already under oath in this matter.

THE WITNESS: Okay, Your Honor.

FRED SALEM ZAIN was thereupon called as a witness by the State, and having been previously duly sworn, testified further as follows:

THE COURT: You may proceed, Mr. Cummings.

DIRECT EXAMINATION

BY MR. CUMMINGS:

Q You are F. S. Zain, Master Sergeant with the C.I.B. in Charleston, is that correct?

A Yes, sir, that's correct.

Q And you testified yesterday and were in the process of testifying when we recessed for the day, is that correct?

A Yes, sir.

MR. CUMMINGS: F. S. Zain was declared an expert by this Court in serology and hair identification.

Q Is that correct?

A Yes, sir, that's correct.

THE COURT: Mr. Cummings, I can hardly hear you. I wonder if you would speak up just a little bit.

MR. CUMMINGS: I will speak up.

Q At this time I'd like to show you what has been marked for identification as State's Exhibit 25,

and ask you if you have seen that?

(The item referred to was thereupon handed to the witness.)

A Yes, sir, this is a container which has marked as the known blood specimen of Mr. Woodall. This was received at the serology lab, which I spoke of yesterday, and remained in a sealed condition in the refrigerator in the serology section. I removed this particular item from the refrigerator after it was brought to the laboratory and performed an ABO typing and a secretor status typing on this particular item. The case number of S-87-079, which is on the outside of the envelope, State's Exhibit 25, and my initials which are right here in blue of FSZ, as well as on the back portion of the styrofoam container. The other initials of TAS are Trooper Ted A. Smith, who is under my supervision and direction in the serology section.

MR. CUMMINGS: Your Honor, at this time the State would move into evidence State's Exhibit No. 25.

THE COURT: Any objection?

MR. SPURLOCK: No objection.

THE COURT: It will be admitted without objection.

STATE'S EXHIBIT NO. 25

The item referred to, previously marked for

identification, was thereupon received in evidence.

MR. SPURLOCK: May we approach the bench?

Whereupon the following proceedings were had at the bench, out of the hearing of the jury:

MR. SPURLOCK: For the sake of the record, Your Honor, the defendant once again objects to the entry of the blood and all of the further scientific evidence in this case on the basis taken up in the motions to suppress the non-voluntariness --

THE COURT: For the same reasons, I will overrule the objection and allow their admission, but you may note your objection for the record.

Whereupon the following proceedings were had in the hearing of the jury, there being present the same parties as heretofore noted, including the defendant and his counsel:

THE COURT: Thank you, counsel.

You may proceed, Mr. Cummings.

Q I'd like to show you what has been marked for identification as State's Exhibit 40, and ask you if you can identify that?

(The item referred to was thereupon handed to the witness.)

A This particular envelope was submitted to the

laboratory. It contains known facial hair, more specifically, beard hair from Mr. Woodall. The initials and the case number are what I showed to you-all yesterday, S-87-104 and my initials. This envelope contained hair samples which were submitted for hair comparison and examination.

Q And I'd like to show you State's Exhibit No. 42, and ask you if you can identify that?

(The item referred to was thereupon handed to the witness.)

A There again, this is the same envelope which I referred to yesterday. It has a case number S-87-96 there at the end of my finger as well as my initials FSZ. This particular envelope was submitted to the laboratory and was marked as having suspected hairs taken from Ms. Mowery's vehicle. Hair samples were removed from this envelope and mounted for comparison purposes with known hair specimens of Ms. Mowery as well as known hair specimens from Mr. Woodall.

Q Did you perform an examination upon the hairs in State's Exhibit No. 42?

A Yes, sir, I did.

Q And did you remove the samples from there?

A Yes, sir, I did.

Q Do you have those samples with you?

A Yes, sir.

Q Are they the same samples that were in State's Exhibit 42?

A Yes, sir, they are.

Q And have they been in your custody all this time?

A Yes, sir, they've been in my sole care and custody from the time I received the envelopes and removed the hairs, mounted the hairs specifically for examination, and retained the slides after the examination in my personal evidence locker at the bureau, and have remained in that locker until I brought them here to court today.

Q May I have those hairs that were removed from State's Exhibit 42 and used for comparison.

(The item referred to was thereupon handed to Mr. Cummings.)

MR. CUMMINGS: I would like at this time to have this marked as State's Exhibit No. 47.

STATE'S EXHIBIT NO. 47 FOR IDENTIFICATION

The item referred to was thereupon marked as above indicated.

(The item referred to was thereupon handed to

defense counsel.)

MR. CUMMINGS: And the State would move to have State's Exhibit No. 47 admitted into evidence at this time.

THE COURT: It will be admitted.

MR. SPURLOCK: May it please the Court, let the record reflect our continuing objection to the admission of each and every one of these items.

THE COURT: It shall and it does. It will be admitted.

STATE'S EXHIBIT NO. 47

The item referred to, previously marked for identification, was thereupon received in evidence.

Q Do you also have with you the contents of State's Exhibit No. 40?

A Yes, sir, I do.

Q May I have that, please.

A Yes.

(The item referred to was thereupon handed to Mr. Cummings.)

Q Has it been in your custody from the time you removed it from State's Exhibit No. 40 until this very moment?

A Yes, sir, it has.

MR. CUMMINGS: I'd like to have this marked for identification as State's Exhibit No. 48.

STATE'S EXHIBIT NO. 48 FOR IDENTIFICATION

The item referred to was thereupon marked as above indicated.

Q Now, is that the known hair of Glen Woodall?

A This is the hair removed from Ms. Mowery's car.

Q And No. 47 was the --

A Known hair specimen --

Q Known hair specimen --

A Facial hair specimen of Mr. Woodall.

MR. CUMMINGS: Your Honor, I reversed those two statements.

Q Did you perform any analyses upon the exhibits found in Ms. Mowery's car? In other words, State's Exhibit No. 48, were the hair samples provided you in State's Exhibit No. 47?

A Yes, sir, an examination was made of the hair samples which were removed from Ms. Mowery's vehicle. Upon examination, the hair specimens examined, the majority of the hair specimens were similar and consistent with the microscopic characteristics of the known hair samples of Ms. Mowery. Upon examination of

the particular hair specimens from the vehicle, there was a hair, which is one particular hair that was neither head hair nor was it pubic hair, that was dissimilar in nature to Ms. Mowery's known hair samples. In other words, what I'm saying is that the particular hair could not have originated from her. There was, in fact, a hair specimen which was compared with and identified as a facial hair which was compared with the known facial hair of Mr. Woodall.

Q What do you look for in hair comparisons? Can you explain to the jury?

