though, didn't you?

A Yes.

Q What did you look for?

A Looked for any clothing, any weapons, blood.

Q Did you find any?

A No.

BY MR. GOSSETT: No other questions.

BY MR. LOCKWOOD: Nothing further.

WITNESS EXCUSED.

BY MR. GOSSETT: The State would call Dr. Pless.

JOHN E. PLESS, called to the witness stand as a witness on behalf of the State of Indiana, and being first duly sworn to testify the truth, the whole truth and nothing but the truth relating to said above-entitled cause, testified as follows on EXAMINATION IN CHIEF, such examination in chief

Q State your name, please.

A John E. Pless, P l e s s.

Q What is your business or occupation?

A I'm a forensic pathologist.

Q Are you licensed to practice medicine in the State of Indiana?

A Yes.

Q What is your specialty?

A My specialty is pathology with sub-specialty in forensic pathology.

Q What is forensic pathology?

A Well pathology is a study of disease. A pathologist is ordinarily a hospital based physician whose in charge of the hospital laboratory. He manages the technologist who do the tests on body fluids, to develop laboratory examinations for physicians. He also interprets those tests for physicians. He examines tissues removed from the body at surgery as well as perform post mortum examinations to determine the medical factors related to death. A forensic pathologist is further specialized in dealing with cause and manner of death often in sudden unexpected and violent deaths. He's also trained to evaluate injuries

scrutiny, develops opinions from them and takes them to the test of cross examination in the adversary manner.

Q What training and education have you had since high school to become a forensic pathologist?

A I'm a 1963 graduate of the Indiana University School of Medicine. From '63 through '64 I was a rotating intern at South Bend Memorial Hospital. From 1964 through 1966 I was employed by the U. S. Army as a research investigator at the Army Chemical Center doing work in toxicology and clinical pharmacology. From 1966 through 1970 I was a resident in anatomic and clinical pathology at the South Bend Medical Foundation Laboratories in South Bend, Mishawaka and Elkhart. From 1970 through '71 I was a fellow in forensic pathology at the University of Oklahoma. From 1971 through 1983 I was employed at Bloomington Hospital in a group of pathologists and also an Assistant Professor of Pathology at the Indiana University School of Medicine in Bloomington. Since 1983 I have been Professor of Pathology and director of the Forensic Pathology Division within the Department of Pathology at the Indiana University Medical Center. And more recently I have become an associate chairman within that

pathology.

Q And what does it take to become board certified?

A A board certification is accomplished after formal training in anatomic and clinical pathology of four years and in forensic pathology of one year and then for each specialty you submit yourself to a day and a half examination.

Q What type of examination is that?

A It's an examination involving written questions as well as gross and microscopic material which you have to examine and then answer certain questions.

Q Do you teach pathology?

A Yes, I'm director of the sophomore pathology course for medical students at the Indiana University Medical Center.

Q And do you train residents graduated from medical school?

A We train residents in pathology at the medical center and in addition we have a fellowship in forensic pathology.

Q Do you belong to any professional societies?

A Yes.

Q And what are those?

A I'm a member of the Indiana State Medical Association, the American Medical Association, the Indiana Association of

Society of Clinical Pathologists and the American Association for Automotive Medicine.

Q And have you written any materials that have been published?

A Yes, I have.

Q Have you testified in this and other Courts?

A Yes, I have.

Q And in what jurisdictions?

A I have testified in approximately sixty of the ninety-two counties in the State of Indiana. Two counties in the State of Illinois and one in the State of Kentucky as well as approximately five counties in the State of Oklahoma.

Q Now on November the 18th, 1984, did you perform an autopsy on [redacted]?

A Yes.

Q And was her body brought to you?

A Yes, it was.

Q And who identified that body to you?

A Fred Counter, the Hancock County Coroner, as well as Bill Applegate from the Hancock County Sheriff's Department.

Q Did you get a history from either of them?

A Other than the fact that the deceased, [redacted], had - was last seen on the 12th of November and the body was discovered on the 17th.

Q And that's basically the history that you got?

A Yes.

Q As you proceeded on your autopsy, what was the first thing that you did?

A The first thing was to examine and pnotograph the body exactly as it was delivered to the morgue. Following initial examination, then the body was searched very carefully for extraneous material and then that material was removed and all of the evidence was turned over to Officer Jerry Warman of the Indianapolis Police Department, now employed by the Marion - Indianapolis Marion County Forensic Services Agency.

Q Okay. What items were turned over to Jerry Warman?

A There were specimens of liquid blood from the body, fingernail scrapings, head and public hair scrapings as well as some fly eggs from the head. Hair that was found wrapped around the left middle finger. Hair found around the left index finger. Hair from the left upper shoulder and swabs of a material which we found that was florescent by

Altes and by trace evidence I mean hair or blood or anything of that nature?

A There was head hair, pubic hair and oral swabs as well as blood for toxicology.

Q I'm sorry?

A I said there was head hair, pubic hair and oral or mouth swabs as well as blood for toxicology.

Q Blood for toxicology?

A Yes.

Q How about blood for typing, can you tell whether or not a blood sample was taken?

A Yes, there was blood for typing.

Q Doctor, when we talk about blood for typing, when we talk about typing blood, what does that mean?

A Well blood can be typed for the basic blood types, AVO and Rh factors. It can also be typed for certain enzyme patterns found within it and in addition we can now do white cell antigen typing or HLA antigen typing.

Q HLA antigen typing is something you do with the white blood cells?

A Yes.

Q And is that different then what you do with the red blood

A No.

Q Doctor, what does the term secretor mean to you in connection with blood typing in general?

A Well approximately eighty percent of the population secretes their blood types into all of the secretions so that if fluids come from the body which are secretory fluids such as saliva they should contain the blood type of that person in the individual secretion and that's in about roughly eighty percent.

Q Eighty percent of all people?

A Yes.

Q Would show their blood type through their own bodily fluid?

A Yes.

Q And you mentioned saliva and how about seminal fluid, Doctor?

A Seminal fluid as well can show blood type.

Q And would it be as likely to find - be able to type blood from a sample of semen as it would from a sample of saliva?

A Yes.

Q A secretor is a secretor, isn't that true, sir?

secretions of the testis which includes the spermatozoa or the sperm from the seminal vesicles which has lubricating secretions as well as from the prostate. There are some enzymes in this material but largely its heavy with both carbohydrate and protein and serves as a vehicle and lubricant for ejaculation and impregnation of sperm.

Q Would it be a fair statement to say that where sperm is found, seminal fluid also has to have been present?

A Yes.

Q You talked about - did you say ABO blood typing?

A Yes.

Q Could you tell us a little more about that and specifically what does it mean to say that a person is a A type or an O type or B type blood?

A Well blood types are a feature of individualization of a human being. They are reflection of the genetic makeup or the inheritance of that person. The red blood cells have certain factors which are inherited from parents, combination of the factors of the parents are inherited in the child. There are various systems of factors based largely on the medical history of the determination of

such as the proteins and enzymes but as far as the ABO substances are concerned they are on the surface of the red cell. Most people in the population are Type AA, smaller number Type B, smaller number Type AB with a fairly large group in between Type O having neither A or B substance on the red cells.

Q You don't know what percentage of population --

A -- I don't remember.

Q Have you ever heard of an H factor describing blood?

A Yes.

Q What does that mean?

A H factor is a precursor substance which is the basic building material for the other factors. When a person has an O blood type, he will likely have more H substance since the A and B factors are not expressed. He will have more H substance then a person with Type A or Type B blood and certainly a person with AB blood will have very little H substance.

Q So as I understand it the H substance is not nearly as profound or pronounced in a person that has say Type B blood or Type A blood?

A That's correct.

A No, I do not.
Q But you did take a sample of her blood?
A Yes, I did.
Q And that was collected by somebody and perhaps tested?
A Yes.
Q But you haven't seen any of those reports and you didn't do the testing?
A Well as a matter of fact today for the first time I did see a report from the Indianapolis Police Department Crime Laboratory. I do not believe that it indicates the type blood of Peggy Sue Altes.
Q Who showed you this report at this late date?
A Mr. Gossett.
Q Is that the first time you had seen the results of any lab tests?
A Yes, it is.
Q And you mentioned earlier that you saw a picture today, I believe you said that it was a photograph of [redacted] apparently clutching something?
A That's correct.
Q Doctor, had you ever seen that photograph before today?
A No, I hadn't.

Q Is that important to you? Can it be, perhaps a question and more fair question.

A Yes, it could be.

Q Is it helpful in what you have to do to know everything you can know about the scene?

A Yes, it is.

Q Where the body was found. And I would guess, sir, that you cannot go to every scene of every death that is reported to you?

A No, I cannot.

Q So photographs have and often are helpful to you in determining what you have to determine?

A Yes.

Q And you're not in any position to tell this Court or Jury how it may have helped you in this case because you weren't shown any, were you?

A That's right.

Q Doctor, I think you said that bacteria would proliferate - strike that. I don't want to misquote you. Was it your testimony on direct examination that you would not expect a great deal of bacterial proliferation if the average temperature and environment of a body remained

A Yes.

Q A lot of it around. Would you expect to find bacteria in a living body that you examine?

A Yes.

Q Also in a deceased body?

A That's correct.

Q Have you ever had an experience where bacteria would mimic a blood type, sir?

A Well bacteria might interfere with the ability to detect a blood type if it were present in the blood.

Q Well but would it mimic, would it show a false positive for a blood type?

A If bacteria were present in the blood it might cause the red blood cells to clump together in an agglutination reaction where if the bacteria weren't present they might not clump together.

Q Doctor, what would you do in order to find out whether bacteria was interfering with the determination of a blood type. What test would you run and what would you do, if anything?

A Well one of the things that can be done is to culture

Q -- I'm sorry, I didn't catch that.

A To do a back typing.

Q A back typing?

A Yes.

To take the serum and expose it to cells that were not contaminated with bacteria.

Q Now what is serum, Doctor?

A Serum is the liquid portion of the blood.

Q And you would take that serum and you would do what with it, sir?

A Well this is an alternate way of testing for the group substances to see if the various antibodies to those particular factors were present in the serum of the person and so you take known A cells and B cells and test those for the existence of the antibody to those cells in the person. Let's say if they were Type O they would have both antibodies A and B cells.

Q And that's called back typing?

A That's called back typing.

Q How does that help you to distinguish whether or not bacteria is preventing you from determining blood type?

A Well that ought to confirm the presence of the antibody

luxury of having a blood sample of the substance that we want to test. Let's say that its a sample of - well let's just say for the sake of argument that its a blood sample taken off of a swab, one of the swabs that you use to take samples in this autopsy of [redacted] Can you still do the back typing procedure?

A Well in those instances you can use the swab as an an antigen and test with test cells on the swab taking various fibers of the swab to see if there are protein substances which react with those cells.

Q And that would tell you whether or not you have say Type B blood or whether you have bacteria?

A It is possible to determine the antibodies present in the protein on those swabs with that technique.

