

THE COURT: Are you all ready to continue?

MS. MOHLER: Yes, Your Honor.

THE COURT: Do you have another witness ready?

MR. REVERCOMB: Yes, the State would call
Sergeant Fred Zain.

Thereupon came SERGEANT FRED ZAIN,
who was called as a witness on behalf of the State
of West Virginia, was sworn according to law, was
examined and testified as follows:

DIRECT EXAMINATION

BY MR. REVERCOMB:

Q. Please, state your name.

A. Fred Salem Zain.

Q. And where are you employed?

A. Member of the Department of Public Safety
stationed at the Criminal Identification Bureau in
South Charleston, West Virginia.

Q. Where do you live, Fred?

A. I live in Hurricane, West Virginia.

Q. What are your job duties?

A. I'm assigned to a particular section
in the identification bureau, which I'm in charge
of the identification and examination of evidence

submitted for blood, body fluid and hair examinations.

Q Tell us briefly your educational background and qualifications.

A I have a Bachelor of Science degree from West Virginia State College. I've got an Associate degree in police science from Marshall University. I also have a Master's degree in biological sciences from Marshall University. I've had over ten years experience in the particular field of forensic science. Previous to my employed with the Department of Public Safety, I was employed with the Department of Natural Resources as a chemist for three years. I'm in charge of the training and supervision of other people employed in the identification unit at the bureau. I've given lectures and seminars in the field of forensic serology, as well as attended seminars and other schools in the particular field around the country.

I'm a member of the Southern Association of Forensic Scientists. I'm a member of the International Society of Haemogenetics. I'm a member of the International Society of Electrophoresis and a member of the Canadian Society for Forensic Scientists.

Q Have you testified in circuit court before?

A Yes, sir. I've testified in approximately 42 of the 55 counties in the State of West Virginia, as well as many times in this particular court.

Q Have you been qualified as an expert in the field of forensic serology before?

A Yes, I have.

MR. REVERCOMB: Your Honor, I would offer the witness as an expert in forensic serology.

THE COURT: All right. He may be considered as such.

CONTINUED DIRECT EXAMINATION

BY MR. REVERCOMB:

Q First of all, Sergeant Zain, would you explain the difference between what you do as a forensic pathologist and a general pathologist?

A Primarily the basic definition of forensic serologist--Again in clinical duties, you primarily deal with whole blood, whole specimens, from individuals. In forensics you primarily deal with evidence or items submitted in crimes that have secretion staining on them. In other words, obtaining an ABO blood type from a stain, there are different methods and techniques to be used than obtaining and ABO blood

type from a couple drops of blood drawn by the American Red Cross or in the hospital.

Q. Pretty much you take the evidence as you find it?

A. That's correct.

Q. I want to recall your attention to February of 1986 and ask you if you had occasion to receive articles from Detective Randy West from the Kanawha County Sheriff's Department connected with a sexual assault of one Sissy Ward?

A. I received various items at the Criminal Identification Bureau from Detective West on February 20, 1986.

Q. And you received those in person from Detective West?

A. Yes, I did.

Q. First of all, I am handing you what has been marked for identification purposes as State's Exhibits 11 through 11F. I think there are seven different items there. Do you recognize those exhibits?

A. Yes, sir. When items are submitted to the bureau, to my particular section, and I would be receiving particular evidence, the items submitted are

marked with a particular case number and the initials of the person analyzing that particular evidence. And in this particular case, on the outside of one envelope, there is a number 8675 with my initials, FSZ. This particular envelope has a known blood specimen and it's also marked in the same manner. The remaining number of envelopes here also have the same case number and my initials on them. These particular envelopes that were submitted are the sex crime kit, which was evidence collected at the time of examination by the examining physician.

Q. Once again, who did you receive those from?

A. I received the kit from Detective West.

Q. And after you were through examining those, who did you give them back to?

A. The items were returned to Detective West.

Q. Where were they kept while you had them?

A. All evidence that is submitted remains in the sole care and custody of each individual analyst until the time it's returned to the investigating officer.

MR. REVERCOMB: Your Honor, I would move State's Exhibits 11, 11A, 11B, 11C, 11D, 11E and 11F into evidence.

THE COURT: Any objection.

MR. BARNETTE: One moment.

(Brief pause)

MR. BARNETTE: Through E?

MR. REVERCOMB: Yes.

MR. BARNETTE: No objection.

THE COURT: All right. They will be admitted.

(WHEREUPON, State's Exhibits 11 through 11E, the envelopes, were admitted into evidence at this time.)