A Hair comparisons are simply this, the comparisons are done with a microscope, they are done with what is called specifically a comparison microscope. A comparison microscope enables an individual to examine, two items in this case, two hair samples at the same time. You can line them up side by side and then you can look at the external and internal characteristics, microscopically, of each individual hair. Hair is mounted in a particular substance which allows an individual to look inside the hair. Most of us can pretty much tell if you think you may have blonde hair or brown hair, black hair. There are unique characteristics and there are general

characteristics of each and every individual's hair specimens. The characteristics of each hair are compared not only within the sample you examine, but also compared with the, for example, unknown hair specimen that you are trying to make the comparison with. The microscopic characteristics, we routinely examine for 15 characteristics. The 15 characteristics which we examined for have separate components. For example, we could say a car would be a characteristic, but yet the components of that car would be like the headlights, the taillights, the doors, just to give you an anology of what we're talking about here. The characteristics were examined by routine examinations and a comparison was made. Comparison of the hair from Ms. Mowery's vehicle was, in fact, identified as being a facial hair, more specifically a beard hair. The characteristics which were identified from that hair were in general terms the same microscopic characteristics which I identified from a known beard hair of Mr. Woodall. More specifically, there were some unique characteristics which were also identified as being the same characteristics as were found in Mr. Woodall's beard hair.

Q Did you bring or make this morning a chart

that may aid the jury in the explanation of some of the things you look for in hair comparisons?

A Yes, sir, I did just for the jury's convenience. I prepared a hand drawn chart. So you'll have to excuse the circles on it, whatever, but it will give you a general idea of what some microscopic characteristics are and what some of the terminology of those microscopic characteristics are.

MR. CUMMINGS: Your Honor, may I approach the bench with whichever counsel?

Whereupon the following proceedings were had at the bench, out of the hearing of the jury:

MR. CUMMINGS: Your Honor, this chart was just hastily drawn up this morning solely as an aid to the jury. It has not been shown to defense counsel. In fact, we just decided this morning to make it up. And I would like to give them the opportunity to see if they want to object to it.

THE COURT: Do you want to check that with your expert?

MR. SPURLOCK: We do object to its use, Your Honor.

THE COURT: On what basis?

MR. SPURLOCK: No proper foundation being laid for

its use.

THE COURT: That's the basis for the objection?

MR. SPURLOCK: Yes.

THE COURT: Lay a foundation and use it.

Whereupon the following proceedings were had in the hearing of the jury, there being present the same parties as heretofore noted, including the defendant and his counsel:

Q Let me hand you this chart you just gave me and ask you who prepared that chart?

(The chart referred to was thereupon handed to the witness.)

A I did.

Q And from what did you prepare it?

A It was prepared basically from a hair examination booklet that is given to individuals that attend the FBI Academy on hair comparison examinations.

Q And what was the purpose of preparing that?

A Simply to show some of the internal characteristics which are identifiable by microscope. Also to give a general idea of what a blunt ended or beard or facial type hair would look like.

MR. CUMMINGS: Your Honor, I would now like to have this marked as State's Exhibit No. 49.

STATE'S EXHIBIT NO. 49 FOR IDENTIFICATION

The item referred to was thereupon marked as above indicated.

MR. CUMMINGS: And move its admission.

THE COURT: Over the objection previously noted it will be admitted.

STATE'S EXHIBIT NO. 49

The item referred to, previously marked for identification, was thereupon received in evidence.

Q Sergeant Zain, would you place this where you can best use it to aid the jury.

A Okay.

Q Sergeant Zain, can you explain what has been prepared upon that chart?

A Simply the circle, which I spoke of earlier, is what would be what the field would look like if you look through a microscope. It has no bearing on the hair itself. That's just looking through a microscope. The item within that circle would be what a hair specimen could look like. The hair specimen in general would consist of an outer border. It would also consist of what is called a cuticle, which is a small area on the lining of the hair. You also have a cortex. A cortex is simply the major body of a hair.

In other words, the majority of your hair is called a cortex. You also have a medulla. A medulla is the center portion of the hair. An ovoid body and pigment granules are particular characteristics of certain types of hair. An ovoid body appears just like a hole in the hair. Pigment granules, of course, give a certain color to the hair as well as are unique in distinguishing certain types of hair as far as race or origin, whether a hair would be Caucasian, negroid, or mongoloid. And those are the three classifications for types of hair. You have cortical fusi, which are identifiable in certain components of hair, whether a hair is a mature hair or what stage a hair may be in. This particular section or portion is showing say like from a mid portion of a hair to the end or the tip. The tip region of the hair is another characteristic that we examine. Why I have this rounded off with the little markings on the end is the best way I can portray what the beard hair looked like both from the vehicle of Rebecca Mowery as well as the known facial hair of Mr. Woodall because it shows that it has been rounded off with some age after it has been clipped or trimmed, whereas when you clip or trim beard hair, you'll have diagonal cuts on the tip ends of the

particular hair specimen. The medulla I just put in in a colored type of ink is to show that it was the center of the hair because you can have variations in medulla, depending on the type of hair or the type of hair area it may have originated from. Extending out past say midline the hair, you go into what is called midline, to the root portion of the hair, which is also examined for certain microscopic characteristics and are part of the routine examination.

Q Sergeant Zain, how many total characteristics do you search for in a common practice of hair identification and comparison?

A There are routinely examined 15 major category or characteristics which we routinely examine for and compare with. I might add that in those 15 general characteristics which we examine for, each one of those characteristics may have anywhere from one to possibly five or six specific components of each characteristic. The best way I can explain that is give you a direct example. Say for example if we looked for damage that may have been done to a hair, we would look to see whether it has been cut, crushed, broken, or burned. The crushed, cut, broken, or burned portions are the components that we would look under

the category of damage as a characteristic to the hair. Another category we would look into would be as far as artificial treatment, whether a specific hair sample has been bleached, died, and possibly the length of time since the treatment may have occurred to the hair.

Q How many of these characteristics did you look for in the known hair of Glen Woodall and the unknown hair which came from the console of Rebecca Mowery's vehicle?

A All of the major categories were covered on the examination of both hair samples as well as the major categories which I've just explained. There were over 25 speific components of each characteristic which were also compared.

Q How many of those were similar between State's Exhibit 48 and 47?

A All of the characteristics, general category, as well as specific components, were consistently the same both in the hair from Ms. Mowery's vehicle as well as the known facial hair of Mr. Woodall.

Q Did you find any of those characteristics that were dissimilar?

A The total overall and general viewing of both hair specimens, I would have to conclude not only with

the experience in hair examinations, but in the scientifically compared examination, that the characteristics were the same, and there was no indication of dissimilarities other than length.