Q Are those techniques and the facilities for those techniques generally available say at the IU Medical Center?

A Yes.

Q And are the techniques generally available for use, I mean, this isn't something secretive that you've invented, is it?

A No.

Q Where would you find out about this kind of thing, how to

Department Laboratory.

Q And those folks would know how to do all this?

A Yes.

Q Now, Doctor, I'd like to ask you a hypothetical question if I may and I will advise the Court that I don't believe this testimony is yet in evidence but anticipate that it will be in evidence and I don't want to have to call Dr. Pless back as our witness after the evidence comes so I should ask permission of the Court and permission of the Prosecuting Attorney to use a hypothetical based on the facts that I feel are going to be introduced later and promise the Court that it will be tied up.

BY MR. GOSSETT: Can we approach the bench.

(COUNSEL APPROACHES THE BENCH).

BY THE COURT: Do you have much more cross to go?

BY MR. LOCKWOOD: We have a few moments, yes.

BY THE COURT: Take a short break.

in an autopsy and in running tests on that substance to determine blood type, it were determined that B blood type was apparent or showed up, what if anything, would that tell you about the donor of that seminal fluid?

A Well it would suggest that Type B substance was present in the fluid of the donor or in the secretions of the deceased.

Q Doctor, if I am a Type O blood and I am a secretor, is it possible for me to leave trace evidence showing blood type B if my seminal fluid is examined or my saliva is examined correctly and appropriately?

A Not ordinarily.

Q In other words, I can't be more than one blood type, can I?

A Well there are rare instances where and specifically in Type D where a Type B individual would actually type out as an O.

Q Okay, how about the other way around where an O type would type out as a B?

A I - I don't remember. I'm not sure whether that's possible or not.

Q And how rare would that be that someone of one blood type

me lay the foundation for this, Doctor, let me withdraw that last question and ask you do you have any supervisory duties as being a patnologists out at I.U.?

A Not at - well my supervisory duties are directly related to forensic pathology in the performance of autopsies.

Q And do you have people that support you in your work like laboratory people?

A Yes.

Q Do they make reports to you in the general course of business concerning what they found in blood analysis et cetera?

A Yes.

Q If you received a report that said that seminal fluid had been examined scientifically and that the - it was checked for blood type and the blood type showed was Type B and if you knew who the donor was, would you be prepared to testify in a Court of Law that within a reasonable degree of medical certainty, the donor was a Type B from the specimen that was examined scientifically?

A If I had direct knowledge of how the tests were performed

A I can't always assume that. If I don't have dir-
control over that laboratory.
Q Well do you rely on the technicians that do supply you
with that type of evidence?
A Yes.
Q Why do you rely on them?
A I rely upon them if I have knowledge of either their
capacity or their work or the people that are in charge
of their specific laboratory.
Q Okay. Do you know a Carol Kohlmann?
A I have met her.
Q Does she work at I.U.?
A No.
Q And have you ever had occasion to review or examine any
of her work?
A No.
Q You would not feel safe in relying on her work if she
didn't work with you and you hadn't seen any work pre-
viously?
A Well let me explain. This has nothing to do with dis-
crediting the laboratory or anybody that works under it
but its common practice when a patient is transferred

they know and do the tests and that's not to say that mistakes are common because they aren't but its just a matter of confidence so I cannot tell you about the adequacy or the competence of any technician in a laboratory over which I have no control.

Q Okay, but to get back to my original question. If you had a donor that you knew was a donor but you didn't know the blood type and a sample of that donor's semen was tested and it tested B for blood type, could you then testify within a reasonable degree of certainty that that donor was a Type B blood if you had confidence in the laboratory work that was done?

A Yes, I believe so.

Q Within a reasonable degree of medical certainty?

A Yes.

Q Doctor, do you know what absorption elution analysis is?

A Yes.

Q What is it, please?

A It's a test in which antibodies are absorbed onto test cells and then eluded from the serum of specimens and then analyzed separately from the blood.

Q What's the purpose of doing an absorption elution analysis?

Q What are you trying to find out when you conduct that kind of a test?

A Trying to find out the presence of antibodies in the specimen to various antigens or blood substances.

Q Antigens from which blood types can be determined?

A Yes.

Q And what about an absorption inhibition analysis, what is that?

A It's very similar but I'm not absolutely certain how those two vary.

Q Is the general purpose of the absorption inhibition analysis similar to that of the absorption elution?

A Yes.

Q And that again, sir, would be to discovery whether there were antibodies in the specimen being examined?

A Yes.

Q From which the blood type could be determined?

A Yes.

Q Now this absorption elution and absorption inhibition tests, is that the same kind of tests as back typing?

A No.

Q So if you were going to try to determine whether you

inhibition, would you?

A Well it depends on what the specimen is. There are some specimens that are - it is more minimal to do a back typing and other specimens that are more complicated speciments that absorption elution or absorption inhibition tests are more suitable so it might be wise to do them all.

Q How about swabs that you took during the autopsy of Peggy Altes, would those - could those be amenable to this back typing test that you've talked about?

A Yes.

Q And also amenable to absorption elution and absorption inhibition?

A Yes.

Q Now, Doctor, if you had a question in your mind as to whether you were getting a false reading for a blood type, would you at least try to conduct all three tests?

A Well once again it would depend on the condition of the specimen and the amount of material available. Obviously it would be easy to do all three tests if there was ample material.

Q Okay, you would do all three tests if there was ample

mortem wounds inflicted on Peggy Altes?

A Yes.

Q Were these marked consistent with wounds inflicted by her assailant or were they more consistent with wounds which might have been associated with the area in which her body was found?

A There more consistent with injury from the terrain and plants in the area where the body was found.

Q I believe you indicated on direct examination that or someone said, maybe one of the attorneys, that you notice some trailing marks from the wounds. What are those, sir?

A Those are superficial incised wounds which are seen at the edges of stab wounds indicating the direction of travel of the weapon.

Q Were you able to determine anything about the direction of travel traveled from the trailing marks that you observed associated with the wounds of Peggy Altes?

A Yes.

Q What were you able to determine?

A Most of the trailing edges were down or to the right.

Q And does that have any particular meaning to you, sir? What does that tell you about her assailant, if anything?

Q Does it tell you anything about whether her assailant was right-handed or left-handed?

A I have no idea whether the wounds were inflicted from behind or in front.

Q Alright, but if you had been shown photographs of the scene and if you had seen State's Exhibit 10 prior to today, would that have helped you to determine whether or not the wounds were inflicted from the front or the back?

A Well although I may not have seen State's Exhibit 10 which I assume is the photograph showing something clutched in the hand of the deceased, I saw photographs of the body at the scene. I suppose based on that exhibit my opinion would be that it's more likely she was stabbed while lying on her back.

Q And does that tell you anything about whether her assailant would be left-handed or right-handed?

A Its - not really.

Q So you just can't tell from the evidence?

A No.

Q Doctor, let me show you what I have marked as Defendant's Exhibit A. Would you examine that, please. Is there

to the question. Defendant's Exhibit A is not admitted into evidence. It was offered a long time ago without any sufficient basis. There is nothing to even tie that to this case in any way whatsoever at this time and I would object to any questions being asked about it until it is properly put in evidence.

BY MR. LOCKWOOD: May I respond, your honor?

BY THE COURT: Yes.

BY MR. LOCKWOOD: Briefly. It's the State's part of the case. It's not our turn to call witnesses. I believe that the foundation for the introduction of this photograph would be relatively simple and I would submit to the Court that the way to do it is for me to call

that they thought he did because of what they say, the type of film he used and I expect that Sheriff Gulling will in fact identify this photograph and that he will in fact say that's it fairly and accurately portrays what he photographed. I can call Dr. Pless as our own witness in our case but I'm asking that Dr. Pless be allowed to answer this question now with the promise that we'll tie up the evidence at a later time.

BY MR. GOSSETT: Well, your honor, I don't think that he can tie that evidence to anything to do with this crime period, now, ever or in the future and I would object to it. There is no basis for it at all and he can't just offer it to the jury now and allege at some point and time tnat he'll be able to do that because I don't believe that he can.

a mile of --

BY MR. SHUMACKER: -- we don't know that --

BY THE COURT: -- the evidence does not show that. I'll sustain the objection with respect to this exhibit.

BY MR. LOCKWOOD: With respect to my question to Dr. Pless concerning it?

BY THE COURT: Yes.

BY MR. LOCKWOOD: Thank you. No further questions of the witness. Thank you.

The said witness testified further on REDIRECT EXAMINATION in response

State of Indiana.

Q Dr. Pless, just a few questions. You said when you examined the body you found fly eggs, where did you find those?

A From the head in the hair.

Q And how would they get there?

A When flies become active and that is normally when the temperature is above 40% they deposit the eggs especially in an area where there might be blood or other secretions.

Q Do you attach any significance to these eggs?

A It just is another indicator that the deceased had been dead long enough for flies to be active and deposit them there so it happened - flies have to deposit their eggs during the daytime so there had to have been a daytime period in which flies would deposit their eggs.

Q Did you find any fibers in the wounds you examined?

A In the wounds?

Q In the wounds?

A I don't - I don't believe so.

Q Now when you mix the seminal fluid of a non-secretor and the secretor, what do you get?

A You get the - essentially examination which would indicate

A You get the same blood type.

Q All people have seminal fluids?

A All males have seminal fluid.

Q Some females?

A There are some fractions of the fluid which are common to vaginal fluid but there is usually enough to differentiate them chemically.

Q Did you find any evidence of bacterial activity of [redacted]?

A Well there is always bacterial activity in all human beings. On the specimens that I personally examined from her vagina, I made no notation that there was any excessive bacterial activity.

Q And how about other fluids, did you have any tests run on them?

A No.

Q Did you have tests run on her blood?

A Only toxicology run by the State Department of Toxicology.

Q Did you rely on that?

A Yes.

Q What did that show?

A These materials were described as being fresh and in good

A That there was a small amount of ethyl alcohol in the blood.

Q What is ethyl alcohol?

A Ethyl alcohol is the alcohol commonly known as drinking alcohol.

Q Do you have a medical opinion on how that ethyl alcohol got into the body of [redacted]?

A It can get in one of two ways. It can be ingested and be absorbed through the stomach or it can be generated in the blood by bacteria. This particular level of 20 milligrams or point 0 2 is consistent with what we see in bodies that have been dead in excess of 48 hours.

Q And I believe you testified on cross examination that the death would have occurred more likely between the 12th and the 15th of November?

A Yes.

Q No later than that?

A Yes.

Q Now have you seen the photographs of the scene?

A Yes, I have seen photographs of the scene.

Q You had not seen Exhibit 10?

A That's correct.

Q And when did you see that?

A Sometime after the autopsy, I can't tell you exactly when, I believe it was several weeks after the autopsy.

Q Did you see other pictures at that time?

A Yes.

Q Now you testified that it was possible to leave a B trace, AB can type out O and you weren't sure about the other way around?

A That's right.

Q What were we talking about there? I'm not sure I understood it.

