COURT OF PERUGIA
Assize Court
SEC. Hearing

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PRESIDENT Dr. Masseo

CRIMINAL PROCEDURE No. 8 / 2008 RG

AGAINST: **AMANDA MARIE KNOX + 1**

SITTING ON 22/05/2009 Classroom ____

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EXAMINATION OF WITNESS

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COURT OF PERUGIA

Assize Court

SEC. CRIMINAL hearing

President: Dr.Masseo

Assessors: Dr. CHRISTIAN

Prosecutor: Dr. COMFORTABLE

Prosecutor: Dr.Mignini

Registrar: Mrs. BERTINI

Technical Assistants: Ms. _____

Audience Hall 22/05/2009 _____

No criminal proceedings 8 / 08

AGAINST AMANDA MARIE KNOX + 1

At this point, the President shall be the Constitution Party as a report prepared by the clerk of the hearing.

EXAMINATION OF WITNESS:

PATRIZIA Stefanoni

THE HEADS, AMMONIA ACCORDING TO ART. 497 OF THE CODE OF CRIMINAL PROCEDURE, THE LAW OF RITUAL FORMULA.

GENERAL: Patrizia Stefanoni, born in Naples on 15 January 1968.The time now is technical director biologist at the main section of forensic genetic investigations of the Scientific Police Service of Rome.

PRESIDENT - The prosecutor can proceed to examine.

PROSECUTOR

Q. - Doctor, a preliminary report to the Court means what are your specific knowledge and skills, where he works, which feature covers of Scientific Police in Rome and then start from when she was named in this proceeding, the findings that has done, you go ahead in case the interrupt gradually.

ANSWER - Yes, in the course. As I have previously said the officer section of forensic genetic investigations of the Scientific Police Service of Rome, so I deal with the genetic analysis of forensic DNA analysis so that their object, say of interest, of course, the finds, tracks, samples

found on the crime scenes and confrontations, of course, victims, suspects, defendants, ie all those who for various reasons have to do with the judicial investigation that is delegated by the judicial service to our Scientific Police.

Q. - So you are a biologist?

ANSWER - I am a biologist, yes.

Q. - Before entering say an average of stress, so before you enter this specific investigation if he wants to tell in general what is the object of his analysis, what it means DNA, what ensures the DNA analysis, etc. ..

ANSWER - Yes Compared to this question I would have prepared for, attaching it to the presentation which will then be displayed on the analytical results obtained, let's say I avail myself of the presentation that is projected here to try to make it as easy, as comprehensively as possible ...

Q. - What will be telling.

REPLY - Those who will then say the analytical data of the concrete case, because of course I realize that of course the non-professionals are not aware of any technical procedure, that this analysis is of potential in the investigation and then try to judicial be as clear as possible, I have oversimplified the basic concepts of genetic investigation, this, of course, precisely the benefit of those who hear for the first time in forensic genetics, and so I hope that my attempt may also be useful for understanding better than the one which will be said later.

Q. - Okay, so we go, yes.

ANSWER - First I would just, well, some information about what is, how it fits in the analysis of biological investigation of Police, of course, this analysis is an investigative support to the activity itself, of course, through analysis, as I said before, the biological traces from various sources, then the crime scene, autopsy samples, comparisons of suspects - suspects and so on, and then using this activity we can pretty much achieve two objectives, firstly to provide an objective Authority which obviously follows the court case, statements, testimonies, all that can be back ... let's say, here, precisely in the investigation by an analysis that is objective by nature, and then

put this in relation to any particular individual whose DNA is identified with an object, a place, a specific person and so on, of course, because genetic testing has the objective of identifying the traces left in a particular place, then identify the person who left that say is the owner of the biological trace. What is a bit 'the general characteristic of this analysis in the forensic field? Because of course the DNA is analyzed from many points of view, also a physician - health care. The DNA test, just as it is written on the slide, it is useful precisely for identification purposes, as I said before, but only if one condition, that is if you can make a comparison, which means? That the analysis if a track does not involve the identification of unknown individuals, I find the analysis of DNA obviously the name of the person, is an analysis, is a technical, analytical data, which is a however, has value only if I have the same technical data of a person I want to compare, so if I have the DNA of a suspect I can compare this analysis carried out on the track and on the suspect with the same methods, using the same analytical means and say If the suspect is the owner, so to speak, or even track the suspect is not the owner of the track, as well as any other person, perhaps even the victim of aggression can be compared with a sampling carried out in a place and see If this sample is due to her or not. Also does not provide, this is obviously one of the limitations he has, facial features, that is, of course, our analysis, facial features say about possible types, I do not know, that this person has the look, so we can not trace through the analysis DNA, obviously in the forensic field, because everything is written in the DNA that we are, but in the forensic field, we can not go back of course, by a factor of privacy, the character of the subject, so we can not know if that individual is high, thin, has brown eyes, I do not know, has blonde hair, or if it is susceptible to some diseases in particular, if in place disease, so our analysis does not look at these data, however, in some cases right inscribed in our DNA, just after birth. Also gives no indication of time, ie we can not say with respect to a track or two tracks found on a crime scene, then two tracks very closely, or perhaps even distant, in two different places, we can not say if those two tracks were left at the same time, are the one after the other, have distinct origin in time, even several days, several months, we can not compare us this information in time, and ultimately, therefore, can not be established on the same scene crime,