Q Based upon your examination, have you been able to form an opinion as to whether or not it is likely that the hair found on the console of the vehicle used in Rebecca Mowery's rape was the same as the hair taken from the face of Glen Woodall?

A As I stated in my report, that the microscopic characteristics of the facial hair of Mr. Woodall were consistent with the microscopic characteristics of the hair which was taken from the vehicle of Ms. Mowery. That's a general statement. To further the opinion would simply be to state that I saw -- had no reason to believe that the hair could not have originated from Mr. Woodall, and it would be very highly unlikely that due to no dissimilarities identifiable and distinguishable, that the hair could have originated from anyone else.

Q Sergeant Zain, I'd like to show you State's Exhibits 36 and 22, and ask you if you have seen them?

(The items referred to were thereupon handed to the witness.)

A Yes, sir, on State's Exhibit 22, this is what we commonly refer to as a sex crime evidence kit. This particular item contains items that are taken at the time of an examination by a physician of a sex related type of incident. This particular box or sex crime kit was submitted to the laboratory. The specific date was January 23rd, 1987. It was submitted to me directly by the investigator, Jim Scheidler. He submitted this particular sex crime kit for examination and analysis to determine particular things about the evidence that was enclosed.

Q And how about the other sex evidence kit?

A This particular kit was submitted to me specifically by Trooper O. S. Adkins on February 17th, 1987. There again, this is a sex crime evidence kit and contains items that were collected by a physician at the time of the examination. On the first kit the lab number which was placed on this particular item S-87-32, and my initials FSZ, contains items that were collected at the time of examination of Ms. Mowery. On the second kit classified as S-87-72, and my initials FSZ, which are in the front panel, this particular kit had items that were collected on Ms. Johnson.

Q I'd like to show you State's Exhibit No. 5,

State's Exhibit No. 11, and ask you if you had the occasion to examine those?

(The items referred to were thereupon handed to the witness.)

A Yes, sir, I did. On State's Exhibit No. 5, the markings which I've placed on the inside of this skirt of S-87-32, and my initials, it may be a little hard for you to see, this particular item was submitted as coming from Ms. Mowery and was submitted along with the sex crime evidence kit. The pair of panties that are marked as State's Exhibit No. 11 also have my markings of S-87-72 and my initials. These panties were submitted with the sex crime kit of Ms. Johnson for examination.

Q When you receive an item or items for examination, can you tell us what the procedure or protocol that is generally used for testing for blood and bodily secretions?

A Yes, sir, I can. Depending on the type of items that are submitted to the bureau for examination, specific procedures are as follows: For blood samples, for example, a whole blood sample or a bloodstain type item, we determine, one, whether the blood is human or animal. This is, of course, if it's a known blood

sample from an individual, we still follow the same protocol just like we wouldn't know who it may have come from. We determine whether it is blood and whether it's human blood. After this process is followed, then we continue on and try to obtain as much information from the blood, whether it be in stain or liquid form, as we possibly can following our normal routines at the section. The normal routine, as far as blood typing, will consist of anywhere from seven to possibly 14 blood typings. Now, this is on a blood sample or bloodstain. On body fluids, more specifically, if we are examining for seminal fluid, we will test for, one, whether, in fact, there is seminal fluid identifiable, and two, if there is seminal fluid or semen identified, the protocol would be to obtain as much information from the seminal fluid or secretion mixtures that we possibly can. The routine protocol for examination of semen or seminal fluid stains would be anywhere from four to six blood typings depending on the amount and depending upon the racial background of the individuals that we have had evidence submitted from.

Q And did you follow this procedure upon the testing of any of these items?

A Yes, sir, seeing how there is a known blood specimen which we've already referred to from Mr. Woodall, in each of these sex crime kits, State's Exhibit No. 22 and State's Exhibit No. 36, these kits not only contain secretion type of evidence, they also contain known blood samples from Ms. Mowery and also from Ms. Johnson. So the protocol for the blood was followed and protocol for the seminal fluid and secretion identification also was followed.

Q Can you tell the jury what, if anything, you found from the examination of the items of clothing that were submitted to you, the rape kit from the case of Rebecca Mowery, the rape kit from the case of Janet Johnson, and the known blood sample of Glen Woodall?

A Yes, sir, specifically state, and I would like to just follow the routine of each report that was issued out so that the jury can reference the case numbers which I refer to on the evidence. On S-87-32, which more specifically pertain to the sex crime evidence kit, there was also a skirt, shirt, socks, panties, bra, and jacket of Ms. Mowery submitted for examination. The results of the examinations were as follows: That spermatozoa, which are the male sperm cell, and seminal fluid, were identified on the vaginal

smear slide, vaginal swab, and skirt. A vaginal smear slide for your-all's information is the smear slide which is made at the time of the examination by the examining physician. He makes a smear slide and will check the slide to see if there's any motile sperm cells where, in fact, to identify whether intercourse has occurred in the individual that he's examining. A vaginal swab is used to make the smear slides. The vaginal swab also has another purpose. If seminal fluid is identified on the vaginal swab, then that gives us material that we can examine to not only identify sperm cells from the swab, but also to identify any blood typing information that may have been contributed by the semen donor. There also was a skirt which sperm and seminal fluid were identified on. Stains of human blood were also identified on the panties. No seminal fluid or blood were identified on the other items which I've mentioned. I requested at that time that a known blood specimen should be submitted for comparison purposes. That statement is only to say that we weren't requesting a known blood specimen from Ms. Mowery. We were requesting any and all blood samples from possible suspects at the time. On S-87-72, which is the other sex crime kit, and other

items of evidence that I have in front of me, there were a skirt, socks, sweater, bra, and panties also submitted at the same time as these items. The results were simply that seminal fluid and sperm were identified on the vaginal slides, vaginal swab, and panties. No sperm or seminal fluid were identified on the remaining items. I did state at that time that secretions identified on the vaginal slides, the vaginal swab, and panties contained four genetic markers which I can better show you on a chart that I have drawn up, but I'll wait until I go through all the reports before I do that. I also recorded out the known blood specimen of Janet Johnson contained four genetic markers which were used in comparison with the secretions. These were reported out at that time because I had already had submitted -- I didn't already have submitted, excuse me -- this report was issued after the known blood specimen of Mr. Woodall was submitted. At this time I also reported the known blood specimen of Mr. Woodall contained the following blood characteristics or genetic markers, these also are listed on a chart, which I will show you shortly. I also reported the microscope characteristics of pubic hair combings, which were submitted in the kit, were

consistent with microscopic characteristics of Ms. Johnson's known pubic hair. I also stated the microscopic characteristics of head hair from a particular coat were similar to the microscopic characteristics of Ms. Johnson's known head hair. The combination of the information, as far as the blood characteristics and the blood types, will be better shown by the chart which I have in front of me here.