A Well there is a rare blood type called the Bombay type in which it may actually Type O when in fact it is B or at least the type Bombay and I don't remember the specifics with regard to that. I would have to go back to the textbooks and look it up. That is one instance where one purported type of blood can type out as another type at a different time under different circumstances.

Q Is this why hospitals do their lab work over and over again?

A That's right.

Q And if you was a physician sitting in your office and

depending upon why you were examining the blood. They would be different in the hospital laboratory than they would be in a forensic laboratory.

BY MR. SHUMACKER: That's all I have.

The said witness testified further on RECROSS EXAMINATION in response to questions propounded by Mr. Lockwood, Attorney for Defendant.

ReCross
John
Pless

Q Doctor, I don't want to belabor this but I hope you can appreciate that this could be very important in this case. Are you saying, sir, that there is no standardization among the various people in the State who are doing lab work for the purpose of presenting evidence in Court?

A Well that's a very difficult question for me to answer. There are - I have no trouble answering that for hospital laboratories but the standards within forensic laboratories are really not the same as they are in hospital laboratories.

Q What would your answer be as to hospital laboratory?

A I would say, yes.

Q How about police forensic laboratory?

police and other forensic laboratories in this State?

A It is possible for forensic laboratories to exist in this State without any standards, that's correct.

Q And there is not one single governing body or one single person who is in charge of seeing that whatever tests are conducted in police laboratories are conducted correctly?

A That's correct.

Q There is no one in a position of authority to see that tests run in police laboratories in the State are run thoroughly?

A That's correct.

Q Doctor, I thought you said on redirect you made no notation of excessive bacterial activity with regard to Peggy Altes?

A On the specimens that I examined from her vagina, that's correct.

Q Now just for the benefit of the jury and I, would you have made a notation had you observed excessive material activity in Peggy?

A In the vaginal material, yes.

Q And can we take it then by the fact that you made no such

Q And when we say excessive bacterial activity, what standard are we using, what does that mean?

A Well it's a very equivocal thing. We're looking at a specimen which has bacteria in it already. If the thing were completely overgrown with bacteria, there would have been a mention made in the report.

Q So we're talking about bacterial activity in an area that you would normally expect to find?

A That's correct.

Q Now with regard to blood alcohol, Doctor, isn't it true that the natural processes of decomposition create ethyl alcohol?

A That's right.

Q And even in the most decomposed of bodies, you would not expect to find more then .04 percent blood alcohol due to decomposition?

A It could be a little higher then that.

Q How much higher?

A It could be .5, possibly .6.

Q Now are we talking about .05 and .06?

A That's correct, .05.

Q And I think you said earlier that refers to what twenty

A That's correct.

Q And that does not indicate to you, does it, that there was excessive or unusual bacteria activity with regard to [redacted]

A Well understand that the examination made by Dr. Forney in the Toxicology Laboratory is done many days after the autopsy and it is possible for bacteria to generate in that specimen during that period.

Q Okay, so if I understand you correctly, you're saying that at the time you took the specimen it wouldn't be any higher then .02 at the time you took it?

A That's correct.

Q So while we was waiting on Dr. Forney to run his tests it could have proliferated somewhat?

A That is correct.

Q And so that's no indication to you that at the time you took the sample, there was excessive bacterial activity present?

A Well quite frankly I would expect there to be some bacterial activity present.

Q But I'm talking about excessive or unusually high?

A Well its all a matter of what you mean by excessive.

Q Didn't alarm you or even cause you to make a notation about it?

A That's correct.

Q This Bombay blood type, it sounds like - that's pretty rare and you say you have heard or know of it maybe to cause a B person to type O. A person with B blood when their blood is taken and tested they will show an O type?

A Yes.

Q In all of your experience and your studies, have you ever known anyone who was an O Type blood to test B?

A I don't remember.

Q Now Mr. Shumacker asked you about mixing fluids of different people with regard to blood type. Would it be possible to determine [redacted] blood type from examining the samples that you gave to the technicians?

A It should be, yes.

Q So you wouldn't be surprised if a technician examining that sample came up with a type of blood that we know [redacted] was?

A No.

Q If that fluid of [redacted] were mixed with the fluid

Q You would not. This H factor you're talking about, is that a precursor to Type A blood also?

A Yes.

Q And it's a precursor to Type B but not in as great an extent, is that right?

A That's correct.

BY MR. LOCKWOOD: No further questions. Thank you.

WITNESS EXCUSED.

BY THE COURT: We have at this point somewhat of a change in the trial schedule that I indicated to you earlier. It has come to our attention that Mr. Lockwood's wife is going to need to have some back surgery, I think its this Thursday so we will not be meeting on Thursday but rather at the close of tomorrow we'll be continuing the case over until the following Monday so you might want to make

Q As far as the exhibits which were admitted
today that you identified, did you bring those with you
today?
A Uh - no, Carol Kohlmann brought them.

BY MR. GOSSETT: Thank you.

BY THE COURT: How do you spell your
last name?
A W a r m a n.

WITNESS EXCUSED.

CAROL KOHLMANN, called to the witness stand as a witness on behalf of the State of Indiana, and being first duly sworn to testify the truth, the whole truth and nothing but the truth relating to said above entitled cause, testified as follows on EXAMINATION IN CHIEF, such examination in chief being conducted by Mr. Gossett, Prosecuting Attorney, 18th Judicial Circuit, State of Indiana.

REDIRECT EXAM
JERRY WARMAN

A I'm a forensic serologist for the Indianapolis Marion County Forensic Services Agency.

Q And what is a forensic serologist?

A A forensic serologist is one who specializes in the study and identification of blood and biological fluids.

Q And do you need some specialized training for being able to do that?

A Yes sir.

Q And what training is that?

A I have a Bachelor of Arts Degree in Chemistry from the Indiana University and I have received specialized training in forensic serology from the Michigan State Police Department, the Northwest Crime Laboratory, the Serological Research Institute in California and I have six hours of graduate credit in forensic serology from the F.B.I. Academy in conjunction with the University of Virginia.

Q How long have you been acting as a forensic serologist?

A Little over eleven years.

Q During that period of time approximately how many examinations have you made?

A Examinations, I have no idea, sir, and the records. They would be - number in the thousands. I have testified

Q Where do you have your laboratory or your place of work?
A Our laboratory is located in Marion County, 40 South Alabama Street.
Q Do you investigate all cases or are you requested to investigate certain specific cases?
A No sir. We are requested by the detective assigned to a particular case. At the time the detective is investigating the case he will make out request cards for the laboratory and state to us at that time specific items which he would like examined and what particular examinations he would like us to check for.
Q Did you receive a request with regard to the case involving one Peggy Altes?
A Yes sir, I did.
Q And did you make an examination pursuant to that request?
A Yes sir, I did.
Q What are your normal procedures on making an examination of items requested by the Police Department?
A Once our laboratory has received an analysis request card from the detective, one of the forensic serologists will be assigned to that particular case. If it's evidence from an Indianapolis case or a Marion County case we will

A I returned them back to the Crime Laboratory. At that time there were swabs removed from the envelope. I checked them to be sure that they were air-dry at that particular time. They were then sealed in plastic and frozen. The liquid blood sample was maintained in our refrigerator for analysis for blood typing purposes and the dried - there was a dried vaginal smear that was maintained in the laboratory and later subjected to microscopic analysis after processing.

Q Now were these tests that you chose to run on the items or how did you determine what tests you were going to run?

A I was asked by Detective Sergeant Lou Christ to examine the deep vaginal swab, the deep vaginal slide, I stand corrected, the swabs which were submitted from the autopsy of [redacted] and also the liquid blood sample. The liquid blood sample was run for blood typing procedures. It was run for Lewis Blood Typing to determine the victim secretor status and it was run for the presence of blood proteins or enzymes. The swabs and the slide I was asked to identify and analyze and determine if there was a presence of seminal fluid constituents on those items submitted.

Q And on State's Exhibit No. 27, it says Lab Item No. 1?
A That's correct.
Q In what condition did you receive that envelope when you picked it up at the property room?
A The envelope was sealed when I received it.
Q When you opened it, what did you find?
A Inside there was a glass slide and the glass slide was marked deep vagina, ML 49-84 and that slide I put into a cardboard slide holder to preserve it and to keep it from being broken.
Q Did you make an examination of that item that was contained in the evidence envelope?
A Yes sir, I did.
Q And what was the result of your examination of that item?
A After staining of the slide and that's in order to use a biological differential stain to differentiate the spermatazoa and different segments of the spermatazoa. The slide was microscopically analyzed and spermatazoa were identified.
Q And do you have a name for the procedures you used there or the staining technique?
A The staining technique was what's called a Christmas Tree

Q And what about that stain makes the presence of sperm obvious?

A The staining is good for forensic purposes because it will take spermatazoa are composed of a sperm head and a very long tail with a neck or mid-piece segment. The staining procedures uses two different colorations, a green and a red coloration. To the top portion of the sperm head which is called an acrosome cap, it will stain it like pink. The back portion of the sperm head will be stained a dark red. The neck or mid-piece section in the tail will be stained green. It is very important for us to have this staining procedure because it would be possible if you are examining a sperm head only which is sometimes found in rape cases or in cases of sexual assault to not misidentify spermatazoa and sperm would be sometimes - the sperm head would be the same size as say yeast cells and in order to differentiate you use a biological differential staining and by identifying the acrosome cap and the different pieces of the sperm, you are able to identify the spermatazoa.

Q And this is done with some microscopic examination of the slide?

A Yes sir, I did.
Q If I can find your Lab Item No. 2, State's Exhibit No. - first of all back on Lab Item No. 1, did you perform any other examinations of this item?
A No sir, I did not.
Q With regard to State's Exhibit No. 30 marked your Lab Item No. 2, what condition was this when you received it from the property room?
A The envelope was sealed when I received it from the Indianapolis Police Department property room.
Q And just so I keep things in order, I apologize, but once you were through with this item, what did you do with it, going back for the record. Item No. 27, your Lab Item No. 1, when you were completed or you had completed your examination of it, what did you do with it?
A I placed the slide in what's called a cardboard slide holder, just will keep the slide from being broken during transport, placed it back into the original envelope in which I had received it, sealed up the envelope, placed my evidence sticker on it and dated it and initialed it and submitted it back to the Indianapolis Police Department property room.

A I removed that item from the Indianapolis Police Department property room this morning at approximately 7:15.

Q And you wouldn't give it to me until I signed it out, is that correct?

A That's correct.

Q With regard to State's Exhibit No. 30, you say you received that in a sealed condition?

A That's correct, sir.

Q And what was contained in that after you opened it?

A Inside tnere are two what we call cotton tip applicator envelopes and inside each envelope, those envelopes are marked with the Case Number 163426-F IUML 49-84, one of the envelopes is marked deep vagina with the date November 18th, 1984, J. Warman, Wishard Memorial Hospital and it contained two cotton tip swabs. The other envelope inside again is the cotton tip applicator envelope, it's marked with the Case Number 163426-F IUML 49-84, JEP, J.Warman, vagina, November 18th, 1984, Wishard Memorial Hospital and it also contained two cotton swabs.