then in the same analytical framework, it is not scientifically possible to establish a before and an after, then this analysis ties an individual to a place, then to an object, as I said before to a place, a room, a machine but not at the same time.What are the sources of biological samples? That is what we analyze, come from? First, where is this DNA, which is a biological molecule? It is located in the nucleus, so in an organelle, found in cells of different tissues, virtually all tissues except for one part of blood that, in fact, is the most important part of blood are red blood cells because the cells Red cells are also operating in all respects, however, in their differentiation process at some point the red blood cells lose this nucleus, no longer needs, this is one of the reasons why the red blood cells are renewed continuously, because can live long without the core, and then without DNA, however, apart from the red cells virtually every cell of our body, just with sperm from the seminal fluid, saliva with mucosal epithelial cells, the tissue in general, teeth, the white blood, white blood cells so that they are in the blood are useful for the extraction and analysis of DNA, and virtually all the cells of our bodies are designed to be a source of genetic analysis.Just a few words to understand a bit 'more of this molecule. Then the DNA in the cell is divided, so to speak, in 22 pairs of chromosomes that are sort of sticks, say filamentary structures, which of course you see in this box, this is artificially defined, is only in this way are very colorful , were artificially colored using cytochemical techniques, and DNA, as I said, in the nucleus of the cell is actually made up of 22 pairs of these chromosomes, the same two by two, plus a couple that are the chromosomes that determine sex, s and so we have a woman have two X chromosomes that are called and if a man we have a Y chromosome and one X chromosome Because 22 pairs?Because in reality that, say, is the key to understanding the origin of each of us, that each of these pairs, then each of these two chromosomes are inherited from father and mother in equal measure, so a pair contains one chromosome paternal chromosome and the other is the counterpart, ie equal say in form and function for the mother, and so on, so we are the product of 50% of our parents.What else can we enter in this slide? Apart from just then the structure of the chromosome that is as if unfolds in a continuous thread, and this then is exactly at the molecular level the DNA molecule, which is a long filamentous chains, we can say one

important thing: our analysis goes see some of these areas of DNA, so do not analyze all the DNA, it is impossible, we see several characteristic features of the DNA in every person, which now, in fact, I'll tell you something in a simplified but complete, I feel, and this general area gene locus is known, then the gene locus is any area in a first approximation we can say whatever area that interests us, so it's a point, a region of DNA. Some characteristics of DNA among other things I mentioned, is a biological molecule, and is present in identical form in all cells, so each of our cells has the same DNA, contains the molecular information to carry out all living processes of all organisms, each organism has its own particular and by which DNA is administered almost his life, his life, not exist in the world, at least so far, two individuals of the same DNA, except identical twins , then identical twins are indistinguishable by analysis of DNA, this DNA analysis, but in reality may be different with different analysis that does not fall within the forensic is inherited at conception from each parent in equal measure and then there is a feature that the Y chromosome, then one of two chromosomes of the pair that determines sex is transmitted unaltered, then as it is, from father to son throughout all generations, so every male individual in fact brings a little 'because her of her origin, Y is the same in the mother in his grandfather, in his great-grandfather and he will forward it to all his male children, for which he shares with his cousins, his uncles with for the father, then a feature is virtually unchanged, which is passed down the generations.We go a little 'more detail of what we do then practically in the laboratory, first when they arrive in our findings of biological laboratories must first be cataloged, that must be uniquely identifiable almost until the end of the processing steps, we have a computer system that is precisely LIMS The SQ, which stands for LIMS Laboratory Information Management System, and laboratory management system, then these findings as well cataloged, now we also see a sample, then undergo the first stage of processing, which consists of photographic documentation In addition to photographic documentation in addition you get to watch and see the exhibit traces useful for sampling, so the analysis, then we can determine, of course, on every track, if possible, the type of track, so if we a track-type saliva, blood, semen and even the nature of this track, the blood on the hair formations that are also

shared by animals, then we can also have traces of animal blood, it happens, but quite often we say ... , and also formations hair, because dogs and cats are the most ... those vendors say most normal biological findings that being of the animals living with humans, however, in an apartment, a car of the formations are found at that hair eye is not possible to determine in advance whether they are human or animal then analyze ...

Q. - It happened right in this survey?

ANSWER - It happened unfortunately in this case that a cat has made us mad because the first inspection, the inspection of the house on Via della Pergola, then the house where the corpse was found, unfortunately, we were seriously misled, fooled by the almost fact that a cat, apparently wounded, was introduced in the apartment downstairs to say the victim, apparently there were windows on the ground, which had been broken short products to enter the apartment, because they were not the keys I know, and then unfortunately this cat was injured and left blood everywhere, making us do a job ovviamo sampling crazy because we thought that someone had obviously do not know ... well, connected to the crime and then he had lost blood, but he was a cat, indeed. Subsequent to determining precisely the initial analysis done on these samples, the nature and type you have the initial treatment itself, which is the abstraction of DNA, that we must take the DNA and isolate it from all over the cellular context, because obviously we care only about the DNA does not affect all other components of the cell, above all the other pollutants that accompany our tracks, our tracks are of course taken from any surface that we can find, then a floor, a car, are inherently dirty, and are polluted by normal dust, dirt that is normal on both surfaces, and unfortunately also by microorganisms, so bacteria, yeasts, molds obviously begin the process of degradation of the track at the very moment of its formation, so we have to remove everything that does not apply, this extraction is done in a mechanized system using automated, for example, or in this cas, we used a bio - robots, in short, a machine called Zeta 1 and the company Qiagen, also once had our ... presumably because we can not see us, our DNA undergoes the next phase of analysis is the quantification, ie we determine if there is, and that amount of DNA we have in our tube, the DNA is virtually immersed in an aqueous solution, so it