Q I'd like you to refer to the chart and -- first, I'd like to ask you about this chart. Have you inspected this chart as to its accuracy and is it prepared with your approval?

A Yes, it is. It's simply a chart which contains the information from my reports to make it easier for you-all to read it straight across instead of trying to just listen to me rattle on. And it will give you a -- it will be easier to compare the blood typings from Ms. Mowery, from Ms. Johnson, and also from Mr. Woodall.

MR. CUMMINGS: Your Honor, on this particular chart, I don't believe that defense counsel has seen it.

MR. SPURLOCK: That's correct, Your Honor.

MR. CUMMINGS: And would like to -- it is purely

as an aid to the jury, not to speak in --

Whereupon the following proceedings were had at the bench, out of the hearing of the jury:

MR. HATCHER: Your Honor, this chart is consistent with the report, I believe, that they have seen heretofore and is nothing new to them.

THE COURT: Counsel.

MR. SPURLOCK: We do object to the use of this, Your Honor, on the basis that there's -- no proper foundation has been laid, No. 1. No. 2, use of it will, in fact, not aid the jury, but it is highly prejudicial to the defendant without any probative value.

THE COURT: You say it's prejudicial. It apparently just reflects the report which is going to be testified to. How is it more prejudicial than --

MR. SPURLOCK: Just to keep, Your Honor, from putting before the jury chart after chart after chart of data with no probative value we say is prejudicial.

MR. CUMMINGS: The object of the trial is to clarify for the jury and make as straight and clean by demonstrative, as well as oral evidence, and this can do nothing except aid the jury in its clarity.

THE COURT: I concur. I believe you've laid a

proper foundation. I believe it's not at all prejudicial and that it's simple aids in what otherwise might be confusing piecemeal evidence. I will allow you to have it marked and --

MR. SPURLOCK: We would register a continuing objection as to leaving that chart up there on the basis it's on the hair and it's prejudicial.

THE COURT: On the hair?

MR. SPURLOCK: Yes.

Whereupon the following proceedings were had in the hearing of the jury, there being present the same parties as heretofore noted, including the defendant and his counsel:

MR. CUMMINGS: I would like to have marked for identification as the next sequential number as State's Exhibit No. 50, and would move its introduction into evidence as an aid to the jury.

STATE'S EXHIBIT NO. 50 FOR IDENTIFICATION

The item referred to was thereupon marked as above indicated.

THE COURT: And for that reason it will be admitted subject to the objections that were made. And let the record reflect that the two previous exhibits are being removed so that that exhibit can be hung up.

STATE'S EXHIBIT NO. 50

The item referred to, previously marked for identification, was thereupon received in evidence.

A The chart that I was referring to is this, and this is simply the three reports, report on S-87-32, the report on S-87-72, and S-87-79, which was the known blood specimen of Mr. Woodall. One, that genetic markers, for summation, are simply blood characteristics or blood typings. The ABO blood type of Ms. Mowery is a Type O. Another blood typing which is performed on blood and secretions is called a PGM blood type.

Q Sergeant Zain, can you wait one second.

MR. CUMMINGS: Let me approach the bench.

Whereupon the following proceedings were had at the bench, out of the hearing of the jury:

MR. CUMMINGS: I don't believe that the rear members of the jury can see that. I've asked that some small nails be gotten that we could drive into the cork board up there that would hold that up higher. If we would take a second and explain it.

THE COURT: Let's take a brief recess. I've got to arraign two of your criminals.

Whereupon the following proceedings were had in

the hearing of the jury, there being present the same parties as heretofore noted, including the defendant and his counsel:

THE COURT: Ladies and gentlemen, while we get some aids of our own, we are going to take a brief recess for about five minutes. So please don't get too far away.

The courtroom will remain seated while the jury recesses across the hall.

Whereupon a recess was taken, after which proceedings were resumed in the hearing of the jury as follows, there being present the same parties as heretofore noted, including the defendant and his counsel:

THE COURT: The record will again reflect the presence of the jury in the box, the prosecuting attorney, the defense attorneys, and the defendant.

You may proceed.

DIRECT EXAMINATION

BY MR. CUMMINGS:

Q Sergeant Zain, you were explaining to the jury the testing that you had done and what findings of blood groups, I believe, you had found, and what these blood groups indicate when we took a recess for other purposes, to raise the chart there, is that correct?

A Yes, sir, that's correct.

Q Could you continue on from that point.

A Yes, sir, I could. The results that were reported in the case S-87-32, S-87-72, and S-87-79 were as follows: The known blood specimens that I refer to in each one of the sex crime kits contained whole bloods of Ms. Mowery in one and Ms. Johnson in the other, and then of course, the known blood specimen, which is in the styrofoam containers that we referred to earlier. The ABO type of Ms. Mowery is blood Type O, the PGM blood type is what is called a 2+1-, GLO I blood type is a 2-1, and the Le blood type or secretor, which I can explain to you what a secretor is here

shortly, is an a-b+. On Ms. Johnson, her known whole blood was typed as an ABO Type O, a PGM Type 1+, a GLO I Type 2-1, and an a+b-, which is a non-secretor. At this point I would like to explain to you what a secretor and non-secretor individual is. A secretor individual is an individual in a given population that will have their ABO blood type, for example, in Ms. Mowery, will be identifiable in her body fluids such as her saliva, her vaginal secretions, her perspiration, whatever. A non-secretor individual is an individual that their ABO blood type is not identifiable from their saliva, from their vaginal fluid, from their other body fluids. In a male, if a male individual is a non-secretor, you would not be able to identify that individual's ABO blood type in their seminal fluid, perspiration, saliva. Mr. Woodall's known blood sample, which was an ABO Type B, a PGM Type 2+, and a GLO I Type 2-1. He's also a Lewis or secretor, a-b+, which is also a secretor individual. So the best thing to remember is that Ms. Mowery is an O. Mr. Woodall is a B. Ms. Mowery is a secretor. Mr. Woodall is a secretor. Ms. Johnson is a non-secretor. Therefore, her ABO Type O would not be in her body fluid. And that's important because when a sex crime kit is taken

and vaginal samples are taken and vaginal samples are tested, you would not find ABO Type O that could originate from Ms. Johnson, whereas in Ms. Mowery's body fluids, say the vaginal swabs and the kits, we would be able to identify an ABO Type O from her body fluids and from the vaginal secretions. In the evidence spoken of earlier from Ms. Mowery, we referred to a vaginal swab and a skirt, identified sperm cells and seminal fluid from the vaginal swab and skirt of Ms. Mowery. The blood typings which I identified from the mixture of secretions on the vaginal swabs and skirt was an ABO Type B and an ABO Type O. The PGM type was a 2+1-. The PGM blood type of 2+1- is the same as Ms. Mowery's PGM type, as you can see. The numbers and the plus and minuses are the same.

