whatever may be the item they have identified, either the blood or the seminal fluid.

So, it's not voluminous. It's generally something that can fit into the envelope. All the items from a single case are put in an envelope and maintained in that envelope until the case is worked.

Q Let me ask you this, Doctor: In your experience when you have been submitted a question item which has been denominated through initial scientific screening as seminal fluid, is there any way for you independently to determine through your DNA analysis to see if there has been a co-mingling, so to speak, in the same sample given to you for analysis?

A We do not do any additional screening or any additional identification or analysis to determine if seminal fluid is present or sperm cells are present. We basically accept the

findings of the laboratory. In this case seminal fluid would have been identified, and we would have subjected the vaginal swabs sent to us for DNA analysis.

Q If you're submitted a sample that contains more than one seminal fluid from more than one person and you're asked to do a DNA analysis of that with knowns --

MR. INSERO: I'll object to that. There's absolutely no evidence before this jury that --

THE COURT: Wait a minute.

MR. BOLEN: I'll withdraw the question.

THE COURT: Let's not have any argument in front of the jury that shouldn't be before the jury.

MR. INSERO: I'm sorry, Judge. I apologize.

THE COURT: That applies to both of you. All right, he withdraws the question.

Q Dr. Deadman, if you need anything to refresh your recollection, please do. But again

in the month of January of 1990 do you recall receiving again from the Department of Laboratories and Research the following knowns: A dried blood sample of one Angela Correa?

A Yes.

Q A dried blood sample from one Jeffrey Deskovic?

A Yes.

Q Also, at or around the same time of that submission to your laboratory do you recall receiving, among other things, the following two things which you would have denominated as Q, standing for question: Several vaginal swabs taken from one Angela Correa?

A I received one vaginal swab, and then what was identified as a seminal pellet from a vaginal swab. It would have been basically a sperm pellet that would have been isolated prior to being submitted to our laboratory.

MR. BOLEN: May the record reflect that the question I just posed to the witness I would ask to be deleted and that the jury be instructed to disregard the question posed, a known

seminal from Angela Correa.

THE COURT: Come over here.

(At the side bar.)

THE COURT: What do you want to do now?

MR. BOLEN: I forgot how I framed it. He received, and they were denominated Q, vaginal swabs. I think I said from Angela Correa. I guess they were taken. But I might have added in my question, belonging to her. I might have misspoke. I'm not sure if I did or not.

THE COURT: Why don't you just go on.

MR. BOLEN: All right, fine.

THE COURT: I don't see any prejudice. Just go on.

MR. INSERO: I don't have any problem with that.

(Back before the jury.)

Q Perhaps I can phrase my question this way: In addition to the two knowns that you were given of the dried bloodstains, did you also

receive one or more vaginal swabs which you denominated as Q one or Q two, or something like that?

A Yes.

Q Now, thereafter, Doctor, did you have occasion in the laboratory, working with the various laboratory personnel in the DNA lab, did you have occasion to perform the RFLP analysis methodology to determine whether there was any match or not with respect to any of the questioned items submitted to you, the vaginal swabs or any of the either two known samples submitted to you?

A I did.

Q And I wonder if you could at this time, if you could couch in terms of reasonable scientific degrees of certainty, tell us what those results were vis-a-vis whether or not the material on any one or more of the vaginal swabs were in any way contributed from the known sources to that of Angela Correa and/or Jeffrey Deskovic?

A In our procedure we have a method for separating sperm DNA from non-sperm DNA. And so

when we examine something like a vaginal swab we would subject it to the separation process, because when a vaginal swab is taken there will quite often be cells from the female.

In this particular case the separation process was conducted on both samples that I looked at. There were profiles developed, DNA profiles, which is the terminology used to describe the results of our comparison. These DNA profiles were found in both the male or sperm fraction and the female or non-sperm fraction.

The profiles in the female fraction matched the profiles generated from the victim's known blood sample. And I would conclude that, in fact, the vaginal swab is consistent with having been used with the victim. In other words, the profiles are the same, which is what you would expect to obtain if the vaginal swabs were the ones that were used with the victim in this case.

The DNA, however, in the sperm fractions, the DNA profiles were dissimilar to the Defendant's DNA profiles obtained from this known sample. I would conclude that the DNA

isolated did not originate from the Defendant in this case.

Q When you use the term Defendant, you're referring to Jeffrey Deskovic?

A Yes.

Q If I could ask you this, Dr. Deadman: With respect to your results, with respect to the comparison with the known of Jeffrey Deskovic, when did you make that determination timewise in 1990?