Q After you opened the envelope and found these swabs, what if any examinations did you perform on them?

A I was asked by Detective Sergeant Lou Christ to check

Q -- strike that question. What test did you perform on those swabs and how was the test performed?

A Okay. A number of very different tests were performed on the cotton swabs. The tests were to identify the presence of seminal fluid. They were also to identify the presence of blood group substances. The first test peformed was what is called an Acid Phosphatase test. Acid Phosphatase is a protein or an enzyme. It's found in very high concentrations in seminal fluid. It is also found in very low concentrations in other body flu. It can be a preliminary seminal fluid identification pr cess. It can indicate the presence of seminal fluid. It's a colorimetric test which we run. It's run agains known positive and negative controls. This test was ru on the particular swab itself. It was run directly in swab and it was also run in an extract of the swab. Th second test that was run was what's called a prostate a P30 test. It's a test for a protein called the prostat antigen or P30 for short which is a human seminal fluid protein excreted by the prostate gland during ejaculati It also would be another form of identifying seminal fl The third test that was run were from the extracts of e

different tests which I am describing now. From the sediment that was spun and removed from the bottom of the extract, a slide was prepared by myself in the laboratory. The slide was air dried. It was heat fixed and then subjected to the same type of differential staining which we use in the laboratory for seminal fluid, the Christmas Tree stain. After that the slide was microscopically examined for the presence of spermatazoa. The fourth test that was run was a test to indicate the presence of amylase. Amylase is an enzyme. It is found in saliva. It's also found in other body fluids but it is found in saliva in much higher concentrations fifty to a hundred times that of other body fluids. What we attempt to establish on analysis of swabs for amylase is whether or not we might find levels which are high enough to be consistent with the presence of saliva. The next test that was run we run preliminary and on some of the swabs confirmatory tests were run for the presence of blood staining. Upon visual examination, the swabs appeared light reddish brown. Some of them had a darker reddish brown coloration to them which can indicate possible blood staining. The initial blood staining or

capacity of the molecule. That initial test is a preliminary test. You can get a positive from other things besides blood. On some of these swabs where there appear to be enough staining present. We also did a confirmatory test for blood which is a crystal test in which we actually take the hemoglobin from the molecule and make a crystal out of it and identify that crystal microscopically. That is a confirmatory test for blood because nothing else will cause this hemochromogen crystal to form except for blood. Further testing was run in order to try and determine once seminal fluid had been established on some of the swabs whether or not we could get any means of identifying the seminal fluid donor and approximately eighty percent of the population, the individuals are called secretors and this is determined sometimes by their blood, sometimes by their saliva and with the eighty percent that are secretors in their blood they are one of four major blood types, Type A, Type B, Type AB or Type O. If an individual is a secretor in his body fluids, that is his perspiration, in the seminal fluid, puts a woman in her vaginal fluids and their saliva, we would expect to pick up what's called a blood

up A blood group substance activity in their body fluids and possibly also what we call H substance because H is like a precursor to the formation of the A substance. There was testing run by two different methods to see if we could pick up any of this blood group substance activity. The one type of test was called Absorption Inhibition. It is sensitive test. It will determine the presence of blood group substance activity from secretor individuals. The second test that was run was what's called Absorption Elution. It is a much more sensitive test. It can sometimes pick up blood group substance activity which is in much lower concentrations in non-secretor individuals. After we had run those particular type of tests against known positive and negative controls, the swabs since they did appear to be slightly bloody, we did subject them to what we call electrophoresis analysis. Electrophoresis analysis is a means of separating blood into various blood proteins which can be found in blood, some of them are found in seminal fluid. Some of them are found in vaginal fluid. And we were looking for various types of these. We can determine Peggy Altes blood from - we could determine her

semen donor in the case and that was performed by electrophoresis analysis and that was the only major testing that was performed on all the swabs which I was submitted.

Q Now you had received a blood item from [redacted] is that correct?

A That's correct.

Q And you ran an examination on that, I believe, State's Exhibit No. 31 contained the blood, was this the one you ran a test on?

A Yes sir, that's correct. There was contained within the envelope a liquid tube of blood and the liquid tube of blood was labeled [redacted], IUML, 49-84, 11-18 Heart, blood, 163426-F County Coroner.

Q And did you make an examination of that blood?

A Yes sir, I did.

Q What sort of test did you run?

A On the liquid blood sample we subjected it to two different types of test to determine her major ABO blood type. A person is Type A, they are Type B, they are Type AB, they are Type O, one of the four basic blood groups. Forward and reverse typing were performed to determine the presence

was determined to be Blood Type A. After that time we subjected the liquid blood sample to what's called Lewis Blood Typing. Lewis Blood Typing is our means of determining a person secretor status.

Q Let me stop you for just a second. What is a secretor?

A A secretor is one who of about eighty percent of the population who in their body fluids would secrete a blood group like substance which we can determine by Absorption Inhibition testing.

Q Is that a water soluble substance?

A Yes, it is. It's basically a water soluble substance.

Q And what is the substance composed of, what material is it?

A It's glycoprotein.

Q It's a protein of some kind?

A Uh huh, yes sir.

Q So you made a determination of Peggy's blood, about whether she was a secretor or not?

A Right, that's correct, sir.

Q And what was the result of the test?

A [redacted] was determined to be a Lewis Blood Type A, A negative, Lewis Blood Type B positive and --

body fluids I would expect to - in her body fluids I would expect to pick up a Blood Group A and possibly H substance activity.

Q Did you also run an analysis on the blood from Jerry Watkins?

A Yes sir, I did.

Q When did you perform that test?

A That test was performed on November 28th, 1984 and I was submitted from Detective William C. Applegate on November 27th, 1984 at 3:15 in the afternoon a sealed Hancock Memorial Hospital envelope which was marked Hancock Memorial Hospital, P. O. Box 827, Greenfield, Indiana, 46140, IPD 163426-F, 11-27-84, 2:10 P.M., HCG - HCSD, I stand corrected, 30-84-0848, Jerry Watkins one vial of blood from Jerry E. Watkins, Patricia Meyer, William C. Applegate, HCSG - HCSD, GEW, PEM.

Q And you performed a test on that blood?

A Yes sir, the same type of testing was performed on the blood of Jerry Watkins as was performed on [redacted].

Q And what were the results of that test?

A Jerry Watkins was determined to be major ABO Blood Type O. In his Lewis Blood Type he was Lewis A negative,

Q Now you say you would expect to pick up H Blood Group substance activity, what does that mean?

A In --

Q -- first of all, what is an H Blood Group substance?

A In the fluid of secretor individuals, there is a glycoprotein which is water soluble. It acts like an O Blood Group substance and from our testing we can pick this up. It is characteristic of his blood type. Any individual of Type O would secrete what's called an H Blood Group substance in their body fluids and it can be determined by Absorption Inhibition analysis.

Q Would any other blood types also indicate like that H type substance?

A It's possible that the H type substance can be seen in people of Blood Type A and Blood Type B and the reason being is that H substance seems to act they think now as a precursor to the formation of the Major A and the Major B Blood Group substance activities.

Q What's a precursor?

A It's formed prior to the actual formation of the A and the actual formation of the B Blood Group substance so it is possible to have some there that has not been

A That's correct. It could be understood that way.

Q Did you determine anything else going back to [redacted] blood, did you determine anything else or run any other test upon her blood and if so what were the tests and what were the results?

A Yes sir. The blood was subjected to the electrophoresis analysis which I described earlier in order to determine various protein types. These protein types - well they're all associated with the red blood cells. Some of them are also associated with vaginal fluids and seminal fluids. We were trying to establish a profile of [redacted] to know what to expect in analysis of the vaginal swab to see if we could find anything other then hers.

Q And what characteristics of her blood did you determine and note in your report?

A Okay, there were six enzymes or proteins that were checked for. The first one is what's called Esterase D and in that there are actually three different types available. [redacted] was determined to be a Type 2-1. The second enzyme that was checked for was Phosphoglucomutase. [redacted] was determined to be Type 1. The third one was Glyoxalase 1, a test to determine Peggy Altes type were inconclusive.

Adenosine Deaminase was the next one. Peggy Artes was determined to be Type 1 and the last one was Adenylate Kinase and [redacted] was determined to be Type 1.

Q Did you also make a similar determination of the blood of Jerry Watkins?

A Yes sir, I did. Jerry Watkins blood sample was subjected to the same type of Electrophoresis analysis as was the blood of [redacted]. His blood protein groupings --

Q -- let me back up a second, you used some terms that I'm not real familiar with and maybe the jury is not either but what is Electrophoresis?

A Electrophoresis analysis is a means of subjecting a blood sample or vaginal swab to an electric current in a medium. In this case its either auger or auger and starch mixture which is a support medium and under an electric current the various proteins will separate out based on their charge, based on the mobility and the differences in the different types.

Q Okay, now I know this may sound extremely basic to someone with your knowledge but what is auger?

A Auger is a support medium, it acts a little bit like a jelly to hold --

proteins based on the electrical current that's later applied. It's actually a means of creating a substance or a solid, semi-solid state that we can put the actual piece of blood stain in or the piece of the swab into and it also helps to separate the proteins.

Q Okay. As the proteins are separated on this plate, how do you determine that they have in fact separated and how do you identify them?

A The - we run them with basic laboratory procedures which are accepted among the scientific and research community. Once there are specific time limits which are involved and we know that the proteins will separate. In the first system that's used, they are separated in a time of about three hours and fifteen minutes at a voltage of 300 volts. The second system that's used takes much longer. It takes a lot lower current and it takes a time of approximately sixteen hours and based on the standards that have been set the proteins will have separated and migrated in that particular period of time, then are later developed.

Q Okay. You talk about migrated, you mean they actually move --

A -- yes --

Q And do different proteins move at different -

A -- yes, they do --

Q -- or how do they separate?

A They move on different speeds based on their chemical compositions and based on their charges and their differences in the electric field.

Q Now you ran these tests on Jerry Watkin's blood?

A That's correct.

Q What were the results of your tests as far as the - what the test showed?

A Jerry Watkins was determined to be on the first protein that was analyzed an Esterase D, Type 2-1. He was determined to be a Phosphoglucomutase, Type 1, a Glyoxalase 1, Type of 2-1. Erythorocyte Acid Phosphatase test, protein BA. Adenosine Deaminase Type 1 and Adenylate Kinase Type 1.

Q Okay. You said one of them was a BA, what are those factors or what does BA mean in that context?

A An Erythorocyte Acid Phosphatase, the designation that has been given in scientific communities of the various different types is letter designation rather than numbers and the difference of the proteins is indicated by a letter

A That's correct.

Q Now with regard to Lab Item No. 2 going back to that. Were there any other tests run other than the ones that you've described so far on that item?

A No sir.

Q Which I think you said earlier were two packages of swabs?

A That's correct, sir.