Q Sergeant Zain, would it be more helpful to draw on the board how you test or what you go through on the screening for the PGM type?

A Yes, it would, Mr. Cummings. If you would, I can go ahead go on through this and show the jury on the board.

The GLO I type blood was a 2-1 also from the secretions. And of course, an a-b+ would show that the semen donor and the victim would have to be secretors

and that's what was identified. From the vaginal slides, vaginal swabs, and panties of Ms. Johnson, which these pair of panties and the slides and swab are in the kit, I identified an ABO Type B, which is the same as Mr. Woodall's, an ABO Type O, which could not have originated from Ms. Johnson, a PGM 2+, and the comma is in there because PGM 1+ was identified, and of course, you can see she is a PGM 1+. Therefore, with that evidence we know for sure that the semen donor had to contribute this blood type. The 2+ had to come from the semen donor. Now, I'll go into a further explanation of that shortly. The GLO I type also is the same, Ms. Johnson, Mr. Woodall, and also secretor individual would have deposited the semen, especially seeing how Ms. Johnson is a non-secretor. I stated earlier that a non-secretor individual would not have -- be able to identify their blood type in their body fluids. A secretor individual will. For example, Ms. Mowery is an O. She'll secrete an O. Mr. Woodall is a B. He'll secrete a B. The other aspect of a secretor individual is this, they will secrete their known ABO blood type and an O. Of course, if you're an O, that's all you're going to find, but if, for example, you were an A secretor, I'm an A secretor individual, I will

secrete an A and I will secrete an O in my body fluids. In the same respect, Mr. Woodall is a B secretor. So, therefore, he would secrete a B and he would secrete an O in his body fluids. Therefore, it's consistent with what I found in Ms. Johnson's vaginal swab, vaginal slides, and the panties, a B and an O, which would indicate strongly that the secretion came from a B secretor individual. The population distributions which you see here are population distributions that these four blood characteristics could be found in Ms. Mowery's case. These four could be found in 26 out of every 10,000 people could have this combination of blood types. On Ms. Johnson, you have 89 people out of 10,000 that could have these combination of blood types. And on Mr. Woodall, these four blood characteristics would be found 6 in 10,000 of more specifically the male population.

At this time I would like to explain to you what I was referring to you, why there's a comma on this PGM blood type, right here. What I'm going to do is show you just a simple diagram of how I view or when I interpret an analogy of what I'm actually seeing. It best can be described on the blackboard. A PGM 1+, and in this case Ms. Johnson is a 1+, would be, for

example, this right here. A PGM say 2+ like Mr. Woodall's would be -- and I'll put it like this -- the PGM on Ms. Mowery, which was a 2+1-, would be like this. This is a 2+1-. This is a 2+, 2+, 1-. As you can see, these markers are in different places on the board. So, therefore, it makes it pretty evident, because of the positioning on the board, that they are what I've written down, when you're interpreting the results for a PGM blood type, these blood types can be interpreted by the specific position that they are just like on a photograph. In the secretions of Ms. Mowery, we had a 2+ and a 1- that were identified. Now, to explain more thoroughly, for example, this would be her whole blood, and when you have secretions, the secretions can mask or cover a blood typing if it's the same. For example, you would have like what's called a banding that would look like this. It would be more intense, it would be larger, and in my past years of experience, I've seen this occur many, many times in mixtures of secretions, but in my conclusion in the report, I stated that the PGM being a 2+1- was consistent with Ms. Mowery's PGM 2+1-, instead of saying that specifically the semen donor was a PGM 2+, because in all reality, the person could be a 2+ or a

2+1-. That's possible. In Ms. Johnson's case it's a different story. We know that she is definitely a 1+, and we also know that from the secretions identified from the vaginal swab and also from the panties, we identified a 2+ that could not have originated from her. There's no way that Ms. Johnson could have produced that PGM blood type. It had to come from the semen donor. There again, the possibility is that the semen donor could be a 2+ by itself or a 2+, 1+. Considering the standpoint because one individual is suspect for both -- being the semen donor in both cases, there's no way that the semen donor, if he was the assailant or the semen depositor in both cases, could be a 2+, 1+, or a 2+1-. And what that says is that the semen donor has to be an ABO Type B, a PGM 2+, and a secretor or a-b+. On the other blood typing, which is on the chart, of Glyoxalase, the semen donor could be a 1, it could be a 2, or it could be a 2-1. There's no way scientifically for me to say that the semen donor is 100 percent a Glyoxalase 2-1 individual. There's no way I can do that. What I can say by interpretations, as well as visualization of the evidence and comparing the two cases is one conclusion, is that the semen donor is a B, a 2+, and a secretor.

A Glyoxalase I 2-1 blood type occurs in approximately 52 percent of the population of West Virginia. If the semen donor was a Glyoxalase 2, and that's the long word for GLO, if the semen donor was Glyoxalase 2, it would occur in approximately 20 percent of the population. If the semen donor was a 1, it would occur in approximately 28 percent of the population. So in essence, what I've done in the conclusion, without being able to 100 percent scientifically state that the semen donor is a Glyoxalase or a GLO Type 2-1 individual, is that you have given more of the benefit of the doubt to the individual that is Glyoxalase 2-1 because of the percentage, because 20 or 28 percent is quite a great difference than 51 or 52 percent. That basically is the interpretation of the results that I can explain by using the chart, Mr. Cummings.

Q Sergeant Zain, you have the figure up there that's -- I believe it's 6 out of every 10,000 --

A Yes, sir, that's correct.

Q -- persons have the same blood grouping -- or 6 out of every 10,000 males have the same four characteristic blood groupings as the defendant, Glen Woodall, is that correct?

A That's correct, sir.

Q Upon what did you base that?

A For every individual blood type, for example, an ABO blood type of an A occurs in approximately 43 percent of a given population. An O occurs in approximately 43 percent of a given population. AB occurs in approximately 11 percent of a given population. And an ABO Type AB individual occurs in approximately 3 percent of a given population. The same type of frequency breakdown can be said about PGM blood types. For example, a PGM Type 1+ occurs in approximately 40 percent of the population. A PGM Type 2+1- occurs in approximately 3 percent of a population. The same for a PGM Type 2+. For Glyoxalase or GLO Type I 2-1, as I stated earlier, we use a statistic that's 52 percent of a population could have a GLO Type 2-1. And as far as the Lewis blood typing, which designates whether a person is a secretor individual or not, 72 percent of a given population are classified as secretors, 22 percent are classified non-secretors, and 6 percent are classified as not being able to identify one way or another whether they're secretors or not.