CONTINUED DIRECT EXAMINATION

BY MR. REVERCOMB:

Q. I now hand you an exhibit which is a bag marked for identification purpose as State's Exhibit 9A. And in it are four items which have been marked State's Exhibits 6 through 9, I believe, and ask you to examine those and identify them.

A. Yes, sir. These are the items that were submitted as being the clothing of Mrs. Ward. Also, there again, for explanation on the inside of, say, the pair of jeans here there is the same case

number and my initials. For identification purposes, the items submitted were the pair of jeans, top, bra and a pair of panties.

Q And you recognize them because they have your initials on them?

A Yes, sir. You can see them a little bit better on the white background here.

Q Who did you receive these articles from?

A These items were also received from Detective West and remained in my sole care and custody through the time of the analysis until I returned them to Detective West.

MR. REVERCOMB: Your Honor, I would offer these exhibits into evidence, and that would be State's Exhibits 6, 7, 8, 9 and 9A, which is the bag.

THE COURT: Any objection?

MR. BARNETTE: No objection.

(Whereupon, State's Exhibits 6, 7, 8, 9 and 9A were admitted into evidence at this time.)

CONTINUED DIRECT EXAMINATION

BY MR. REVERCOMB:

Q I now hand you what has been marked for

identification purposes as State's Exhibit 14A, which is a bag, which contains these following exhibits: State's No. 13, No. 12 and No. 14 and ask you to examine those and ask you if you can identify those exhibits?

A. These items were contained in this particular bag, which is marked as having these items in it. They also have the case number and initials on them.

Q. They have your initials on them?

A. Yes, and are in pretty much the same condition in which I returned them to Detective West.

Q. And you received these from Detective West?

A. Yes, I did.

MR. REVERCOMB: Your Honor, I would ask that these exhibits be admitted into evidence. That would be State's Exhibit 14, State's Exhibit 12, 13 and 14A.

THE COURT: Any objection?

MR. BARNETTE: No objection, Your Honor.

THE COURT: They will be admitted.

MR. REVERCOMB: Thank you, Judge.

(Whereupon, State's Exhibits 12, 13, 14 and 14A were admitted into evidence at this time.)

CONTINUED DIRECT EXAMINATION

BY MR. REVERCOMB:

Q I am now handing you what has been marked for identification purposes as State's Exhibit 29A and State's Exhibit 29. Can you identify those for us?

A Yes, sir. This also is one of the other items that was submitted for examination by Detective West at the same time as these other items. It's also marked with my initials and case number. It remained in my care and custody through the analysis until I returned them to Detective West.

MR. REVERCOMB: Your Honor, I would ask that these be moved into evidence.

THE COURT: Any objection?

MR. BARNETTE: Their numbers?

MR. REVERCOMB: No. 29 and 29A.

MR. BARNETTE: No objection.

THE COURT: All right. They will be admitted.

(Whereupon, State's Exhibits 29 and 29A
were admitted into evidence at this time.)

CONTINUED DIRECT EXAMINATION

BY MR. REVERCOMB:

Q I'm now handing you what has been marked
for identification purposes as State's Exhibit 18A,
which is a bag, that contains State's Exhibit 17 and
State's Exhibit 18 for identification purposes.

A These were two pillowcases that were
submitted for examination by Detective West at the same
time. They also remained in my sole care and custody
until I returned them to Detective West along with the
other evidence.

MR. REVERCOMB: Your Honor, the State would offer
State's Exhibit 17, 18 and 18A into evidence.

MR. BARNETTE: No objection.

THE COURT: All right. They will be admitted.

(Whereupon, State's Exhibits 17, 18 and
18A were admitted into evidence at this
time.)

CONTINUED DIRECT EXAMINATION

BY MR. REVERCOMB:

Q Sergeant Zain, I now hand you what has

been marked as State's Exhibit 16A for identification, which contains State's Exhibits marked for identification purposes as State's Exhibit 15 and State's Exhibit 16.

A. These are a variety of sheets and a towel that was submitted for examination at the time of the other items previously mentioned by Detective West. They also remained in my sole care and custody until I returned them to Detective West.

MR. REVERCOMB: Your Honor, the State would offer these exhibits into evidence, 16A, 15 and 16.

MR. BARNETTE: No objection.

THE COURT: All right.

(Whereupon, State's Exhibits 15, 16 and 16A were admitted into evidence at this time.)

CONTINUED DIRECT EXAMINATION

BY MR. REVERCOMB:

Q. Sergeant Zain, I now hand you what has been marked for identification purposes as State's Exhibit 21A and State's Exhibit 21.