is colorless, completely unidentifiable by eye, then we have the tools to see that we have concentrated, and then undergoes another process that then we will see a little 'in more detail which is called amplification, that is, are we to make of copies of the DNA of interest because it is virtually a situation of extreme scarcity of DNA, the track can also be quantitatively very small, so we have these resources that allow us to increase the number of copies of what interests us, and finally the race Electrophoretic analysis that is another time then you need to have a pretty view of the deferred ro genetic profile, then you have, in fact, reading the results that are determined by this electrophoresis and then determine if we were lucky, the profile genetic, because we might not have found DNA that track and then virtually the analysis has not led to results.We go a little 'more detail of what happens in the lab, I was talking about the system of cataloging artifacts and traces of the course is related to them, then we have labels that are printed almost exactly by the soft ware management, the LIMS cataloging cases, that is, everything about a case, a criminal procedure is computationally defined as a label file, so you see a number, there is a bar code and this is all that we denote by the laboratory that criminal proceedings, so is the identifier of the case, then we have the label of the specimen, ie in this case, to this matter are associated with different findings, this association is given by the same file number and serial number by which we we catalog the various findings, then 1, 2, 3 and so on, for example is the finding that 17, and each number is associated with finding a minimal verbal description of course, by finding the words of what is, for example, this is a yellow pair of slippers, each artifact, then follow the traces related to the finding, again, maybe just do not see them in a defined, but they are reported, as well as bar code, followed by the same numbers 01, 02, 03 , because they identify the various tracks, so we have a system which combines the case, the findings of the case and tracks for each specimen.

Q. - So, doctor excuse, let's take a practical example, the identifier, the label identifying the case in our case, excuse the pun, is the murder of Meredith Kercher.

ANSWER - Meredith Kercher's murder has an identifier, then we will see on the photos, I have wanted to put in a general way.

Q. - Yes, yes, but now we exemplify so to speak.

REPLY - OK, the file number, our dossier Meredith Kercher is 28-669, so should be pretty much written here, then we have all the 228 exhibits.

Q. - So, for example finding sweatshirt with blood stains.

ANSWER - Yes, the number will then, if I'm not mistaken, 171 is really a relic sweatshirt.

Q. - But let's say it's just the 17 is there.

ANSWER - Yes, this is the finding here, while the traces on the latest findings are progressive, so there are five, are ten ...

QUESTION - blood stain on the shoulder, blood stain ...

ANSWER - That's right.

Q. - These are the different tracks?

ANSWER - Yes of course ... then do not track the precise point where they are sampled is not inserted because it does not fit the label that we see, however, there is an association visual cataloging I repeat, I remind you is a photograph of findings when I say that finding 17 and track 1 is on the heel ... these being on the left heel slippers, so I I've got the letter A, B, C that I put into finding the exact spot where I will sample, and then Then later there is an association that can be done in a very simple, very obvious between the track 1, which I call A in the photo, which I call B track 2, track 3 I call C and so on.

Q. - Lightest.

PRESIDENT - To better analyze this aspect that we put these labels and when?

ANSWER - The generally puts the officer, so in this case I, when the case comes to me I must be assigned to catalog with course ...

PRESIDENT - In the lab?

RESPONSE - In the laboratory, and assisted by associates do the photographic documentation of all findings, so each piece and then I decide where to sample, according to a criterion of course, a knowledge, a skill in short, I hope, specific. We go into detail without getting too technical specifically, the various stages of processing of information by saying just a flash, then pull out,

I've mentioned before, the means to extract DNA from the cellular context, and membranes, proteins, organelles, all that interest and not from any kind of contaminant present in the trace, because this would give us much trouble in the subsequent analysis, so even a coloring agent, for example a garment is colored, it gives us many problems, so it must be absolutely eliminated, or a mild, short the thing that is foreign, then I told you we quantify, so knowing the amount of DNA extracted from the track, then amplified, and now we'll see a little 'of this process in more detail, in correspondence of these areas interest you I mentioned earlier, the genetic locus as an example that we saw on the previous slide, previous slide somewhere, and this technique, this procedure allows you to amplify and then see these items in a specific way is a genetic process called PCR, we'll see after the One moment in more detail.

Q. - Doctor for interrupting a second, given that the term contamination, contamination, contaminating, say, is the magic word in this process, we want to define what you mean by a contaminant in this case?

ANSWER - In this case the contaminant is anything that does not interest me, is a detergent, soap, detergent, a bacteria, a mold.

QUESTION - Can be another track human?