Q In that 6 out of 10,000, does that include any age breakdowns or is that total population?

A Sir, that is based specifically just on male

population of Cabell County. That is the general population of the State transferred on down. It pretty much remains the same on down through the county, but it is specifically just for male population with no age breakdown.

Q So that would include any one year old or a 100 year old?

A Yes, sir, that's correct.

Q Does it take into any factors as to race?

A No, sir, it does not.

Q Could you tell from your examination what the race of the depositor was?

A The blood typing systems which we run, there are typings which can be done that can distinguish, say for example, between black populations and white populations, or black and Mediterranean type populations is more accurate, than Caucasian populations. There was no indication by any of the blood typings that they occurred from any other individual other than from a Caucasian race.

Q Do those figures take into account whether the person is bearded?

A No, sir.

Q Hair color?

A No, sir.

Q Whether they're circumcised or not?

A No, sir.

MR. SPURLOCK: Objection. He's leading the witness, Your Honor.

THE COURT: Overruled.

Q Have you taken any studies or referred to any studies done of the census figures for Cabell County, West Virginia?

A We do have a manual that was published by West Virginia University which was based on the 1980 census of the State of West Virginia.

Q And based upon --

MR. SPURLOCK: May we approach the bench, Your Honor?

THE COURT: Please.

Whereupon the following proceedings were had at the bench, out of the hearing of the jury:

MR. SPURLOCK: The defendant is going to object to this, Your Honor. It's a 1980 manual. It's seven years ago. Too old to be of any relevance to 1987, first of all. Second of all, the man did not author the manual and we would have to have it authenticated.

MR. CUMMINGS: Your Honor, as to what he has

referred to to make his studies and the basis of his opinions and reports, he can use to give these bases.

MR. SPURLOCK: May it please the Court, we have gone to great lengths not to object, to allow the State to go ahead with this kind of evidence because it's already been done by a chemist and so forth, but this getting into demographics is also outside the scope of this man's expertise. He's not a demographer.

THE COURT: In your opening statement you opened the door by referring to the fact you could line 170 men along the wall --

MR. HATCHER: 200.

THE COURT: I think it was 170 that you would line up along the wall here and that you could -- each one of them have this blood type. I believe you opened the door to this and I believe that the question of whether or not this is up-to-date can be gone into on cross-examination and is a question for the jury to determine. So I'm going to allow you to continue.

MR. SPURLOCK: Let the record reflect our objection, Your Honor.

Whereupon the following proceedings were had in the hearing of the jury, there being present the same parties as heretofore noted, including the defendant

and his counsel:

THE COURT: You may continue, counsel.

Q Have you determined, based upon that U. S. Census Bureau, census of 1980, the number of males in Cabell County between the ages of 25 and 34?

A The specific number, I don't recall specifically. As far as the age breakdown between 24 years old to 35 years of age, or something along this line, in Cabell County was around 50,000 people, to the best of my recollection.

Q Of that age of males?

A I don't recall.

MR. CUMMINGS: Your Honor, may I approach the witness and show him the statistical survey upon which he had referred to?

THE COURT: If it will refresh his recollection.

Q I would like to show you from the 1980 population housing characteristics for West Virginia, and ask if you would refresh your memory.

THE COURT: Please speak up, Mr. Cummings. The air conditioning is on and we need to hear you.

A Yes, Mr. Cummings, as I stated, I knew it was around 50,000 is the male population of Cabell County, more specifically 50,227 males in the '80 census

statistics from Cabell County.

Q Of those, based upon that figure of 6 in 10,000, how many would be the maximum that would have the same blood characteristics of Glen Woodall?

A Well, approximately 30 individuals if you're going with 6 people in 10,000, and you've got a little over 50,000 people, then it would be about 30 people in the county approximately, and that's 30 people that could have the same characteristics which I have previously spoken of.

Q In that same book on the next page is there a breakdown for the number of males age 25 to 34?

MR. SPURLOCK: May it please the Court, we will register another objection. Trooper Zain has already testified that his blood analysis cannot show age. Mr. Cummings is creating artificial age brackets that are not found in the testimony by this expert. We have no objection, Your Honor, if indeed, the blood groupings can show age. We say they cannot. Therefore, Mr. Cummings is attempting to narrow the number of possible donors by an artificial manner, which is not true, Judge.

MR. CUMMINGS: Your Honor, the testimony of other persons has been that the perpetrator is approximately

30 years of age. In order -- and that was from the testimony of Rebecca Mowery and Janet Johnson, that he was approximately 30 years of age, which is in the age group I am asking about to show the number of male persons that the 1980 census has in this county of that age.

MR. SPURLOCK: May it please the Court, my recollection of her testimony, that's not correct.

THE COURT: I also have the same recollection, and for that reason, I will sustain the objection.

Q Based upon your examination of the seminal fluids or the remains of seminal fluids and the blood of Rebecca Mowery, Janet Johnson, and Glen Woodall, can you express an opinion or likelihood of whether or not the same person is the perpetrator of this rape or these rapes?

A As I stated earlier, my opinion, based on the examination of the tests and interpretation of the results, which I drew on the chalkboard, I would 100 percent state that the semen donor would have to be a B type individual. The individual would have to be a PGM Type 2+ individual. And the individual would also have to be a secretor individual. As far as the Glyoxalase blood type or GLO I blood type, I would not conclude or

offer an opinion to any percentage of that other than that particular blood type occurs in a certain percentage of the general population of West Virginia, as well as other populations of the United States and any Caucasian population, but of the three out of the four, I would have to say that three of them 100 percent came from the semen donor.

MR. CUMMINGS: Thank you. No further questions of this witness.

THE COURT: You may inquire after a brief recess.

Ladies and gentlemen, we're going to take a recess of about ten minutes if you will recess cross the hall. We're going to take a break and bring you back in a few minutes.

The courtroom will remain seated while the jury recesses.

Whereupon a recess was taken, after which proceedings were resumed in the hearing of the jury as follows, there being present the same parties as heretofore noted, including the defendant and his counsel:

THE COURT: Let the record reflect the presence of the jury in the box, the prosecuting attorney, the defense attorney, and the defendant.

You may proceed, counsel.