Q With regard to - did you reach any conclusions with regard to Lab Item No. 2 other than the results of those tests which you previously testified about?

A I believe I testified as to the actual type of testing but not to the results.

Q Okay, what were the results of your test?

A There were four swabs submitted within the envelope, the sealed envelope which I received. Swab No. 2-1. From that swab and analysis of that swab we found a Negative Acid Phosphatase Test. Negative Prostate Antigen test for the presence of seminal fluid. We found upon microscopic examination no Spermatazoa. Amylase testing to see if we could indicate the presence of saliva did not indicate an elevated level for us to conclude that saliva may be present. Blood had been identified on the swab

showed the presence of blood group A, [illegible]
activity. Protein Grouping to determine these different proteins on the swab was determined to be Esterase D, Type 2-1, PGM or Phosphoglucomutase Type was inconclusive and the Glyoxalase 1 was also inconclusive.

Q When you say inconclusive, what does that mean?

A Sometime the band patterns, they're smearing and there's other conditions involved on the plate which don't allow us to make a definitive call as to the type and therefore we report amount as inconclusive.

Q What factors can effect whether or not you could get a definitive result in a test like that?

A At this particular time these samples will run - we were having some trouble with our initial plates in that we had what's called an ionic front on the plate and it caused problems in reading some of the bands. Normally some things which might effect the band pattern is the amount of sample that we've used. We can sometimes use too much sample. Sometimes the age of the sample if its very old we'll see a lot of build up and a lot of streaking on the plate.

Q Do you prepare your own plates or are they purchased from

A -- yes sir, everything.

Q Once you determined you were having a problem with this - you called it an ionic front?

A An ionic front, uh huh.

Q Once you determined you had this problem, what did you do?

A We investigate - excuse me, the problem for approximately a year and a half before we found a solution.

Q Does it have any impact on your being able to run definitive tests on these items?

A No sir, everything that was called that was conclusive we report it out.

Q I'll hand you the next item which is State's Exhibit No. 32 which is your Lab Item No. 3 and I'll ask you how you received that item?

A Did you want me to report on those swabs?

Q Excuse me, did I not ask you about all the rest of the --

A -- I believe I did have some more to include, yes sir.

Q In Item No. 2, I'm sorry. Did you run any other tests on the items that came from your Lab Item No. 2?

A Yes sir, there were three more swabs which were run under Lab Item No. 2 which I have not testified.

A That's correct.

Q What did you do with the second swab?

A Swab ID No. 2-2. That swab was subjected to the same type of analysis. From that we also received a Negative Acid Phosphatase test. A Negative Prostate Antigen (P30) test for seminal fluid. Microscopic examination showed no spermatazoa present. We did not detect an elevated level of amylase which could possibly indicate the presence of saliva. Preliminary testing was run for the presence of blood and it was positive. Absorption-Elution analysis showed the presence of blood group A substance activity. Absorption-Inhibition analysis showed the presence of blood group A and H substance activity. Cuttings from the swab were again subjected to Protein Analysis by electrophoresis. Esterase D, we found no activity on. It probably had already decomposed or been destroyed by the time that we did the analysis. Phosphoglucomutase, we determined it to be Type 1. Glyoxalase 1 we determined that there was no activity on that swab for that particular protein.

Q Now did you perform another test on - to a third swab that was in - that you found in your Lab Exhibit No. 2?

Microscopic examination showed that there were spermatazoa present. We did not detect an elevated level of amylase present. There was a positive preliminary chemical test for the presence of blood staining on the swab. Absorption Elution analysis showed the presence of blood group A and blood group B substance activity. Absorption Inhibition analysis showed the presence of blood group A, group B and blood group H substance activity. Protein grouping analysis by electrophoresis showed the Esterase D type was 2-1. The Phosphoglucomutase type was 1 and Glyoxalase, we saw that there was no activity on the swab.

Q Did you perform an examination of the fourth swab that you found in your Lab Item No. 2?

A Yes sir, I did.

Q What were the results of those examinations?

A That swab was labeled Item No. 2-4 and the results of the analysis were Negative Acid Phosphatase test. A Negative Prostate Antigen (P30) test for seminal fluid. Spermatazoa were identified by microscopic examination. We did not detect an elevated level of amylase on the swab. Blood was identified on the swab by confirmatory testing

B and H substance activity. Protein Grouping analysis was again conducted by electrophoresis. From that they determined the Esterase D type was inconclusive. The Phosphoglucomutase tape was Type 1 and Glyoxalse we found no activity on.

Q Okay, when you say we, did someone assist you?

A No sir, I actually performed them by myself.

Q I just wondered.

A Terminology.

Q Sort of a collective we or something like that.

A Uh huh.

Q I'll hand you - first of all going back to Exhibit 2, that entails everything that you examined in Exhibit 2?

A That's correct.

Q And you had a positive examination for spermatazoa or sperm on two of the samples?

A That's correct.

Q How did you test swabs, I think you identified them as 2-3 and 2-4, how did you test those swabs to identify spermatazoa?

A Okay, a portion of the swab was cut and it was extracted in a very weak salt water solution. That solution then

microscopically for spermatazoa and what we do is we'll take a small portion of that sediment, smear it onto a glass slide, allow that slide to air dry and then subject it to heat which will permanently fix the sample to the slide. After that the sample is then or the slide is then subjected to the differential biological staining, the Christmas Tree stain and that's to stain the different parts of the spermatazoa, the different colors. After that it's examined microscopically and we're looking for the presence of the sperm.

Q And you found it?

A That's correct.

Q And those were swabs that were taken from the vaginal area of [redacted] as indicated by your envelope?

A That's correct.

Q I'll hand you what's been marked for purposes of identification for this case as State's Exhibit No. 32 which is actually your Lab Item No. 3 and I'll ask you if you recognize that envelope?

A Yes sir.

Q And what condition was it in when you received it?

A It was sealed when I received it.

in the morning and took it back - took it back to the Crime Laboratory for analysis.

Q And when you took it back to a laboratory, what did you do?

A The envelope was opened and inside the envelope was found one cotton tip applicator envelope and it was marked Fluorescent areas L shoulder and cheek, J Warman, November 18, 1984, Wishard Memorial Hospital, 163426-F and it contained two cotton tip swabs.

Q And did you perform certain tests on those swabs?

A Yes sir, the same tests were performed on swabs labeled Lab Item No. 3 as were performed on Lab Item No. 2 swabs from the vagina.

Q And what were the results of those tests?

A We identified no seminal fluid staining and we did not detect an elevated level of amylase on the swabs to indicate the possible presence of saliva.

Q Anything else with regard to your Lab Item No. 3?

A No sir.

Q I'll hand you what's been marked for this trial as State's Exhibit No. 26 and admitted into evidence and it has your Lab Item No. 4 on it and I'll ask you in what condition

morning.

Q And what did you do with the envelope?

A The envelope was taken back to the Crime Laboratory. It was opened and found to contain one cotton tip applicator envelope which was marked Typing 163426-F, IUML, 49-84, November 19 - November 18th - excuse me, 1984, Wishard Memorial Hospital, mouth, J Warman, and it contained two cotton swabs.

Q And did you perform certain tests on those swabs?

A Yes sir, the same tests were performed on all the swabs submitted.

Q And what were the results of those tests?

A Swab 4-1 identified to me as an oral swab. We determined no seminal fluid staining was detected. An elevated level of amylase was detected which may indicate the presence of saliva on the swabs. Blood was identified as being present on the swab by means of crystal testing. Absorption Elution analysis showed the presence of Blood Group A, B and H substance activity. Absorption Inhibition analysis showed the presence of Blood Group A and H substance activity. The swabs were then subjected to electrophoresis analysis to determine the protein types.

4-2, there was no seminal fluid staining detected. An elevated level of amylase was detected to indicate the possible presence of saliva on the swab. There was a positive preliminary chemical test for the presence of blood staining. Absorption Elution analysis showed the presence of Blood Group A and H substance activity. Absorption Inhibition analysis shows the presence of Blood Group A, B and H substance activity. Protein Grouping analysis by electrophoresis showed the presence of Esterase D, Type 2-1. Phosphoglucomutase Type 1 and Glyoxalase 1, Type 2-1.

Q The procedures that you followed in your testing, ma'am, what sort of controls do you have to insure the integrity of your test?

A With the blood banking procedures we receive known standardized cells to type the serum of the individual. Those cells have been typed by the blood bank in Indianapolis. Those cells are received routinely. Now at this particular time we are receiving commercially prepared cells which are also pre-typed. With the seminal fluid identification, depending on the particular type of test known controls are always run. Acid Phosphatase we have

also against just reagents alone to prove that the reagents are not causing the contamination or any false positives in the test. There are always known positive and negative controls run with the Acid Phosphatase test with the Prostate Antigen (P30) test. With the amylase test we use liquid saliva. With the Absorption Elution and the Absorption Inhibition we have known standards received from the Serological Research Institute in California. From individuals who are secretors and known non-secretors and then for the blood protein grouping analysis we have individuals of known blood types within the laboratory. We use our own bloods as standards. They have been pre-typed and also confirmed by other laboratories and other forensic serologists. We use these known types on every plate to determine the blood types of the different items which we are examining as far as the blood protein groups.

Q Now you used these standards - it's part of your procedure, is it not, to run these tests or run these standards along with the testing that you're doing to insure the integrity of your test?

A That's correct, with every test they are always run.

several of the results indicated A substance activity.
What does that mean?

A Since - we're talking about autopsy swabs from Peggy Altes. [redacted] had been determined by her blood to be a Blood Type A. By her Lewis Blood Typing she was determined to be a secretor. From her body fluids I would expect to pick up what's called a Blood Group A substance activity from her own body fluids.

Q And did you in fact find those?

A Yes sir, on the swabs.

Q There was a statement that you made that there were H Type substance activity?

A H substance activity was found on some of the swabs. H can possibly be a precursor to the formation of Blood Group A substance and we have seen part of that from the precursor action or it could also be coming from an O secretor semen donor.

Q And why would you say it could be coming from O secretor semen donor?

A An O secretor semen donor would secrete in his seminal fluid, in his perspiration and in his saliva, H Blood Group substance activity. Since we are seeing a mixed

swabs that there are spermatazoa present which indicates that there is seminal fluid present. We have a mixture of two body fluids and we have the H substance activity there. We cannot determine if its coming from Peggy Altes vaginal fluids or if its coming from the seminal fluid from the semen donor.

Q Now there also was a statement in your testimony that there were the presence of Blood Group B, what does that indicate?

A On some of the swabs we were seeing a Blood Group B substance activity. The activity itself was acting in a very spurious and erratic nature. It was found on some of the swabs and not others and very inconsistent. It could be coming from a number of possible sources. You are dealing with a dead body in which you have decomposition and sometimes bacteria will acquire a B Blood Group substance activity which could possibly be causing it. It could also be coming from a B Blood Group semen donor or an AB Blood Group semen donor.