ANSWER - No, no, no, this is not a contaminant, is anything that I do not care for the analysis and that bothers me, so I can eliminate using the chemical extraction process, having been too mechanized, robotic so also quite effective, after which the amplified DNA, precisely through this process of PCR is subjected to an analytical method, I have mentioned before, capillary electrophoresis, the term means, that the term simply means a movement of charges in an electric field, so it's pretty simple from the theoretical point of view, then deploy and machinery rather complex, and this then allows the machine to see, so to speak, the genetic profile, because we so far we've never seen This extracted DNA, we are going to trust, and the genetic profile that is transmitted by the software that processes the data is transmitted in the form of fluorescence peaks, so we have some signals that are the peaks of fluorescence of different colors, which we shall soon see. Let's see 'as PCR, which is a little' heart of the analysis, because without it there

would have prevailed in the analysis that we perform. What do you copy? Because in the end is a process of copying what you have. Photocopy is 16 points of the DNA present on both pairs, each of the two chromosomes in a pair, so they are actually 32 points, each variation in the population includes many, many variations, and this is the basis on which the ' identification, the combination of these many variations in each individual is unique and therefore allows, in fact, be identified, each of us is like a kind of tax code, so each of us He's got some combination of these variants are in fact the expression his paternal and maternal inheritance, except, of course, as I said earlier in identical twins. These regions of DNA, but that, say, just remember it as a term but not completely enter into the details of what it means, are called STR Short Tandem Repeats, short fragments of DNA are repeated, but this is of little interest, and are called by means of alphanumeric symbols, for example, we TPOX, D3, FGA and so on, so that these points are that we analyze at the end of the acronyms, we call them with initials. Why do I need to photocopy the DNA? I've already said before in part. Because the amount of normal DNA that we analyze, we have is very, very small, as is reported here is the order of a few tens of billionths of a gram, which is a measure which we express as a nanogram, then is a billionth of a gram, so you can see the genetic profile of course, just making copies of these regions, moreover, when I say that from our analysis we quantify the overall quality of the DNA that actually the vast majority we do not analyze, because it does not, so we pretty much billionth of a gram of this will look less than 0.1%, so a small amount really say in terms of weight, which is a unit that we used to think, we really just a look small part of the whole entire molecule. We see a little more detail in the PCR, that just means, again as an English acronym, polymerase chain reaction, Poliymerase chain reaction, the polymerase is the enzyme, the heart of the relationship, that we put an X of various chemicals, including a protein that acts just like saying ... to a worker, is that this amplification is materially aided by various molecular substances. Let's see in detail just how this multiplication as it happens. Suppose you have this gene locus, TPOX, is one of several loci that we have, what happens? Using a thermal process these two helices, because we have to imagine that this is the DNA helix and then the two strips are close together, these two helices come off because the heat

makes them space, at one point to each of the two propellers, a little bit at the end of each of the two sticks to another molecule that does just see, it look as if they were precisely the region that interests him, from the chemical point of view it does so without going into detail is a something that these two molecules to implement practically see each other, see each other after you see the enzyme, the polymerase precisely what it does? He sees this molecule, see what is written on this piece and it does exactly the sister molecule, then we recreate ourselves through this process two molecules of this molecule identical to this, it is said that there is a bit 'simpler than that happens in practice but conceptually this is so, then we will have two from a molecule, the process begins again, each of these two pieces of propeller falls off, you have a photocopy, so to speak and then by each of these two do it , always identical to the initial one, and so on. What happens? Perhaps you see little. This is almost a scale amplification of the whole process that we carry, so there is an increase exponentially with each cycle the number of copies of each of these points, I remind you we have 16 different on each of the two chromosomes of the pair, the 28th cycle, which is where we make the reaction take place because the kits that we use is calibrated for maximum goodness of the result at 28 cycles, we have almost 67 million copies for each point of the target DNA, then each point initially had virtually no say 1, but a few words, because every cell He's got the same DNA, so we have a few of these loci of each type, after 28 cycles we have 67 million copies. Because 16 loci? Here we go a little 'own analysis in detail. Slowly we see this slide, we have a track blood at the crime scene, this track is analyzed blood and this is the partial result that we have, in part for reasons of space, because otherwise it would be 16 pairs - continues here in reality - as I said that we analyze these loci are acronyms, are denoted by acronyms, so TH01, VWE, TPOX, FGA and so on, each of these features so it is inscribed in the DNA of this track, as it is inscribed? By a pair of numbers, for every point us in the end we have a pair of numbers in practice, just the ones you see, so it can be 6-8, 16-19 may be, may be 8-8, and so on, these numbers can be either equal to differ. Consider two people, a suspect and a suspect 2 1, these guys obviously have their own DNA, analyze the DNA of the two men separately, if we analyze this DNA only example in these three points I scored with the colored

bars would not only indistinguishable from each other, because this man has the TH01 6-8 and also this man has the 6-8 TH01, TPOX on this gentleman is 8-8 and also the prime suspect He's got 2 8-8 , and likewise for the FGA, so we would not know not only who is the lord of the two ladies 1 and 2 but would also be indistinguishable from the track, the track also has the same numbers at the same points, that is absolutely not a anomaly, even many of us surely share some of this information, however, what happens? If we analyze other parts of the suspect suspected 1 and 2, of its DNA start to differentiate these people, then we see that the suspect has the VWE 1 in 16-19, 17-18 in D3, and so on, while the suspect 2 has 17-18, 15-17, then between the two for pure numerical comparison we further say that in fact the track blood, who released the track blood can not be 2 because the suspect in some places the track and the The suspect's DNA 2 are different, so 17-18 is different than 16-19, whereas this is the same in this gentleman, 1 suspect, and so on, if you see, all other points, so in this way we can associate a track to a person, these points are more numerous, in fact, excuse the pun on words, we are more confident in our analysis, in the goodness of our results, we see more because the more points we can say that this differentiation is not only consistent but it is also an association track - good suspect, because I analyze a lot of points.In fact all the possible variations that I can have in each of those points of the DNA are represented in this graph, this is a graph, say almost the summary of all points that or I have, all the variants that I can have, so for example at this locus, you do not see it, the D8, we have the possible numbers ranging from 8 to 19, in that case, the Q7, we have points ranging from 8 to 15 and so away, so these are all possible variants more common in the world's population, so is the association of these numbers, so to speak, so the combination of these numbers for each locus gives the complete genetic profile, so each individual, as reported here, in their genetic profile has at least one of these peaks of fluorescence, which means at least one?If I have two identical, then 8-8, you remember the first TPOX was 8-8, I do not see two peaks, superimposed I see 1, 8, and then almost a peak superimposed on a peak equal to 8, so in reality I see one but there are two, however, because it comes from a father and a mother in this case coincide, so they are equal. So each of the peaks is a feature of the DNA at that point and