CROSS-EXAMINATION

BY MR. SPURLOCK:

Q Sergeant Zain, do you remember the preliminary hearing in this case?

A Yes, sir, several of them.

Q Good. In that in response to a question I asked you concerning blood, I said, "You cannot testify with any degree of certainty that this defendant is the person that the blood came from?" Your response was, "I cannot say that a particular blood or body fluid 100 percent came from the individual." I said, "You cannot say this?" Your answer was, "No, sir." So I ask you again today, can you tell that that blood belongs to the defendant?

A Based on the blood characteristics?

Q No, sir, not based on blood characteristics. Can you state that that is Woodall's blood, please?

A It was marked as being taken from Mr. Woodall.

Q I'm talking about the bottom line conclusion of your testimony, based on all of your statistics, can you state that that is the blood of Glen Woodall?

A We're combining here. I think I'm answering

one question and you're asking another. As far as the specific specimen which I received from Mr. Woodall, I would say, yes, I could say it came from Mr. Woodall. As far as secretions --

Q That's not my question, Trooper Zain. My question is, is the blood found -- can you state that the blood found in these ladies in the semen is Glen Woodall's blood?

A Well, sir, there --

Q Yes or no, please?

A There was no blood found. As far as the secretions and the blood typings, I cannot 100 percent say that it came from Mr. Woodall.

Q Thank you. In other words, you cannot say that the blood that came from the fluids that came from the victims is Woodall's blood, can you? Yes or no?

A There again, there was no blood found in the fluids. The blood typings, as a general statement, you cannot say that a secretion containing blood typings could come from Mr. Woodall 100 percent.

Q Let me ask you another question. Concerning the Glyoxalase you've mentioned --

A Yes, sir.

Q -- can you determine from semen whether

you're dealing with a Glyoxalase 1, 2, 2-1?

A Yes, sir.

Q In the semen you examined what were you dealing with, please?

A In the blood characteristic which is on the chart that I identified was a Glyoxalase 2-1.

Q Thank you very much. Concerning the hair sample that you talked about, how many pieces of hair were there?

A From the vehicle or from the known blood specimen of Mr. Woodall?

Q From all of the above.

A There were --

MR. HATCHER: I don't think he can answer that properly, all of the above, from the vehicle, and how many were taken from his beard, one or the other. It can't be all of the above.

THE COURT: I think it is a multiple question. You'll have to --

MR. SPURLOCK: All right, Judge, I'll rephrase my question.

Q How many pieces of hair did you examine that your examination would indicate belonged to a perpetrator of the offense, whoever that might be?

A Out of the multiple hair specimens that were taken from the vehicle of Ms. Mowery, there was quite a large amount of variety of hair, head hair, pubic hair, et cetera. From those sweepings from Ms. Mowery's car, I identified one facial hair. As far as Mr. Woodall's known facial hair specimen, I believe there was somewhere in the proximity between 12 and 20 because that is what I had requested for comparison purposes.

Q From Ms. Mowery's vehicle there was one hair, was there not?

A There was one facial hair identified from the sweepings which contained numerous hairs.

Q This one facial hair which you're saying bears similar characteristics to Mr. Woodall's facial hair? Within the sweepings there was only one of those, wasn't there?

A There was only one that I identified, yes, sir.

Q Yes, sir. Is hair comparison a subjective examination, Trooper Zain?

A Subjective from which standpoint?

Q Can you state objectively that that hair sample belonged to Glen Woodall?

A I would say with the -- as I stated earlier,

in the opinion of the comparisons, based on the microscopic characteristics compared from the known beard hair of Mr. Woodall and the microscopic characteristics from the hair identified coming from Rebecca Mowery's vehicle, that the consistencies were 100 percent, and it is very highly likely that they came from the same individual.

Q But your answer is it was highly likely. You can't say it did, can you?

A There again, from the standpoint of scientifically stating from the characterization on the examination, I would say that there was nothing to show me in the examination that they originated from another individual.

Q Since you used one hair from the vehicle to link this hair to the defendant, can you state that it would be possible for one hair, this one hair, to fall within the range of characteristics exhibited by other individuals, please?

A Well, most hairs, whether it be head hair or pubic hair or facial hair or other body area hair, would still have the certain number of characteristics which we use for comparison. The point being is that under the 25 or more characteristics and components of

those characteristics which were compared, which are the routine comparisons, there was none found that were dissimilar from the hair from the vehicle and the known facial hair of Mr. Woodall.

Q Sergeant Zain, isn't it true that hair contains many ovoid bodies or few ovoid bodies or no ovoid bodies?

A That's possible --

Q So you're wishing this jury to believe.

MR. CUMMINGS: Objection, Your Honor. He asked a question and he didn't give him a chance to respond.

MR. SPURLOCK: He answered it. He said it's possible.

THE COURT: Overruled.

Q You're asking this jury to believe that based on one hair found in that vehicle, your comparison of that one hair to hair samples from the defendant, that it's the same hair, only one hair?

A I would say in my opinion that there was nothing to rule out that it could not have originated from the same individual.

Q But you're not saying it is the same individual and you cannot say that, can you?

A I could not say that, that's correct.

Q Thank you. Thank you. Have you, in your years of experience with hair, ever known hair to travel on people's clothing?

A There has been transfer of hair during the process of crimes and that's primarily what I deal with. As far as origin, I really couldn't say.

Q So you couldn't say where that hair that was found, one hair, facial hair that was found in Ms. Mowery's vehicle, you don't know where that came from, do you?

A As I stated earlier, no, sir.

Q You don't know whether it might have come from the mall on a person with hair similar to Glen Woodall, buying and selling at the mall, onto the clothing of the victim, and into the car, do you?

A As far as speculation, I guess that is possible.

Q Yes, sir. So your conclusion, once again, would be the same as it was in the preliminary hearing concerning the hair sample, is the best that I can say is that it was similar, is that right?

A Yes, sir, the best that I can say is it is similar, but that all characteristics were the same in comparison.

Q Concerning the item of facial hair you examined, how long was it, please?

A I do not recall specifically the length of the hair. I do not recall.

Q Thank you, Trooper Zain. Let's look at the bottom line figures there for a moment. You've testified that 6 in 10,000 males are represented in that sample. Don't you really mean 6 in 10,000 people, male and female, Sergeant Zain, based on the textbooks that you read?

A No, sir.

Q You're saying that is 6 out of 10,000 males?

A 6 out of 10,000 subtracting the female population, that's correct.

Q If you add the female population, what do you have, please?

A A little over .12, .13 in the State of West Virginia.

Q You're talking that percentage of a 10,000 sample in the State of West Virginia, are you not?