A. These two items were also submitted at the same time and remained in my care and custody until I returned them to Detective West with the other items. This is the bed pad and the bag which it was enclosed in.

Q. Again, you recognize that by your initials?

A. Yes, sir.

MR. REVERCOMB: Your Honor, I would offer this into evidence - State's Exhibit 21A and State's Exhibit 21.

MR. BARNETTE: No objection.

THE COURT: All right.

(Whereupon, State's Exhibits 21 and 21A were admitted into evidence at this time.)

CONTINUED DIRECT EXAMINATION

BY MR. REVERCOMB:

Q. Sergeant Zain, I now hand you what has been marked for identification as State's Exhibit 20A, which contained the following exhibits: State's Exhibit 19 and State's Exhibit 20.

A. Yes, sir. These were also items submitted at the same time as the other items previously mentioned by Detective West. They remained in my sole care and custody until the analysis was completed and I returned them to Detective West along with the other items. It consisted of a T-shirt and a white shirt.

MR. REVERCOMB: Your Honor, the State would offer

Exhibits No. 19, 20 and 20A into evidence.

MR. BARNETTE: No objection.

THE COURT: All right.

(Whereupon, State's Exhibits 19, 20 and 20A
were admitted into evidence at this time.)

CONTINUED DIRECT EXAMINATION

BY MR. REVERCOMB:

Q I hand you now what has been marked as
State's Exhibit 27A and inside State's Exhibit 27A,
State's Exhibit 27, which has been marked for purposes
of identification and ask you to examine those and,
if you can, identify them.

A Yes, sir. That's also the jacket
which was submitted along with the other items,
remained in my care and custody and returned to
Detective West with the other items previously
mentioned. It is also marked with the case number
and my initials.

Q And it's identified as the defendant's
clothing?

A It was marked as coming from Mr. Davis.

Q I now hand you what has been marked for
purposes of identification as State's Exhibit 26A

and inside, State's Exhibit No. 26, I believe.

A. This pair of bluejeans was also submitted at the same time as the other items and they remained in my sole care and custody until I returned them to Detective West along with the other evidence. It is also marked with my case number and initials.

Q. This is supposedly the defendant's clothing?

A. They were marked as coming from Mr. Davis, that's correct.

MR. REVERCOMB: Your Honor, I don't know if I moved the shirt into evidence. The State would offer State's Exhibits 26, 26A, 27 and 27A into evidence.

MR. BARNETTE: No objection.

THE COURT: All right.

(Whereupon, State's Exhibits 26, 26A, 27 and 27A were admitted into evidence at this time.)

CONTINUED DIRECT EXAMINATION

BY MR. REVERCOMB:

Q. I now hand you what has been marked for purposes of identification as a bag marked as Exhibit 28A and inside some underwear marked as State's Exhibit 28 for identification.

A. Yes, sir. These were also submitted for examination by Detective West and remained in my sole care and custody until I returned them to Detective West. They are also marked with the case number and initials. They're marked as being Mr. Davis' briefs.

MR. REVERCOMB: Your Honor, the State would offer 28 and 28A into evidence.

MR. BARNETTE: No objection.

THE COURT: All right.

(Whereupon, State's Exhibits 28 and 28A

were admitted into evidence at this time.)

CONTINUED DIRECT EXAMINATION

BY MR. REVERCOMB:

Q. Sergeant Zain, I now hand you what has been marked as State's Exhibit 30 for identification.

A. This particular item was a known blood specimen of Mr. Davis, which I received from the hospital technician and Detective West on a different time and date. The case number that was given to this particular evidence was S-86-340. And the number is on the outside of the container, as well as on the vile of Mr. Davis' blood.

Q. Do your initials appear on the outside and

on the vile, too?

A. That's correct.

Q. Were you present when that was drawn?

A. Yes, I was.

Q. Where was that drawn?

A. St. Francis Emergency Room.

Q. Do you recall the date?

A. I received this on 7/14/86. And I also returned the blood specimen when I was through with the analysis to Detective West.

MR. REVERCOMB: Your Honor, the State would offer State's Exhibit 30.

THE COURT: Any objection?

MR. BARNETTE: No.

THE COURT: All right.

(Whereupon, State's Exhibit No. 30 was admitted into evidence at this time.)

CONTINUED DIRECT EXAMINATION

BY MR. REVERCOMB:

Q. Sergeant Zain, subsequent to -- Strike that. What purpose were these items submitted to you?

A. They are primarily submitted to see if any of the items had any secretions that were seminal fluid or

blood. All of the items were examined and the reports were issued on what my findings were.