therefore is called allele, then one of the names by which you will hear in the discussion might call these peaks is allele, is one of the names that will surely hear, then this allele, these variants are present with some frequency in the population, so I can have brown eyes share them with almost all maybe do not know, in Campania, or Italy, while a person who may have gray eyes is very rare, so the shares this feature with a very small number of people, so this feature is very identifiable, in fact you remember the DNA analysis, this analysis does not see the features of somatic say, I will simply give an example very understandable, very common in our experience, so it's as if we analyze all these features to see which are very common, but also which are very unique individual, in order to identify it. This is actually just one of the possible genetic profiles that are out of the car, so this is a track, a track of an individual, of course there are all the peaks as you see first, but there are for each point of these two or one, precisely because one is of paternal origin and one is of maternal origin, obviously this is the same plot in tabular form, so I put all the letters here, so to speak, with their values, then the D8 c ' was 13-15, the D21 is 32.2-33.2, and so on. What is there to see? It should be noted that these graphs have certain features, for example have a height of the peaks varies from point to point, this height is expressed in arbitrary units say, put the car in units of fluorescence relative, that is to say that first approximation is the highest peak over there starting DNA, is not really very accurate but it is a good approximation. Then what else can we see? That this individual is definitely male because He's got an X and a Y, you see these two alleles are the X and Y, and then another thing, each of these pairs of peaks have roughly more or less height similar to decreases, then becomes smaller going from left to right, then we say it is as if the peaks that are here are more DNA, so to speak, the peaks that are near the end have a little 'less DNA , so these are the general characteristics of these genetic profiles as well as giving them the car, so we have the peaks of fluorescence of different colors, but colors are arbitrarily made by the software that sees virtually fluorochrome, in short, is a somewhat 'particular is not that DNA is really course of this color, so they are the peaks of fluorescence data as a signal to the machine, the machine picks up and records them in the form of this graph.What is the value of identification of the genetic profile? A genetic profile,

namely that you have seen before, so 16 points gene, which would be 15 pairs plus the sex, it's almost more of an individual multi-billion, which means? What if I wanted to find the same individual in the entire world population I do not find it because I should have a value of almost a billion billion such people, one million of billions, then if I had a population so large I could have the chance of find another person like this, of course, is a concept ... I always get a little 'how to say ... at face value because it is a statistical frequency of these alleles precisely as I said before that rare, less rare in the population, then is too detailed to do a speech, but this is the identifier value, almost a full profile has the ability to identify an individual of several billion people, of course we do not always this lucky, we have also the case in which there are all The amplified gene 16 points, so we do not see all 15 pairs plus the sex, but maybe just see some of these couples, why?Because nearly two things can happen, or the DNA is too small in quantity that is a random process as that which the enzyme is in his swim in the tube fragments to amplify that interest, perhaps not find them because they are too few, therefore do not meet, or because unfortunately the DNA is damaged by external aggressions, then too hot, bacterial contamination immediately begin to cut into their own DNA, so if we do not have those fragments, the propeller say at that point you can not integrate make a photocopy, so there are holes, so there are profiles of those who are partial, that we might, as in this case, all alleles for example, then all the peaks in the blue green and maybe there is missing someone, we lack these couples, we do not have this other couple, maybe someone else here is missing there, and so on, but you always say that I have mentioned before or not the rarity of the alleles in the population, then these characteristics gene in the population we can be fairly confident that over the 11, 12 pairs of these alleles, however, there may be a good degree of identification, would depend on their DNA that we have, if we beaks feature very rare in the population level identification is raised of course, if I find that an allele at a locus is rare, for example, that might lead to the famous gray eyes I feel very confident in identifying and then attributing that track an individual partial because that is a rare feature, so it depends a little 'and the data you have, so you can not determine in advance so we say so dry, however, say most frequently or almost always, at least in my case, what I saw in My job, above