Q Now with regard to your testing, did you see anything that in your experience indicated to you you might have a bacteriological cause for that B activity?

is a very good characteristic of bacterial influence. Also we were seeing the activity on oral swabs where there was no identification of any seminal fluid present and it could possibly be coming from bacteria.

Q Would that be unusual to find in a body that had been dead for a period of time?

A I believe it could be possible and it has been documented in literature that this type of activity can be found.

Q And do I understand you correctly in three of the items that you examined you found sperm present, the slide that you received and two of the swabs that you received?

A That's correct. Swab 2-3 and Swab 2-4.

Q Based upon your experience in the examinations which you conducted what, if anything, can you tell us about the possible semen donor or the source of the semen sperm that would have been found in Peggy?

A Based on [redacted] blood type and based on the findings that we're seeing on Absorption Inhibition and Absorption Elution analysis and the fact that we have this B activity which is kind of unexplained, we really can't determine where it's coming from. We couldn't really eliminate a blood type of any particular type for the semen donor and

that can be determined in blood. It's also found in vaginal fluids and it's also found in seminal fluids. The swabs which were subjected to electrophoresis analysis to determine this, we were picking up Phosphoglucomutase Type 1. [redacted] is a PGM or Phosphoglucomutase Type 1. Since it is the same type as her you can make no conclusion as to the PGM type of semen donor. We did subject this to some further analysis to try and further separate out this PGM type into more types and that analysis was not conclusive as to reporting that out.

Q Now you were talking about trying to separate the PGM analysis out further. What do you mean by that?

A PGM falls into one of three types, basic types. Type 1, Type 2-1 and Type 2 and that can be further broken down into ten various types.

Q And did you not - why couldn't you break it down any further if that's a proper question?

A We did. We ran the particular testing and again we were having problems with ionic fronts on our plate and due to the migration of the band pattern, we were not able to call definitive types.

see if we could find anything foreign to the victim that we could attribute as coming from the semen donor.

Q And the results of your test showed she was - that Peggy Altes was a Phosphoglucomutase Type 1?

A Right and what we were finding on the swabs was PGM or Phosphoglucomutase Type 1 also.

Q And your testing of the sample of Jerry Watkins showed that he was Phosphoglucomutase Type 1 as well?

A That's correct.

Q Is there anything from your results that would allow you to exclude the possibility of Jerry Watkins being the semen donor?

A No sir.

Q Is it fair to say, ma'am, that the only type of person you could exclude would be females?

A That's correct, they shouldn't have seminal fluid.

BY MR. GOSSETT: I have no other questions.

The said witness testified further on CROSS EXAMINATION in response to questions propounded by Mr. Lockwood,

Q Mrs. Kohlmann. My name is Jeff Lockwood. I want to ask you several questions and I don't know much about what you do and I'm assuming maybe the jury doesn't either. Will you help me make it simple?

A Surely.

Q You know if we find it necessary, maybe we could pull this blackboard over and maybe you can illustrate some things.

A Okay.

BY MR. LOCKWOOD: Do you mind, your honor?

BY THE COURT: No.

Q I'm not sure how we ought to do this so that everybody can see but let's try it kinda this way where you have access to it. Can all the jury see. Mrs. Kohlmann, are you a doctor?

A No sir, I'm not.

Q Can private parties use your lab or just police agencies?

A No sir, it has to be a police case made of the investigation.

Q So a defense attorney couldn't ask you to run tests?

A That's correct.

Q And what organization outside your lab monitors your activities?

A Uh - we have run various proficiency type testing and basically all the training we have received has been from recognized individuals in the forensic serology community and also training by the FBI Academy.

Q Well I guess my question is, there is no outside agency that monitors your lab?

A Per se, no sir, huh uh.

Q Now you indicated that you were looking for certain things when you ran your tests and we're not very familiar with the scientific names of those.

A Uh huh.

Q So I'd like to try to make it simple for us to understand and if I misspeak, please correct me, okay?

A Uh huh.

Q Now as I understand it there are four major blood groups. Is that right?

A That's correct.

Q And those blood groups are A, B, AB and O?

A That's correct.

correct?

A That's correct.

Q You talked then about a sub-blood group called the Lewis Blood type?

A It's not a sub-blood group. It is another blood grouping system that's used to further identify the blood sample. It's called the Lewis system.

Q The Lewis System?

A Right.

Q And when you're talking about the Lewis System, you indicated that you get an A positive, B negative --

A -- the two factors --

Q -- okay, that's not B's, A's and B's?

A No, it's a completely different system. The two factors are designated Lewis and it's a small (a) and Lewis and a small (b) and they are designated either positive or negative as to whether we find the factor or don't find the factor. It is a completely separate system to the A B O Blood Typing system.

Q Okay. So as far as - and that test is to determine one thing and one thing only?

A Right.

A Right, that's correct.

Q Okay. And that's called the?

A Lewis, L e w i s.

Q L e w i s and that's for secretor?

A Secretor or non-secretor status.

Q Okay. But if it's a non-secretor, you don't get much information from a non-secretor, would you?

A That's correct.

Q And we found that [redacted] was in fact a secretor?

A That's correct.

Q And that's a plus.

A She would be Lewis B positive, that's the way it is designated or secretor, right.

Q And that doesn't have anything to do with this B positive?

A No sir, it does not.

Q And we also found or you found, I didn't find anything, that Jerry Watkins was also a secretor?

A Correct.

Q So based on that would it be fair to say that you can't tell anything from the other test that you ran that - with regard to being a secretor or not being a secretor because both the victim and the accused in this case are secretors?

A Yes, I understand now.

Q How would that work?

A Okay, if [redacted] was a non-secretor and we pick up blood group substance activity on Absorption Inhibition analysis, then we know that activity being that she is a non-secretor could not come from her and it would directly be attributed to the semen donor or donors as the case may be. Since she is a secretor we should expect to see some of her blood group substance activity and they are from her normal body fluids.

Q Okay, when you were testifying on direct examination about seminal fluid in saliva and what have you and I was thinking all the time about secretors, that's where you would pick up this blood type from, from semen or from saliva but you would also get it from the blood itself?

A Depends on the type of testing done. Absorption Inhibition analysis you're dealing - we take the extract and centrifuge it. That removes any cellular particulate matter. We would not expect to see an Absorption Inhibition, any influence from blood samples. On Absorption Elution it is possible. It's a much more sensitive test that we would pick up some from blood and it would be possible on that

are the two tests that you run on the seminal fluid?

A That's correct.

Q And if I'm - I guess what I'm getting at, if I'm a Type O blood which by the way I am, you can't exclude me from being the semen donor in this case, can you?

A That's correct.

Q But I'm a Type O and I would secrete that if I'm a secretor into my body fluid but I'd also - you'd pick it up from a sample of blood?

A I would pick up an O blood type.

Q Right, that's what I'm talking about.

A Right.

Q And you might pick up also these proteins that you've talked about?

A Uh huh, that's correct.

Q From blood, correct?

A Correct.

Q You've been at this for how long, fourteen?

A Eleven.

Q Eleven years. Okay. In violent crime --

A -- yes sir --

Q -- is it possible - is it not possible for the assailant

A Correct.
Q And perhaps breaking the skin?
A Would be possible, uh huh.
Q And bleeding into the mouth of the victim?
A Uh huh, possible.
Q And is it also possible that for one reason or another that a man's privates might be wounded or whatever might have source - you could bleed from that area into the vaginal?
A It would be possible, uh huh.
Q And we're talking about extremely small amounts of things, aren't we?
A I can't - there was no way for me to quantitate the amount that was actually there.
Q Well I know but I'm talking about just from our own personal experience, we're talking about microscopic size?
A For spermatazoa you're dealing with microscopic size entities, yes.
Q In a cc which is what about that much in a --
A -- approximately one milliliter.
Q Okay, one milliliter. Is it true that there are like seven to ten million sperm?

A -- uh huh - -

Q -- in that much fluid?

A Uh huh.

Q So I'm going to guess that they are little?

A Extremely small. One five hundredth of an inch in size.

Q Okay, now if I cut myself and you saw blood, you would know that its red and that caused from --

A Hemoglobin.

Q Hemoglobin. But you couldn't see those red blood cells, can you?

A Not visually, no.

Q Do you know how many of those are in a drop of blood?

A No sir, I do not recall offhand.

Q Is it a large amount?

A Yes, it's a very large number.

Q And when you say very large, maybe not as much as the sperm but --

A -- probably not so, right.

Q Okay, but --

A -- quite a few.

Q A bunch. Thousands maybe, hundreds of thousands, whatever?

A Uh huh.
Q And it doesn't take very much in order for you to do the test, does it?
A That's correct.
Q Okay. So if it's present even in a minute amount, there's a good possibility, you've been at this eleven years, you're going to pick it up?
A Correct.
Q Now the Lewis secretor test, the victim in this case and the defendant in this case were both secretors we've already established that?
A Uh huh.
Q Okay. And then you went further than that even and you broke these blood samples or whatever you had, you broke this down for proteins?
A Uh huh.
Q Okay. Now I don't know what all those names are and I really don't want you to repeat 'em because they confused me.
A Would an abbreviation help?
Q Well I don't think for the purpose of my question it would but if you think it would you can tell us but we all know

Q And you've categorized for your purposes six of these many proteins that you find in nature?

A These are proteins which are forensically important because they are staple and dried stains which is our usual manner of analyzing evidence.

Q And you've used for your report six of those?

A Uh huh.

Q That you're looking for?

A Uh huh.

Q Is it fair to say from reading your report and your testimony that you found no proteins inconsistent with the proteins you found in [redacted] blood?

A Okay, no proteins on where, what are we talking about. Are we talking about blood samples or swabs?

Q On anything that you tested, we can go down through it one by one if you like?

A Okay.

Q And you might feel more comfortable?

A If you are talking about all the swabs and all the blood group proteins we found were consistent with [redacted]

Q Right?

A Yes, okay.

Q And when you have swabs from her vagina and perhaps from her mouth if she was injured or whether she was or not, she's a secretor so in her saliva you would what expect to find her protein --

A -- secretor has nothing to do with the proteins. The proteins are always there in all the fluids, that has nothing to do with the secretor status, okay.

Q Okay, so its in saliva?

A Right.

Q Just cause its there?

A No, the blood group proteins would not be found in saliva. It depends on the particular protein, PGM would be found in seminal fluid, vaginal fluid and blood. Two others that we analyze for Esterase D and Glyoxalase, they are common in blood, found all the time in blood. May occasionally be found in seminal fluid and are found in vaginal fluids. That's why those particular proteins were checked.

Q Okay, so all the proteins that you found and were able to identify were consistent with those that you might expect to find from samples taken from [redacted]?

A Right, from her blood.

A That's correct.

Q Can we kind of disregard that as being not helpful in this case?

A That's correct.

Q Okay. Now I want to go down through a few of the swabs that you took. Lost my notes.

BY THE COURT: Maybe while you find them, now is about the right time for a break and I notice you're going into something else. You're excused to the jury room.

RECESS.

BY THE COURT: Please be seated.

Q Mrs. Kohlmann, just by way of review, you do these examinations at the request of a police officer?