Q Did you find seminal fluid on any of these items?

A On the items which I previously identified with the case number S-86-75. There was seminal fluid identified on the vaginal swabs, which were contained in the sex crime kit. That is this envelope here (indicating). Seminal fluid was also found on the panties of Mrs. Ward. That's State's Exhibit 8, I believe. Also, I found it on the T-shirt, which I had identified earlier as coming from Mr. Davis or his residence.

Q State's Exhibit 19?

A That's correct. And also the underwear, briefs, of Mr. Davis.

Q I believe that's State's Exhibit 28?

A That's correct. I also identified seminal fluid on the, what I described as a purple sheet, bed sheet.

Q Are you referring to this exhibit (indicating)?

A That's correct. And the bed pad.

Q That would be No. 12, and by the bed pad, do you mean this (indicating), Sergeant Zain?

A. That's correct.

Q. State's Exhibit 21.

A. There was no other seminal fluid identified on the remaining items, which I have previously identified.

Q. Sergeant Zain, can you look and see what the number is on the exhibits with the vaginal swabs?

A. The vaginal swabs are State's Exhibit No. 11.

Q. Can you briefly describe the tests you run to analyze for seminal fluid?

A. Primarily there is a preliminary test which is used to identify what is called acid phosphatase. Because acid phosphatase is not a specific chemical constituent of seminal fluid, it is one that can be found in other body fluids, such as blood, in the tissues and other body fluids. That is a preliminary test. When the testing is positive, then another test is performed by the name of P-30. This particular test is specific for seminal fluid and will not react or not give any other reaction except with the presence of seminal fluid. These tests are accepted widely in the scientific community and have been utilized for quite a few years in the serology section at the bureau.

These tests were performed and the results were positive on the items which I have before me.

Q As a result of those tests for seminal fluid, would you be able to type that seminal fluid?

A Depending on the condition and the age and the manner of the material which a stain is deposited on, you can obtain blood typings from secretions. One of the blood typings which we tried to obtain is an ABO blood typing. The second most prevalent blood typing system which we try to obtain is Phosphoglucomutase, PGM. PGM is an enzyme blood type which every individual has and it is important and of value in forensic work. The blood typings were analyzed on all of the items I have before me.

Q What were the results of that?

A On the vaginal swabs and the panties there was a mixture of blood and seminal fluid. The blood typings which were identifiable was, one, a blood type A and a blood type O. And the PGM blood type was a 2+1+. The seminal fluid alone, which was identified on the T-shirt, the purple sheet and the bed pad, contained an ABO blood type A and O. I was unable to obtain a PGM blood type from the stains on those items. That can be due primarily by either an insufficient

quantity of semen or the possibility of bacterial degradation of the semen where I would be unable to obtain the PGM blood type. These blood typings were then compared with the known blood specimen of Mrs. Ward, whose ABO blood type was O and whose PGM blood type was a 2+1+.

We also identify from known blood specimens whether an individual is a secreter or non-secreter. Simply, the explanation of that is that 80 percent of the population are classified as secreters and 20 percent are classified as non-secreters. What that means is 80 percent of the people in this room, for example, we would be able to identify your ABO blood type from your body fluids. Twenty percent of the people in this room you would probably not be able to identify their blood types from, say, their saliva seminal fluid, or vaginal fluid.

Q. Sergeant Zain, you have that you found seminal stains or were able to get seminal fluid off of the defendant's underwear. Did you type that, too?

A. Yes, I did. The blood typings off of the briefs was an A and an O and no PGM blood type was identified.

Q. You also testified that sometime subsequent to this you got a sample of the defendant's known blood?

A. That's correct.

Q. Were you able to type that?

A. Yes, sir. The known blood specimen of Mr. Davis was an ABO type O and a PGM type 2+1+. And he also is classified as a seceter individual.

Q. So that's the same blood type as the victim?

A. As far as the ABO blood typing, PGM blood typing and the secreter status, the blood types are the same.

Q. As a result of your tests and also your analysis of both the victim and the defendant's known blood typings, were you able to form a conclusion?

A. Yes, sir. On the original submission of items of S8675 I concluded, due to the results which I had obtained and having the known blood specimen of Mrs. Ward, that, one, the ABO genetic marker identified from the vaginal swabs, panties, T-shirt, the briefs, the purple sheet and the bed pad was not consistent with the ABO genetic marker of Mrs. Ward.