the 11, 12 loci is possible to have absolutely no margin for identification of uncertainties. Come on in an analysis a little 'more complex. This is a genetic profile belongs to more than one individual, then as we said before DNA each of us has it in his genes, however, it is possible that a crime scene, for whatever reason or on the clothing of a victim there are two superimposed traces of DNA, for example, two traces of blood, what happens? That the two DNA are mixed, I can not tell them in advance because I do not see the master cell of the cell X and Y of the other ladies, so I can pretty easily do the analysis and eventually realize that actually that track gene is composed of the superposition of two people, for example, or even three, four, in that case the analysis of the data becomes much more complicated, though, let's say, more commonly have this type of situation, for example in the violence sex is very common in the vaginal swab that is often the victim is obviously the DNA because it is extracted from the vaginal cells, and then also the DNA, perhaps in nature sperm, then from the seminal fluid of the aggressor.From what we can understand? Of course we understand by looking at the graph, because this is the end result that we look, we see a particular thing, of course, each of these points genetic He's got these gray rectangles in some cases more than two peaks of fluorescence, here we have three, 3 Here we, here we have four, youngest, and then, you see, here too because it obviously means that the two two people have the same genetic characteristics in those spots, as our two suspects a few slides ago had some points gene in common, there 'is nothing strange, as we understand it well that it is a mixture, in this case a male and a female? By the pair of sex chromosomes, if they were two girls we should not have the Y, that is here will appear in this position, if they were two males, because it is possible in a scuffle in a stabbing mixes the blood of two people, we Y we have the more or less the same height as the X, because, I repeat, as I said earlier, the alleles in each genetic locus have roughly the same height, so as part of the same genetic locus as an imbalance this makes us strongly suspect, as well as all alleles in multiple loci that we find ourselves in, makes us strongly suspect that this is a mixture of male - female. Also because they are so unbalanced? First look at this chart from another point of view, we can also have, of course we do not know a priori, two people ... that is composed of two DNA traces in a quantitatively

different, maybe a lost a little drops of blood and the other went over the finish a gocciona of blood, then a larger amount of DNA, this is seen in this graph, in which case how do I watch? I see this report first and then I see the imbalance of loci that have the greatest possible number of alleles, so in this case I will have four peaks of fluorescence then, here I have four, so I am confident in saying that two belong to a individual and two belong to another individual, in this case it is a mixed genetic profile rather balanced, because I see that ... apart from that fact is a mixture of male - female because we said there is Y, then the loci four peaks which are practically more or less the same height, who have three means that a peak, for example this, 10 that you do not read, this peak here green, it is almost a superposition of two peaks, one which was of one person and one who was the other person, that has a greater height, and so on. So you see the relationship between the amount roughly two profiles looking at these features. What can we say? This is just like that, just to give you an idea, hopefully, more precise than this speech. If I am I've got a dose of female DNA, then X - X, and a dose of male DNA, I have a 1 to 1 of DNA, for example I have 100 cells and 100 cells masculine females, so to speak, the relationship However, the X and the Y that I see, that here, of course, takes into account all the X's total and total of all the Y, so in reality a dose of X and Y gives a dose of three doses of X and a dose Y, which is precisely what we notice in this case, that is, X is three times higher than the Y, this means that this report, you say weight DNA of two individuals is very balanced, but if we had a relationship more unbalanced, that is, an individual has more DNA of the person we have, for example two doses of X, then a dose of female, and a dose of man, we would have a ratio of 2 to 1 DNA, we see this as the graph? Because seeing the number of peak height, so the number of fluorescence on, we see a ratio of 5 to 1, we can divide the height and the height of the X and Y to see what is the relationship that comes out, because both the Y has it only the male, the female does not help then to have this type of Y chromosome, because the signal is always a mix in a male - female, while that which is the ratio varies in the X relation to the DNA that belongs to the female, for it is He's got two X compared to the male who has one, so in reality, this concluding part, whether high, then the peak RFU X for example is 900 and so that the Y is 100 this does not

mean that the quantitative relationship between the two DNA is 9 to 1, as one would tend to think, but is 4 to 1 in this case because we are here, then four doses of X plus a dose of Y we have a ratio of 4 to 1, the total X in this case 9, the Y is. I hope that was clear enough. Then we move to the Y chromosome that is also a means of DNA analysis rather important. In addition to examining the full profile, we can analyze specifically the peaks, so to speak, so these STR mentioned earlier, which are specific to the Y chromosome, that we can perform all the analysis that we normally do throughout the total DNA of a focusing only person sull'Y, then we can do this analysis, the only male DNA, of course, because women lack the Y-DNA, so what is the characteristic Y? It is the sole source of male DNA, it is shared, as I have said before, all the descendants of a family for his father's side, contains within regions of DNA, then the loci that are analyzed using the same techniques with which the complete DNA is analyzed by the same pro priority mode, and PCR, there is a specific PCR, capillary electrophoresis is basically the same and then went on the genetic profile, what time will show.What this analysis allows us to do to us mainly in forensic genetics? Actually allows you to do other things we say in other areas, however, allows this analysis in forensic genetics to identify the male DNA mixed into a track and characterize it precisely, so we mixed all that we had initially here we no longer see all these peaks, three peaks here, four peaks here, we see only the male side, then the female part is completely ignored, so in this case a mixed track resulting from a man and a woman ... this is only the male DNA analysis shows . What is the profile that comes out? You see, a profile is much simpler than the previous one because each of these rectangles, which are the genetic loci that we analyze, there is only one peak, because we analyze only the male part, regarded this as pretty much a duplicate locus, ie a part that is repeated almost as though elsewhere the Y size say falls into that size range, then consider this as another gene locus, even if it falls almost in the same rectangle, here, so we basically in this case , in tabular form, so I summarized all the points that we see, the gray rectangles in these yellow writing, and are summarized all the numbers, here are some numbers that these alleles have a name pretty much like the previous one, and these numbers allow us to highlight just a particular profile of the 'Y, in particular genetic profile is