A That's correct.

Q And you didn't do any of these tests on your own hook so to speak, you had a specific request to test these substances?

A I was - yes, I was requested to check them for presence of seminal fluid and identify the semen donor.

Q And as a forensic serologist, you confine your expertise

of thing?

A No sir, I'm not an expert in that area.

Q And one last question kind of by way of review, when you examine these materials whether its in this case or any of the other thousands that you've done, you are looking for some evidence of the donor of either the blood sample or the seminal stain or the saliva sample?

A That's correct.

Q That's what you're expecting to find or hope you can find?

A Hoping, uh huh.

BY MR. GOSSETT: Excuse me just a second, I think you'll have to speak up, the truck traffic out here sort of covers your voice and so that everyone in the jury can hear. The mike doesn't amplify your voice.

A Okay.

Q I'd like to if I could go down the report with you and I've made a little chart here and I think I explained to you during our recess, can everybody see, Column No. 1 over here, I hope it might be helpful to you to use your Lab Item No. and then sense you didn't have any idea what

Q Now I've got a column I'd like for you to tell me as we go down through these samples where you had either a preliminary finding of blood or a confirmed blood sample and then I have the major blood groups that you talked about and then I've thrown an H in here and then I have a column over here for sperm so we can tell on what swab these things may have appeared. Is that okay with you?

A Okay, uh huh.

Q And if you wouldn't mind doing it let's just go down - I want to skip Item No. 1. Now Item No. 1 is a deep vaginal slide that was taken at the autopsy and submitted to you through the property room. Is that correct?

A That's correct.

Q And you didn't do any test on that other than microscopic examination?

A That's correct.

Q And you did find spermatazoa?

A That's correct.

Q So we don't have any information from that slide regarding blood groups?

A No sir, you would not from a slide, no sir.

Q Okay. Now Lab Item No. 2 is broken down before I write

Q Okay. And Lab Item No. 2 overall is identified as swabs that were taken from the vagina of [redacted]?

A That's the labeling that was received on the envelope, that's correct.

Q And I guess two of the swabs that you tested were deep vaginal swabs and the other two were designated just vaginal swabs?

A That's correct.

Q Okay. Is there any purpose in distinguishing for our purposes here whether it is a deep vaginal swab or not?

A No sir, I have no idea why those were taken in that particular manner. I'm not use to that.

Q Okay. Do you work with Dr. Pless much?

A Yes, I know of Dr. Pless, uh huh.

Q Is this what he did?

A Yes, I believe it is.

Q Have you examined things for him before?

A Yes sir.

Q Now let's just go with Item - what you've said is Item 2-1 and maybe you can find what exhibit number that is for me?

A It's part of No. 30.

not allowed to testify. Okay, you have to tell me what the Lab No. and Exhibit No. is because you're the witness.

A Okay, fine.

Q Okay, let's go down this column now for Lab Item 2-1, State's Exhibit 30 and the first thing I want to ask you is, did you identify any blood on that swab?

A Yes sir, we did. It was confirmed.

Q Can I use a C O N F for that, confirmed. Okay, and the next thing I want to know is whether you found any sperma-tazoa on that swab?

A No sir.

Q And I'll just put none. Okay. Did you find any evidence of A Blood Group substance?

A Yes sir.

Q Did you find any evidence of B Group substance?

A Yes sir.

Q Did you find any evidence of AB?

A Finding A and finding B would be the same thing as there is no AB per se.

Q How about a major? You don't like that?

A No.

Q What would you like --

A Correct.

Q Okay, well we'll just mark a squiggly line through that --

A -- thank you --

Q -- and we won't have any of that. Okay, did you find any O blood group substance?

A We don't find O per se, we find the presence of H.

Q Alright, so H would be yes?

A Yes, correct.

Q Okay. Let's talk about H again. H is a precursor of A?

A That's correct.

Q And it is also a precursor of O?

A Correct.

Q So if you have H you can't tell whether it may be coming from A or O?

A That's correct.

Q But you've got a positive for A blood group substances on this swab and you don't have one for O, is that correct?

A You would not get the indication for the A blood group substance. The A - excuse me, let me correct that. For the O blood group substance you are detecting the presence of H activity. From an O individual who is a secretor they only secrete H substance and A or B individually

A Could be.
Q But it could also be from the A secretor?
A Correct.
Q So that's not conclusive at least as to Swab 2-1?
A Right.
Q Okay, now let's go to Swab 2-2 and that's State's Exhibit what?
A Also, again State's Exhibit No. 30 because there are four swabs contained within State's Exhibit 30.
Q That's the second part of State's Exhibit 30 and what were your findings with regard to whether blood was on that swab?
A Positive preliminary.
Q Okay, can we just put a preliminary?
A Uh huh.
Q What does that mean?
A It could indicate that there is blood staining present. The blood staining that appeared to be there was very weak and did not come up for the crystal test to confirm it was blood.
Q Okay. But it is an indication that blood might be there?
A Correct.

A Blood group A substance activity.

Q Blood group A substance activity. B?

A We were not finding B blood group substance activity.

Q And was H found on that?

A Yes, by one of the methods, it was.

Q And that's no but as I understand it those two are synonymous. They are not synonymous, are they?

A Correct, no.

BY THE COURT: I'm sorry, I couldn't hear what you said, ma'am.

A No sir, it's not correct, they are not synonymous. H blood group substance is different from O blood type.

Q Okay. Now I'm going to put down 2-3 and that's your Lab Item 2-3. Is this still Exhibit 30?

A Yes, it is 30.

Q Let's just use a little ditto mark. Oh, I forgot to ask you, was there sperm found on Lab Item 2-2?

A No sir.

Q Now we're at 2-3, State's Exhibit 30, was blood found on that swab?

A Positive preliminary chemical test for blood.

Q That's a preliminary test, it was positive?

Q Did you see any evidence of B blood group activity?
A Yes sir, we did.
Q No O, yes on the H, is that correct?
A Yes, by one of the methods, yes, we detected the H.
Q Did you find sperm on that?
A Yes sir, we did.
Q Are we ready now for Swab 2-4?
A Uh huh, yes sir.
Q And is that still State's --
A -- State's Exhibit 30.
Q Did you find blood on that swab?
A Blood was identified on the swab.
Q Is that a confirmation?
A Yes sir, it is.
Q Did you see A blood group activity on that swab?
A Yes sir, we did.
Q Did you see B blood group activity?
A By one of the methods we were seeing B blood group substance activity and also the H.
Q Okay.

BY MR. GOSSETT: Objection, your honor, she didn't say anything about O. She

A No sir.

Q Can I put a no there?

A It has no bearing really.

Q Should I mark that column --

BY THE COURT: -- excuse me, just a minute, what's your objection?

BY MR. GOSSETT: He marked an O on the exhibit. She never said anything about O period. She only said H.

BY MR. LOCKWOOD: I thought this was okay but if you want me to --

A -- scratch it out like the AB.

Q Do you want me to erase these too?

BY THE COURT: It's not a matter of what he wants. Just ask her whether they're always present, I think we can clear it up.

Q Would you prefer that I eliminate this column?

A Yes, we're detecting the presence of H substance.

BY MR. LOCKWOOD: Could I do that

BY THE COURT: Fine.

Q Okay, are we through now with 2-4, no, we haven't asked you yet whether you found sperm on that?

A Spermatazoa were identified on 2-4.

Q Now the next Lab Item that you examined were swabs that were submitted to you and purportedly came from [redacted] shoulder and cheek. Is that correct?

A That's correct.

Q And is there any need to put anything down concerning the tests of 3?

A We found no indication of seminal fluid or elevated level amylase to indicate saliva so we couldn't identify any body fluid substance present on those swabs.

Q And there wouldn't have been any point to test them for blood, would there?

A No sir, they visually did not appear blood stained.

Q So I'm going to leave Item 3 off of here. Okay, now we go to Item 4. Would you testify, please, what those - what Item 4 is?

A Item 4, State's Exhibit No. 26, were two swabs obtained according to the envelope from the mouth.

Q From [redacted] mouth?

Q -- and 4-2?
A Correct.
Q What exhibit number is --
A -- State's Exhibit 26.
Q 26. Okay, did you find any evidence of blood on Swab 4-1?
A Blood was confirmed on Swab 4-1.
Q Now that's blood in [redacted] mouth?
A Correct.
Q Did you find any A blood activity?
A Yes sir, we did.
Q Did you find B group activity?
A By one of the analysis we were detecting the presence of B blood group substance activity, yes.
Q So is that yes?
A Yes.
Q Did you find any H activity?
A Yes sir, we did.
Q And there was no sperm found, is that correct?
A That's correct.
Q Now the last Lab Item I think that you examined would be --
A -- 4-2. State's Exhibit 26.

Court and Jury what a positive preliminary test is again, please?

A There's two different types of tests that are run. A positive preliminary chemical test is a much more sensitive test. It is chemical in nature. We're trying to see if we are picking up the presence of blood. Other substances could cause a positive preliminary chemical test. When the staining --

Q -- excuse me, what kind of substances?

A For instance fresh vegetable or plant material can oftentime cause it. Certain chemicals can cause a preliminary chemical reaction in it. Copper nickel salts can sometimes cause a false positive reaction.

Q Is vegetation and the nickel salt normally found in the mouth?

A Not normally, sir.

Q How about in the vaginal area?

A No sir.

Q Okay. So you get a positive preliminary test for blood and then you want to be sure if you can and you go ahead and try and confirm it?

A Try and confirm it by means of crystal testing which

the presence of crystal testing.

Q But in the manner, I'm sorry, in the ones that you weren't able to confirm. It doesn't mean that it wasn't blood on the swab, does it?

A That's correct, it could be blood.

Q Okay. And more likely to be blood than it would be - what did you say, vegetation?

A It could be blood, it could be something else.

Q Alright. On State's Exhibit 26, your Lab Item 4-2, did you find A blood group activity?

A Yes sir, we did.

Q And on that swab, did you find evidence of B blood group activity?

A One of the tests showed the presence of B blood group substance activity.

Q And did you find H?

A Yes sir, we did.

Q And did you find any sperm?

A No sir.

Q Okay, thank you. Is that chart accurate - accurately portray what it purports to protray with regard to your laboratory findings?

a test on materials from Peggy's vagina?

A Uh huh.

Q And you mentioned in your direct testimony that this might be bacteria --

A -- yes sir --

Q -- causing B?

A Yes sir.

Q Did you do any cultures?

A No sir, we do not do cultures in our laboratory.

Q You don't do cultures in your laboratory?

A No sir.

Q Did you do any back typing tests?

A No sir, we do not.

Q You didn't test any of these samples for either culture, for bacteria or back typing?

A No sir, we would no tests like that available in our laboratory.

Q Now have you ever personally had a situation where bacteria mimicked a blood group activity?

A Not myself personally, there was one other serologist in the laboratory who had this particular activity possibly.

Q Only one?

A In our laboratory, yes sir.