A I'm simply stating that the blood characteristics which were identified, in particular the ABO Type B, PGM Type 2+, GLO Type 2-1, and the individual being a secretor, and the percentage that

you would obtain from those blood characteristics, also taking away the female population or multiplied against the male population, which is 46 and 48 percent in this State, that 6 people in 10,000 could have those four characteristics.

Q Now, are we talking about 10,000 people or 10,000 males?

A We're talking about 10,000 males.

Q Yes, sir. Now, if you're dealing with a population of 50,000 people, you've already testified that you're dealing with 30 males?

A That's correct.

Q In you go to a population of 250,000, Sergeant Zain, how many males are you talking about, please?

A Whatever it would calculate out to be.

Q Can you calculate that out on the blackboard for the jury, please?

A I'll just calculate it out here. Approximately 750.

Q 750. So based on your calculations out of a sample of 250,000 people, there would be 750 possible people who match all of these 2+ 1's, 2+ minuses, and so forth, right?

A As far as the --

Q That you've linked into your final sample over there of 6 in 10,000?

A The four blood characteristics are specifically the blood characteristics of Mr. Woodall.

Q Yes, sir.

A Those same four blood characteristics, based on a general Caucasian population, would be the number which we just spoke of.

Q How many was that?

A 750.

Q 750?

A Yes, sir.

Q Yes, sir. Can you state, based upon your scientific analysis, Sergeant Zain, whether this blood came from a donor in Charleston, West Virginia? Do you know that?

A No, sir.

Q Do you know whether it came from a donor in Louisville, Kentucky?

A No, sir.

Q Do you know whether it came from a donor in Wayne, West Virginia?

A No, sir.

Q Do you know anything about a donor that might have had these same characteristics from Chesapeake, Ohio?

A No, sir.

Q Yet all these people would have access to the mall, would they not, Sergeant Zain?

A Very possible, yes, sir.

Q So then your sample of the 50,000 people that you've testified to is highly artificial concerning the road network, proximity to the mall of all these cities, isn't it?

A I wouldn't say fictitious. It is just a statistic for the particular district population of the 1980 census.

Q Of Cabell County?

A That's correct.

Q As a matter of fact, the census from which you testified, and Mr. Cummings so kindly provided you, was 1980, was it not?

A Yes, sir, that is the manual which I have.

Q How long ago was that, Sergeant Zain?

A Seven years ago.

Q Does that accurately reflect the population of Cabell County today, Sergeant Zain?

A Realistically, no, because the population of Cabell County is declining.

Q Yes, sir. Then your figures of 6 in 10,000 as relates to Cabell County and translated into 50,000 are not correct, are they?

A It would be less. It would be a lesser number of individuals.

Q Would it be more if you consider the tri-state area, Sergeant Zain?

A Of course.

Q Thank you. Let's assume arguendo, Sergeant Zain, that you do eliminate the Glyoxalase factors entirely from your results, can you calculate out what the percentages of the population would be in the 6 in 10,000? What happens then, please?

A It's approximately .2.

Q What does that represent in a population of 10,000?

A Two people in 1,000.

Q And in 10,000?

A Ten times that, 20.

Q You've testified, Sergeant Zain, that all of these factors led you to that conclusion. If you leave out any one of the elements, the ABO, the PGM, the GLO,

or the Le in coming up with these statistical analyses, you come up with different figures, don't you?

A Depending on each independent and separate blood type, there could be a different population distribution.

Q So your figures would be different, in other words? Statistics would change, wouldn't they?

A It's really not based on statistics as much as it's based on gene frequencies. Gene frequencies fluctuate very slightly in given populations. Statistics do fluctuate.

Q Aren't gene frequencies and gene statistics the same thing the bottom line? Aren't we playing semantics here together?

A Well, as a biologist, I look at gene frequencies as not being statistics, but as genetic characteristics and traits. Statistics is what we refer to as you gave the example, an increase or decline in the population of Cabell County.

Q When you use gene characteristics to produce probabilities, have you not used statistics, Sergeant Zain?

A You've used some type of statistical calculation.

Q Thank you. You've stated that the unknown hair found in Rebecca Mowery's car was similar to Glen's beard hair, have you not?

A Yes, sir, that's what I've stated.

Q You've also stated that the blood type as determined from the semen from Ms. Mowery is the same as Glen's blood type, have you not?

A I've stated that it was consistent with his blood typings.

Q So what you're saying is that an unknown hair taken from Rebecca Mowery's car and the blood type as determined from Rebecca Mowery probably belonged to the same person, did you not?

A I'm saying that they could have originated from the same individual.

Q Therefore, if Glen Woodall did not have a beard on January the 22nd, 1987, then the unknown hair, one hair, from Rebecca Mowery's car could not possibly belong to Glen Woodall, could it?

A I would say if an individual was clean shaven that they would not have been able to deposit the beard hair.

Q Yes, sir. And then the blood type as determined from Rebecca Mowery could not possibly be

Glen's blood, could it?

A The blood type -- if the individual was the same individual, if it were, the blood typings still, there again, would occur in the same amount of population.

Q What I'm asking you, Sergeant Zain, if Glen Woodall was clean shaven on January 22nd, and could not possibly have left that hair, and if you're saying the hair and the blood make this person similar to Glen Woodall, then it couldn't have been Glen Woodall, could it? Both cannot be true, in other words, Sergeant Zain? It's impossible, isn't it?

A I'm not drawing conclusions as to exactly who they may have come from. What I would do is go back to the scientific fact that the hair specimen was consistently the same as Mr. Woodall's. That the blood typing characteristics identified were the same as Mr. Woodall's. I would not -- and would not have any scientific basis to state that one or the other would have eliminated anybody.

Q Nor can you say one or the other would include anybody?

A Yes, one or the other, as far as statistics, would include in it the percentage of population we've

just gone over.

Q And --

A I do not represent exclusionary statistics. What this simply states as 6 in 10,000 is representative of excluding 99.94 percent of a given male population.

Q When we transfer that into numbers, we come up with -- depending on the sample we're dealing with, anywhere from 50 to 750 people in the tri-state area, don't we?

A It would consistently be the same for any given population, yes, sir.

MR. SPURLOCK: Thank you. You may inquire.

THE COURT: Your witness, counsel.

MR. CUMMINGS: No further questions.

THE COURT: You may step down.

(Witness excused)

Please return the exhibits to the court reporter.

MR. HATCHER: Could Mr. Cummings and I confer just a second, Your Honor, before we proceed?

(There was discussion between Mr. Cummings and Mr. Hatcher off the record and out of the hearing of the jury.)

Whereupon the following proceedings were had at