During the analysis of these items and the stains which I identified, in particular, the stains which were

just seminal fluid, there were not a mixture of seminal fluid or vaginal fluid or any other both secretions.

There was an indication of an A blood type. When I have an indication of any blood types, they are reported out. Simply from the standpoint -- When I explained earlier about forensic evidence, when you have stained materials, not knowing how the stain has been deposited, what type of conditions it has been subjected to and the various other factors -- In other words, the evidence which is submitted to the bureau is not in a sterile condition when we receive it. You can have different factors that can cause contamination in stains. One of the most prevalent factors that we encounter are bacterial contamination. Bacterial contamination can give you what is called false positives and give you blood types separate and aside from what you're truly identifying. And in this particular case, because of the type of evidence, and primarily because of the controls which were used from the evidence itself, I was identifying blood type A, which was also being identified from the controls.

Q. Sergeant Zain, can you explain for the benefit of the jury what you mean by the "controls"?

A. For an example, say on the T-shirt you had a variety of stains, say like the staining here and in this area, and in a controlled area, you use a control from a piece of evidence that may have a lot of grime and dirt or possible contamination, which I don't know where it came from. All I know is when I receive them the condition of the evidence when I examine it. We try to obtain a piece of the control of the same item that is close to but not part of the stain which we're trying to identify a blood type from. You can take a portion of this shirt, run it just like you would as if it were stained, and you would get a slight indication of an A blood type. There is a very strong indication of an A,O blood type, but not to exclude the possibility of eliminating an A blood type individual. That is why it is reported and protocol in our reports.

Q. You're just being cautious there?

A. When we have an indication of blood types, it's there as a counter-balance. If you eliminate reporting them, then it may not be giving all of the scientific facts. So we include them in the reports until we have sufficient knowns from all individuals

involved, plus take into consideration the condition of all evidence submitted.

Q. Let me have you make this clear. You're stating in the stains themselves, that you've identified, you've found a type A,O factor and an A factor?

A. That's correct. As an example, you could have like, say with numbers, it would be like A,O was identified ten times stronger than the A.

Q. In the controls which were near the stain, but not actually part of it, what factors were you getting there?

A. We're talking around, say, a 2. And we were also obtaining about a 2 on the stain itself as an A blood type.

Q. Were there any O types in the controls?

A. No, sir. There was not.

Q. Once you got the defendant's known blood sample and you were able to type that, compare it with what you had already analyzed, were you able to draw any conclusions then?

A. On the report, which I issued after Mr. Davis' blood was analyzed, I simply stated that the results of the examination were that the known blood specimen of Mr. Davis contained the following blood

markers or genetic markers. He is ABO type O. PGM is 2+1+ and the Lewis or secreter status is an a-b+, which means he is a secreter. And the conclusion I stated was that the genetic markers of Mr. Davis were consistent with the genetic markers previously identified and reported on items previously submitted and reported as S-86-75.

In other words, the markers which I identified did not exclude Mr. Davis as being the depositor of the semen. Simply from the standpoint of a total exclusion, if there would have been one, if Mr. Davis would have been an ABO type B - and well we won't get into the PGM blood type - simply on the ABO blood type it was a B or A,B - taking into consideration the possibility of bacterial contamination, I cannot exclude him as being consistent with what I had previously identified.

Q. So what you're saying, even though you got that A factor, you can't exclude the defendant as being the source of that seminal fluid?

A. That's correct.

Q. Now, you're saying that because of some contamination, you can get a false positive on A?

A. Due to the condition of the items which were examined. And as I stated previously, even in

my notes, during the examination I noted that possible contamination may exist and that it might yield false positives.

Q. And that's before you found it on the control?

A. That's correct.

Q. Sergeant Zain, is there any other possibility to have this A factor and O factor blood type on these stains?

A. The only other possibility, other than contamination factors, would be that a person other than Mr. Davis could have contributed the semen which was identified, that individual being an A blood type individual. Because the PGM blood type was also consistent, you know, with what was identified from the secretions previously reported. That is a possibility. And the probability, considering the evidence, it would probably not be likely. But it is a possibility.

MR. REVERCOMB: May I have a moment, Your Honor?

THE COURT: Yes.

(Brief pause)

CONTINUED DIRECT EXAMINATION

BY MR. REVERCOMB:

Q Continuing on with what you just said, Sergeant Zain, why isn't it likely?