called the Y haplotype, this is a name that maybe you will feel but is virtually the equivalent of the genetic profile of the Y, allele, which is that word I'm saying for a while ', say as a simplified definition, is the generic name used to describe each of the different peaks of fluorescence present at each point in the gene that we have genetic profile of both total DNA and DNA of both' Y, then Y also has alleles that are naturally different, and is synonymous with allele peak fluorescence, so we say or say or allele peak fluorescence mean the same thing in this context.Basically this part, which is introductory, it's over in the sense that I wanted, and I hope to be successful, because the argument is quite complicated, to give you some ideas, some information, to enable you to understand terms that are also quite unusual , which you probably never heard if not precisely in the forensic field to understand how it performs, it involves the genetic analysis, is obviously a very simplified discussion but I think what I did not have, say, nothing to sacrifice scientific accuracy .

Q. - Doctor, excuse me, at the end of this show before moving on to the general survey believed to be the case now to speak, but just a moment, kits that are used for this analysis, what kind of kit, as tested, certificates, etc.., as she believes.

ANSWER - Yes, yes, so then we close the discussion.

Q. - We close the presentation speech.

ANSWER - Let's go back a while back just to be away ... then pretty much as I have said these PCR reactions, these tests are not done by hand, so in our laboratory or in any other laboratory are performed using three basic diagnostic kits that are equal in all the world because they are virtually sold by multinational corporations that compete for the market in a more or less ... basically there is a specific kit, so its like saying ... we have the ingredients, put them together according to the company supplying the kit, we put them together in a tube in precise quantities, like a cake, all the ingredients are put into a test tube and the reaction is done according to standard procedures of course, always applied in every laboratory of forensic genetics, of course, these kits are not commercially available kits on sale well, that comes from the first, are the kits that have been subjected to very strict controls, so I'm kits validated internationally, what does

this mean? If I do that here in Rome with an analysis of the DNA kits, another colleague of mine, for example, do not know, or Nairobi or in Australia, I do not know, the Arctic Circle where he needs to have the same kit exactly the same result that I had the same DNA using, using the same assay conditions, so it is possible that the same DNA, using the same kit, can give a result of different genetic to me that I have worked in Rome and perhaps the U.S. or Australian colleague who has worked in his laboratory, in this case we have used to analyze the total DNA, 15 points more than the sex, we used the same kit that a company that is the Applera, then s' Applied Biosystems, a kit called Indentifiler, while for the analysis of the Y chromosome of course we used another kit, because we see different things, different chemical reagents are needed specifically to analyze only the Y, is another kit called Filer Way, also produced by the same manufacturer, which is precisely the Applied Biosystems, so these procedures, not only the kit but also the analytical procedures are virtually the internationally validated and published now for many, many years of several international journals in the field.I think there is nothing on the kit. Of course, even the machines used machines are now ubiquitous, however, that are of last generation and are widespread in all the most modern laboratories say that are present at the international level, because of course these tests are pretty much being produced by multinational spread ...

Q. - At the global level.

ANSWER - Yes, worldwide, there is no company in the country, and thus, practically, are two companies, we have used it only for the kit and also with regard to instrumentation and roughly, especially for electrophoresis capillary is always a machine, the 3130, which is produced by the same manufacturer of the kit and even that is pretty common use worldwide, the most innovative in other words, here, that we have available to date.

Q. - Let's start when he got the call.

ANSWER - Basically, the Scientific Police Service Friday, November 2, in the early afternoon, shortly after the lunch break, has just received a message that we needed support from our central office at the Office of Scientific Police of Perugia because there was a corpse that was obviously

was murdered, so that a natural death, in fact, needed a technical inspection, and in this case, as in other cases, provincial or regional toilets, say on the whole national territory, may, if they consider useful to say, ask for support their technical, operational from the central fact of which we form part, and then went two different teams, one a little 'and my first a little' after dealing with different aspects of the technical inspection, in fact my colleague, Dr. Board is the officer who deals with the detection of latent fingerprints papillary and I, who just happens to be an official of biology do I deal with the technical inspection specifically biological, because of course everyone is responsible for a technical aspect, and especially since the visits of the biological or papillary impressions are very particular, so far as to say ... based on sound knowledge and must also require specially trained technical staff, so everyone went to work on the part of its remit.After that we then come, then you will see, I have prepared some slides that are specific to this survey, we came, in fact, initially as already said here, the house on Via Della Pergola around at 19.00 - 20.00, 19.00 of which perhaps the most evenings and 20:00 we started our activities. Here at the outset to virtually everything you said there will be a little 'the history of what was, in a very concise say what were the main activities have focused around the case, then the analysis from the point of view only of the DNA, in some cases overlaps then, of course, other types of visits, such as the fact that latent prints made by an inspection, in fact, He's got many faces, so here I am speaking specifically of things about me but in some cases, then, these coincide with those that have happened, say in terms of time, even for latent prints. So to start their own list, is a mere list of what are the facts, there is the first technical inspection carried out on Via Della Pergola in Perugia 7 which is the site of the discovery of the victim, and as for the part This purely biological survey lasted 2 to 4 November night with breaks of course.On November 12 we started the technical assessments and then we have given notice to the parties on that date because it was already present say the suspects, so we had to give, of course, as the Code of Criminal Procedure, the start of operations laboratory, which, of course, attended by consultants, lawyers, which are reported in the minutes. Then there was a technical inspection of the property sull'autovettura Audi A3 Mr. Raffaele Sollecito on November 13, 2007 which was