A The process takes about a month. It's a fairly long process. And the final result was obtained March 2nd of 1990. So, the actual examination process would have been completed in March of 1990.

Q And when that final process was completed, could you tell us whether or not you had occasion to notify the Peekskill Police Department of your results?

A I did notify a Lieutenant Tumolo that the results, at least in terms of the comparison process, the results were negative, at least the known sample was not the source of the DNA from the vaginal swabs.

Q And when would that have been approximately that you made that notification?

A My notes indicated that it was on March 2nd.

MR. BOLEN: I have nothing further of the witness, your Honor.

MR. INSERO: Your Honor, may I confer with Mr. Bolen here just for a moment, please?

THE COURT: Yes.

(Whereupon, Mr. Insero confers with Mr. Bolen in a discussion off the record.)

MR. INSERO: Your Honor, may we approach the side bar, please?

THE COURT: Okay.

MR. BOLEN: It doesn't have to be on the record.

(Whereupon, the attorneys approach the bench for a discussion off the record.)

CROSS EXAMINATION

BY MR. INSERO:

Q Dr. Deadman, I don't have too many

questions here. This will be very brief.

Correct me if I'm wrong, but DNA essentially is a chemical substance?

A Yes.

Q Could you perhaps elucidate a little bit to the jury what that actual chemical substance is?

A Well, it's a extremely large chemical substance. It's somewhat unique among chemical substances in terms of the size and its purpose. It basically is a genetic blueprint for the organism that it's apart of. It basically directs and controls the formation of an organism.

Q Dr. Deadman, you just used a term genetic blueprint. Am I correct, sir, that this DNA substance would enable a scientist or one first in this area to differentiate between you and me?

A Again, depending on the procedures and the amount of the DNA you're dealing with, yes, we could easily use it to differentiate between two individuals.

Q It would, however, be difficult, if not

impossible, to differentiate between me and my twin brother, if I had a twin brother?

A If it was an identical twin in this case, yes.

Q Mr. Bolen asked you on direct examination whether or not you had enough samples to conduct this test. You didn't have any problem with the quantity of the samples in this case, did you?

A No. There was sufficient material to obtain conclusive results.

Q So, what your conclusion is, sir, is that the sperm sample -- excuse me, the sample on the swab did not come from Jeffrey Deskovic, is that correct?

A The sperm cells that would have been on the vaginal swabs did not come from Mr. Deskovic, yes.

MR. INSERO: Thank you, sir. I have no further questions.

MR. BOLEN: Thank you. I have nothing further.

THE COURT: Thank you, Doctor.

THE WITNESS: Thank you.

(The witness is excused.)

THE COURT: Ladies and gentlemen, I understand that we need a little longer break before we start the next set of witnesses. So, it's four o'clock now.

All right, you may file out. Please don't discuss the case.

(Whereupon, the Court declares a recess at 3:45 p.m., and the trial resumes at 4:15 p.m.)

THE COURT: Okay, bring the jury back out.

(Whereupon, the jury enters the courtroom.)

THE COURT: Are you ready, Mr. Bolen?

MR. BOLEN: Yes, Judge. The People call Officer Eugene Rooney.

E U G E N E R O O N E Y, a witness called on behalf of the People, having been first duly sworn, was examined and testified as follows:

THE COURT CLERK: Would you please

be seated. Would you state your full name, spell your last name and state your occupation and business address for the record, please?

THE WITNESS: My name is Eugene M. Rooney, Jr., R-o-o-n-e-y. I work for the City of Peekskill Police Department in the capacity of a police officer.

THE COURT CLERK: Thank you.

THE COURT: Proceed.

MR. BOLEN: Thank you.

DIRECT EXAMINATION

BY MR. BOLEN:

Q Officer Rooney, on November 17th, 1989, a Wednesday, at some point that day in the afternoon or early evening, did you have occasion to have some contact with a brother officer by the name of Detective Thomas McIntyre insofar as this case is concerned?

A Yes.

Q At that time and on that day, among other things, did he have occasion to give you a camera?

A Yes.

A Yes.

Q You have a photo lab, a dark room?

A Yes.

Q When you did that, when you processed the film that was in the camera, were you able to make any prints of any of the film that was in the camera?

A Yes.

Q How many?

A There was four total.

Q Would you take a look at what has been previously marked for identification as People's Exhibit 22, Exhibit 23, Exhibit 24 and Exhibit 25.

(Witness examines.)

Q Would you tell us whether you recognize each of those particular exhibits in the order that I'm showing it to you?

A Yes, I do.

Q Are those the four prints that you previously mentioned?

A Yes.

Q And you developed those?

A Yes.