A If a person is a secreter, usually the indication when you identify the PGM, the results of the analysis, there will be a strong indication of that particular blood type. As I stated earlier, it's my opinion that the blood type which is identified, the true blood type would be O and definitely that the PGM type was 2+1+. PGM blood types are not effected by bacterial contamination or other types of contamination. When enzyme blood types are effected by contamination, blood factors are totally destroyed. The ABO typing and the tests used for ABO blood typing are very sensitive and that's why sometimes you can pick up bacterial contamination for blood typings from bacteria, dust and other types of forms.

Q Sergeant Zain, pursuant to a subpoena, have you brought with you your file?

A Yes, sir. I have.

Q And pursuant to that subpoena, have you made copies of your file, xerox copies?

A Yes, sir. I made appropriate copies of everything that was contained in this particular case.

(Whereupon, the copies were marked as State's Exhibit No. 33 for identification purposes only.)

MR. REVERCOMB: Your Honor, the State would offer State's Exhibit 33 for identification into evidence at this time.

MR. BARNETTE: No objection.

THE COURT: All right.

(Whereupon, State's Exhibit No. 33 was admitted into evidence at this time.)

MR. REVERCOMB: That's all I have of this witness, Your Honor.

CROSS EXAMINATION

BY MR. BARNETTE:

Q. Sergeant, you've been testifying today, I take it, from notes you have before you?

A. Testifying primarily from the file; yes, sir.

Q. Do you have any notes, aside from the file that has already been introduced?

A. No, sir. I do not.

Q. You do not?

A. No, sir.

Q. Sergeant, let me start by getting a

chronology of what you did in terms of when you did what and why.

You rendered two reports, is that correct?

A. Yes, sir. The original report was on evidence submitted in February of this year, and then the second report was the one issued this same month.

Q. The first report was dated July 15th, 1986, is that correct?

A. The first report was on evidence submitted in February.

Q. The first report is March 12th, 1986?

A. That's correct, sir.

Q. Does that mean between February 19th and March 12th this evidence resided somewhere without being tested?

A. The incident or the date of the crime, I believe, is in February, February the 18th, 1986. I received them at the Criminal Identification Bureau on February the 20th, 1986, and the report itself was issued on March 12th, 1986.

Q. Well, what I'm trying to ask you and maybe inarticulately is, when did you actually perform the work which made up the March 12th, 1986 report?

A. The work would have been performed within the week following the reception of the evidence at the bureau.

Q. How do you know that?

A. Our turn around time is two weeks from the time we receive evidence until the time we report it out as standard protocol and appearances in court.

Q. Referring to the March 12, 1986 report, would you read what comes after results of examination? I believe it's at the bottom of the page. Could you read that paragraph to us out loud?

A. "The seminal fluid identified on the T-shirt, purple sheet and bed pad contained the following genetic marker."

Q. Let me -- You're referring now to the March 12th report. Let me come and show you where I would like you to begin reading.

(Counsel approached the witness.)

A. "Seminal fluid was identified on the vaginal swabs, panties, T-shirt and briefs of Gerald W. Davis."

Q. All right. You can stop right there. What does that sentence tell us? Is that telling us that seminal fluid was found on the panties, T-shirt and briefs of Gerald W. Davis? Is that what you mean to

be saying?

A. T-shirt and briefs of Gerald W. Davis.
The panties were from Mrs. Ward.

Q. But it doesn't say that, does it?
It indicates they are all from Gerald W. Davis.

A. The vaginal swabs and panties are
indicated previously in the specimen submitted as far
as the sex crime kit. And it states "shirt, jeans, bra
and panties of Ethel M. Ward." That's understood.

Q. It's understood, all right. Sergeant
Zain, in your first report, March 12, 1986 --

A. Yes, sir.

Q. -- you reached a conclusion. Why don't
you read for us, again, out loud what that conclusion
was.

A. As I stated earlier, "The ABO genetic
marker identified" - and that is stated in the singular
tense - "identified from the vaginal swabs, panties, T-shirt,
briefs, purple sheet and bed pad was not consistent
with the ABO genetic marker of Ethel M. Ward."

Q. At the time you wrote that you had not
yet received a sample of Mr. Jerry Davis' blood, had
you?

A. No, sir. The only blood specimen was from the victim.

Q. How then were you able to conclude that the ABO genetic marker was not consistent with Ethel M. Ward?

A. Simply from the standpoint that from what I had identified and what I had recorded on the items for the results, the sheets, which you have in your possession, that the ABO genetic marker could be due by bacterial contamination or depositor of semen was not consistent with her blood type.

Now, the ABO type, the indication of A being present would not have come from her.

Q. So you felt safe to conclude at that time that it couldn't be Mrs. Ward, because she didn't have type A blood? Is that what you are saying?