Q Now let me see if I can ask this correctly. You said on direct examination that this could be coming from bacteria, this B group activity --

A -- uh huh -

Q -- you said it was inconsistent but as we've gone down through the swabs, you noted it on all but one?

A Okay.

Q Is that correct?

A That's correct.

Q Okay. And if its possible that this is bacteria although you've only known of one other case where that's happened, isn't it also possible that a B blood type donor deposited that blood stain --

A -- that's correct --

Q -- or seminal fluid?

A We could not eliminate that, no sir.

Q You couldn't eliminate it?

A No sir, we could not.

Q And if someone had relations with [redacted], left a sample of their blood or possibly seminal fluid in her or she bit that person and left a sample of their blood

blood group B substance activity from seminal fluid from a secretor.

Q From a secretor.

A And Absorption Elution testing we were picking up the B, then it could be coming from blood or it could be coming from seminal fluid of either a secretor or a non-secretor.

Q Mr. Gossett wanted you to say and you did testify that you could not exclude Jerry Watkins on the basis of your tests?

A That's correct, sir.

Q It's not your experience in courtrooms that we convict people on the basis of what we can exclude, do we?

A I don't know, sir.

Q You don't?

A Repeat the question again.

Q Is it your experience in testifying with our criminal justice system that you convict people on the basis of what you cannot exclude?

A It depends on what you're trying to prove.

Q Prove this. This is no proof that Jerry Watkins --

A -- no sir --

Q -- it isn't, is it?

semen donor. I could not eliminate him or any other person of any blood type as being the semen donor.

Q But you can say this, if this is not bacteria, it's not Jerry Watkins either, is it?

A That is correct. If that is not bacterial activity, that is not Jerry Watkins.

Q And it's not [redacted]?

A That's correct.

Q Mrs. Kohlmann, do you ever check instruments for blood stains like a knife?

A Yes sir.

Q How would you go about doing that?

A First of all we would examine it visually for the presence of blood staining. Then we would look at it, usually depending on how much is on there or examine it under a high magnification light source, high intensity light source, then we would go ahead and run preliminary chemical tests, the same thing that we would run on the vaginal swabs and the other swabs. If there is enough blood sampling on there, we would run confirmatory tests for the presence of the blood staining. After that we would go ahead and run what's called a precipitant test to

blood type, the major blood type and then after that if there is enough blood staining left we would determine the protein, the various protein factions by electrophoresis analysis.

Q You could run all these tests off of samples that you might take from a knife?

A That's correct.

Q Is it uncommon, Mrs. Kohlmann, to look at a knife visually and see no evidence of blood with the naked eye but later be able to develop that there was in fact blood on that knife?

A Sometimes we can find it in places where you visually will not see it. Sometimes in the inside of the handle, underneath of edges of the handles, sometimes in the groove. People don't often look at the groove. Sometimes in microscopically we can see it in the letters which are --

Q -- I'm sorry, in what?

A In the letters which are forged into the blade which is identification of the manufacturer's name.

Q And what grooves are you talking about?

A The grooves that you'd use sometimes on a pocket knife to open the pocket knife, there is a groove in the blade

we will check the entire knife.

Q And if there was fingerprint analysis, you could check the entire knife after that was completed?

A It's possible. Sometimes we would reserve our areas that we would check for testing if we saw any - what appeared to be latent fingerprints on the item, reserving those areas.

Q It doesn't matter whether the blood is fresh or dried?

A No sir.

Q You could still pick up evidence of that?

A Yes sir.

Q Did anybody ask you to examine any knife for blood in this case?

A No sir.

BY MR. LOCKWOOD: Mrs. Kohlmann, thank you for putting up with me. I don't have any further questions.

BY THE COURT: Any redirect?

BY MR. GOSSETT: Yes sir.

Prosecuting Attorney, 18th Judicial Circuit, State of Indiana.

Q Now, Mrs. Kohlmann, we've got a couple of columns here with lines in it, can I change the headings on those columns and ask you a few questions in conjunction with thi graft so I at least understand a little better what we talked about. My understanding is that your H substance activity could be attributed to O - Type O blood, is that correct?

A That's possible, it can be.

Q Now on the first Lab No. 1, you said on cross examination that you found B substance activity, what type of test were you using on Swab 2-1 by your numbers that indicated B activity?

A We were using a test called Absorption Inhibition.

Q So it was Absorption Inhibition?

A Uh huh.

Q Show that as an ABS.I, I don't claim to be able to draw on a blackboard very well but would that be fair to say that, is that designation for that test?

A Yes sir.

Q And do you also find B by using your Absorption Elution

A Absorption Inhibition is a means of taking a extract of a sample, putting it with a diluted antiserum which we'll check for the A and the B properties and putting it with a C extract called Lectin H which checks for the H substance activity. What we're looking for is the vaginal fluid or seminal fluid to pull out the antibodies present in the antiserum and lower the amount that is present. When we subject that later on to red blood cells of known types, we look for these red blood cells to clump or group together and we rate that anywhere from no clumping to plus four rating. By looking at this rating we are trying to see where we are losing this activity, in other words, where is there an indication that we have either vaginal fluid or seminal fluid pulling out the antibody activity present in the antiserum that we have applied to the sample.

Q Now what is - that was Absorption Inhibition?

A Uh huh.

Q What is your test or how is your test conducted for Absorption Elution?

A Absorption Elution is a much more sensitive test. It is run by taking threads, dipping them into the extract and

cell and the antibodies to agglutinate or stick together. After a procedure in which any antiserum that has not been bound is washed away. They are subjected to known red blood cells after they have been incubated. The incubation will break up that initial bond that has been established between the antigen and the antibody. We put in known red blood cells and try and detect where we had this anitibody that was bound originally. With an A blood stain or an A secretion stain we would expect to see A activity and we might see the H activity also.

Q What about B activity?

A If you were a person of blood type B we would expect to see the B activity and also sometimes the H activity.

Q Now you say the Absorption Elution test is a much more sensitive test?

A Yes, it's a much more sensitive test.

Q And why is that?

A Just the nature of it.

Q Now with regard to Swab No. 1, what factors did you identify by Absorption Inhibition?

A We were determining the presence of AB and H.

Q A B and H factors?

Absorption Inhibition, is that correct?

A Uh huh.

Q Now did you also perform the Absorption Elution test?

A Uh huh.

Q On this swab?

A We were showing the presence of A and H.

Q So the more sensitive test showed A and H?

A Uh huh.

Q Then on your Swab No. 2, did you perform both those tests again, is that correct?

A Swab 2-2?

Q 2-2?

A Correct.

Q And your Absorption Inhibition test showed what?

A A and H.

Q And your Absorption Elution test showed what?

A A.

Q Then on your Swab 2-3 which you tested, what did you find through the Absorption Inhibition test?

A A B and H.

Q And with the Absorption Elution test which you said is more sensitive, what did you find?

A A B an H.

Q And with the Absorption Elution test, what substance activity did you find?

A A.

Q So with the more sensitive test, in only one instance of those samples did you find B, is that correct?

A That's correct.

Q Now with regard to Swab No. 4-1 with your test for Absorption Inhibition, what did you find?

A A and H.

Q This time on the Absorption Elution, what did you find?

A A B and H.

Q To what do you attribute that, ma'am?

A To what do I attribute what, I don't understand the question.

Q The loss of the factor B from one column to the other?

A It's possibly that it's not in a concentration high enough for us to detect by Absorption Inhibition but we are detecting it by Absorption Elution in sporadic activity.

Q Do those results indicate to you sporadic activity as far as the B factor?

A They do to me, sir, from swab to swab.

Q Now with regard to Swab No. 4-2, what was your Absorption Inhibition results?

A A B and H.

Q And with regard to your Absorption Elution analysis of Swab No. 4-2, what did you come up with?

A A and H.

Q Just so we put it on the chart, you weren't asked about your Lab Item No. 1 being the slide, what the State's Exhibit No. on that?

A 27.

Q 27. And what you made of that was a microscopic examination with Christmas Tree staining and you found a sperm, is that correct?

A That's correct.

Q What - going back to a couple of questions, you made no cultures, is that correct?

A No sir, we don't make cultures in our laboratory.

Q And what's back typing?

A I don't know, sir.

Q It's not anything that you're familiar in the area of --

A -- no sir, I imagine it's a form of bacterial typing or bacterial analysis of some kind. I do not know.

Q -- or something that is accepted in the science?

A No sir.

BY MR. LOCKWOOD: I'm going to object to that question as being leading and it's calling for a conclusion on the part of this witness.

BY THE COURT: Sustained.

Q Now you said that bacteria can mimick activity more - activity of bacteria, I believe the question was, could mimick - could mimick results or show the results of a B factor, B substance activity, is that correct?

A That's correct.

Q You were asked, first of all, do you run most of your examinations on samples that have come from live people or samples that have come from dead people?

A Most of the analysis that have been run with this particular type of analysis has been run on living rape victims.

Q So not very many of your tests have been run on a situation such as the body we had with [redacted] where she was already dead?

A That's correct.

come up?

A We were questioning that as being a possible source of our activity, that's correct, sir.

Q And did you review the literature on the subject of bacterial mimicry?

A Yes.

Q In serology?

A Yes sir, I did.

Q And have you read articles that show that it is something that does occur?

A It is reported in the literature that it can occur and it can act like a B blood group substance or it can also give you false A blood group substance activity.

Q Do you believe based upon your study and your investigation of this case that you were getting a false B positive blood group activity result?

BY MR. LOCKWOOD: Objection, leading.

BY THE COURT: Sustained.

Q What is your opinion about the results that you received regarding B blood group results in your test?

A They could be coming from bacterial contamination caused

allow you to exclude the possibility of Jerry Watkins being the semen donor?

A That's correct.

Q Or any other male for that matter, is that correct?

A That's correct.

BY MR. GOSSETT: No other questions.

The said witness testified further on RECROSS EXAMINATION in response to questions propounded by Mr. Lockwood, Attorney for Defendant.

ReCross
Carol
Kohlmann

Q Mrs. Kohlmann, how many of these kinds of blood tests has your lab run in the last three years?

BY MR. GOSSETT: Excuse me, are you talking about on bodies or living people?

BY MR. LOCKWOOD: This kind of test.

A I might estimate approximately twenty or twenty-five times.

Q Okay. And you've only done twenty-five of these tests in the last three years?

A Not myself personally, no, that's all the serologists in

with identity. It is not a very routine test.

Q Okay, so you're not asked on a regular basis to do tests like this?

A No sir, no sir, it is a special test.

Q And you were called to testify here by the State of Indiana, weren't you?

A That's correct, sir.

Q We didn't subpoena you. One other question I have. According to the chart there or the addition to the chart, it would appear that under the Absorption Elution test which you've described as more sensitive that the presence of H is also inconsistent?

A That's true.

BY MR. LOCKWOOD: No further questions.

BY MR. GOSSETT: No questions.

BY THE COURT: Step down.

WITNESS EXCUSED.

BY THE COURT: Recess for lunch then at this point. Remember that you are