A. I felt at the time, as I have stated right here, that the ABO blood type from the seminal fluid is reported as an A and it would not have been correct not to report it as such.

Q. I'm not sure that's responsive. Your conclusion then, and correct me if I'm wrong, is based on the fact that Mrs. Ward did not have type A blood, is

that correct?

A. It is correct. Mrs. Ward has type O blood.

Q. Now, my next question for you is, there was a red top sample taken from Mr. Davis and the results of that are contained in your July the 15th, 1986 report, is that correct?

A. That's correct.

Q. And that bears the Lab Number S-86-340, is that correct?

A. Yes, sir.

Q. Do the results of the tests on Mr. Davis in any way differ from those on Mrs. Ward?

A. As far as from the whole blood specimen, as far as his blood typing of ABO being O, PGM 2+1+ and a secreter, no.

Q. Then what you're telling me is that you ruled out Mrs. Ward because she was not type A, but now July 15th, 1986, when you find out that Mr. Davis is type O, you suddenly reach the conclusion - and I will read it to you - "Genetic markers of Gerald W. Davis were consistent with the genetic markers previously identified and reported on items previously submitted"

"and reported as S-86-75."

A. That's correct.

Q. Couldn't it equally be said that the same conclusion that you used in the first report could also apply to your second report?

A. As I stated earlier, the possibility of the A blood type, the possibility of it having originated in another individual, the depositor of the semen, is a possibility. Probability wise, due to the condition of the evidence which was submitted and the results obtained - and I have on the work sheet that the possibility of the A is negligible, that the possibility of the O is definitely there.

Q. That is not a conclusion you reached in your first report?

A. That is not a conclusion that is stated in the report.

Q. Not stated in the report?

A. That's correct.

Q. Sergeant Zain, I wonder what would happen to Mr. Davis if his blood type had been

A.

A. It would have been consistent.

Q. That's an interesting theory. I suppose under your theory that almost anything would be consistent then, isn't that correct?

A. No. As I stated earlier, an individual who would have been a B secreter with a PGM that was consistent with 2+1+, if the PGM was totally different and the ABO had been the same, it would have excluded the individual one hundred percent.

Q. Sergeant, let me ask you to refer to what is called a serology work sheet. It seems there are a number of them. I'm not sure this one is identified in some manner differently. I'm sorry. It is identified as S-86-75. Could you tell me if these markings were placed on this paper contemporaneously with the marking that appears at the top of the paper?

A. What do you mean contemporaneously?

Q. At the same time.

A. Yes, sir.

Q. When was this sheet prepared?

A. At the time of the analysis.

Q. The first or the second analysis?

A. This sheet and this sheet (indicating) are with the first analysis. On Mr. Davis' blood there

is another work sheet.

Q. Sergeant, if you can answer me, does seminal fluid by definition contain semen?

A. It would be more aptly said that semen contains seminal fluid, because semen is a collective term for seminal plasma and the sperm cell.

Q. In this case you found seminal fluid, is that correct?

A. That is what is identified by the tests which were performed. No spermatozoan were identified.

Q. Does that exclude the presence of sperm?

A. No, sir.

Q. Sergeant, let me ask you just kind of a broad question. Is your report correct?

A. Sir?

Q. Is your report or your reports in this case, both of them, are they correct?

A. They're correct to the best of my ability.

Q. Are they accurate?

A. Yes, sir.

Q. Are they performed according to the most advanced and commonly accepted principles used in your

profession?

A. Yes, sir. They are.

Q. Do you know of any errors you made in your evaluation of any of these samples that you looked at?

A. As far as the test results?

Q. Yes.

A. No, sir.

Q. Were there any other false positives other than your mention or suggestion of a type A false positive?

A. These were the only inhibitions and type of testing where a false positive can arise.

Q. As the only one in which a false positive can arise, is that what you're telling me?

A. No, sir. With a type of a possibility of bacterial contamination you can obtain a blood type B sometimes on particular material. That is all dependent on what type of bacteria may be present in or on a stain, whether it be blood, saliva, seminal fluid or vaginal bacteria.

Q. I suppose that bacteria is something also that isn't included in either of the two reports mentioned?

A. We do not do bacteriology studies.

When you look at a vaginal smear slide or make an extract from a particular item, you can visually see bacteria present or yeast cells or flora.

Q. Sergeant, just so everyone here is clear and I want that to be the case, I think your testimony is very important.

A. Okay.

Q. Tell me again the three classifications as they apply to Mrs. Ward?

A. You might want to explain that to me first.

Q. Let's go to your first report, report of March 12th. Could you give me the ABO blood type for her?

A. Mrs. Ward's ABO is O. She's a PGM type 2+1+ and she's a secreter. Mr. Davis is an ABO blood type O, a PGM blood type 2+1+, a secreter. The evidence which was examined, on some of the items, on the original report I identified a blood type A,O and a PGM blood type 2+1+. No secreter status is necessary when you obtain a blood typing from secretions, because the depositor has to be a secreter for a blood type to be identified.

Q. Sergeant, let me ask you one final question. You indicated there may have been fluid already present in Mrs. Ward. Is that one of the possibilities why there might be A type showing up?

A. I stated that the possibilities are; one, that bacterial contamination due to and based on the controls which were run in the particular case; secondly, that the A blood type could have come from an individual - from the semen of an individual that is blood type A, but also whose PGM blood type was one of three different blood types.

MR. BARNETTE: Thank you. That's all the questions I have.

REDIRECT EXAMINATION

BY MR. REVERCOMB:

Q. Sergeant Zain, I would refer you again to your file and the original report, I guess the first report, dated March 12, 1986.

A. Yes, sir.

Q. That's before you got the defendant's known sample of his blood, isn't that correct?

A. Yes, sir. That's correct.

Q. Did you make any notes about the possible bacterial contamination at that point?

A. I did on the work sheet; yes, sir.

Q. Do you have that with you?

A. (Witness tendered said work sheet to counsel for the State.)

Q. And you noted that up at the top?

A. Yes, sir. That's correct and also on the samples.

Q. Could you read what you wrote up there on that work sheet?

A. The note which I placed on the sheet at the time of the examinations was abbreviated PCT-possible contamination of items with bacteria and FLP-which would be false positive results, (knowns needed).

Q. Sergeant, you have already testified that you suspected bacterial contamination. You also testified that it's possible that that seminal fluid was left by a person with type A blood. But you said it wasn't probable. Can you say within a reasonable degree of scientific certainty which of those two alternatives is more likely?

A. Well, simply my opinion, which I expressed

earlier, is that the A blood type is probably due to the bacteria. That is my feeling after comparing - when you compare the results. But, still yet, the possibility does exist. But in my opinion it was - the A blood type is as weak in indication as it may have been and could have very probably came from the contamination of the evidence.

MR. REVERCOMB: That's all I have, Your Honor.

RECROSS EXAMINATION

BY MR. BARNETTE:

Q. Sergeant, is that conclusion or opinion based upon any scientific basis for which you can identify for us?

A. Which conclusion?

Q. The conclusion that bacteria, as opposed to introduction of an individual, as a blood type A.

A. There is a variety of literature available which will explain how bacteria - which studies have been done on different types of materials, different air samples, different types of secretions and mixtures of secretions where false positives arise.

Q. Why does that make it any more likely than

the fact with another individual of type A blood introducing semen into this young lady?

A. When you get to the point of the reactivity of the sample which you are analyzing, that is basically the interpretation of the results.

Q. Why then did you not indicate that when you reached your first conclusion, which ruled out Mrs. Ward in this case?

A. Well, one fact being that Mrs. Ward could not have originated the semen.

Q. I think that's obvious.

A. And that the blood types were -- As far as the evidence itself, whether it was bacteria or not, to eliminate it completely may have not been correct. That's why the two possibilities exist in my testimony today. The possibility does exist, the semen could have originated from A blood type secreter. If I ruled it out altogether and in the original report then, the report would have been issued that the blood types were consistent straight down the line.

Q. But you didn't rule it out in the first report. You ruled out the facts that your findings were consistent with those of Mrs. Ward.

Isn't that your conclusion?

A. The conclusion on the first report stated that the ABO blood type was consistent, the PGM blood type was consistent.

MR. BARNETTE: Thank you. That's all I have.

MR. REVERCOMB: We have nothing further, Your Honor. We would ask this witness be excused.

THE COURT: All right. You may be excused.

(Witness Zain stood aside.)

THE COURT: Do you have any additional witnesses?

MS. MOHLER: No, ma'am. The State would rest.

(Whereupon, the State rested their case at 2:27 p.m.)

MR. BARNETTE: Your Honor, I have a motion to make at this time.

THE COURT: Jurors, we're going to give you a break while he makes that motion and ask you to step back to the jury lounge on this floor, the jury room. We'll call you back together momentarily. As you know, don't discuss the case while you're out.

(Whereupon, the jury retired to the jury room and the following proceedings