kept at the police station in Perugia. Then there was another survey in Corso Garibaldi, 110 in use in the home to Mr. Raffaele Sollecito on November 13, 2007. The next day there was a technical inspection in via Alessi Le Chic at the local Mr. Lumumba, and was held on November 14, 2007. On November 15th at our laboratories there was the call on my part of the expert witnesses, Nov. 15, to show them some analytical results obtained to date, so we had the first results and November 15 were summoned if they had, in fact, need to access them. Also on November 20 was held then the technical inspection in Via Del Canerino, 26 in Perugia at the studio, the house used Rudy Hermann Guede to Mr.. On the 22 November there was an additional laboratory operations begin, of course, prior notice to the parties, of course, you guessed it ... maybe the beginning of operations that each of you of course included a small part compared to everything we say all'ingente quantity of finds that in the end we have analyzed, so each time we decided to analyze some of the findings from inspections carried out or prevented them from time to time, or operations related to the exhibits taken from the first survey, those of the victim's home, which had been agreed a little 'with the judiciary and a little' with the Flying Squad in Perugia, say, giving priority to one or other investigative findings according to the ideas that were at the time, so maybe it was decided first to analyze a thing and then another in relation to this investigation needs. On 27 November, continued operations in the beginning, just started on November 22, there was another beginning December 10, 2007 and its continuation of the beginning dated December 14, 2007. There was then another, then a second site inspection on December 18, 2007 at the home where the victim was found, compared to this survey there was also the beginning of laboratory operations on December 21, 2007. On December 27, 2007 have been shown to expert witnesses some of the results obtained to date, and so on January 10, 2008 have shown some results on that date. Other results were shown on January 23, 2008 and on January 25, only the professor Pascali, contacting me, asked politely if he could access the office because he was not able to come on January 23 and then to see some test results obtained on that date . To ... we are approaching the end, February 21, 2008 there was another early laboratory operations and so on April 21 and continued on April 27, 2008, all ended with the capture of vision results by the

technical consultants on 20 May 2008 and then I gave the technical report, thus for all analytical results obtained on specimens analyzed, dated June 12, 2008, which is then filed with the Public Ministry.

Let's now a bit '... first some say' in general and then a little 'in particular as regards our survey, say some basics for what concerns the biological testing of the crime scene, then the general rules that we we adopt when we analyze a crime scene, whatever it is, then an apartment, a car, even outdoors can be made an inspection. First you have to operate according to the selection criteria for research and repertoire of tracks, from any survey that you can never, unless it is really a special case (inc.) as a crime scene, you can never remove all because otherwise we should dismantle the houses, we almost empty rooms, and we should bring all analysis that would cost both in economic terms, both in time something unimaginable, then, practically, we apply the selection criteria through experience, in particular, but even just a good sense of the operator, then an inspection, but rather complex, as often happens, we must first choose the type of tracks to be sampled, then the first, of course, give priority to visual ones, to those obvious and then gets a choice whether or not to try to reveal the biological traces latent, especially, in particular, the latent traces of blood, also must also choose to have the substrate on which the track, that there are difficult materials analysis problems that give then in the laboratory For example if we have a trace of asphalt, except that it is very impractical, but it is what comes out of the block of asphalt or a track on the wall take the piece of wall, so let's take, even finding a very cumbersome, as can be, I do not know, there is a door or a car bumper, try to have a substrate of us comfortable, as it may be small pieces of tissue paper, that is unique paper that is used in the laboratory to collect the much as possible the material from these substrates, then, of course, there is also the choice of the amplitude of the substrate, is obviously no point in using a sheet of paper of considerable dimensions, the track is better to have more intimate as possible on a small piece in the so then in the laboratory to have a better chance of analysis and then to focus as much as possible the traces in the tube because the tube is an object very small, very small, we can not put in an enormous amount of track, we can put a track that can be at most a few square centimeter of surface area, so

we have a very substrate harvest, then the number is important, obviously if we have the drips of blood is useless to collect dripping dripping, of course if they are visually and the logic of the tracks from the same source, because they are the drops that are perhaps in the same direction, we try to sample a reasonable number, but we say, here's a random fact, so by taking some and leaving others, in addition we also have a choice making with regard to the amount of trace homogeneous, it is useless to pick a number too large, a ditch of blood that is not all excised because it is absolutely useless, but we must also be careful not to remove too little because, of course, we at priori we can not know what DNA is inside, I told you that the blood, which is the most commonly found at crime scenes and even more striking, the blood may hold some nasty surprises because as I said the red color is given by the red blood cells contain no nucleus, so we still need to have an adequate amount because we take the white blood cells that are thousands of times smaller quantity of red blood cells, and also extended by a possibly we may have the unpleasant surprise of not finding nothing, and then maybe a track very, very small then we may be lucky enough to find much material of DNA, also depends on how it was preserved, if it has been in the sun for so long trail of blood as it is possible that large however, give poor results, though this was in a wet environment, for example, do not know, a towel soaked in blood, left there for a few hours unfortunately favors the wet microbial proliferation, so this may promote the degradation of DNA, of course must also be very attentive to form, thus the morphological aspect because there are the famous sketches of blood that can give very useful information, not to me in particular that I am a biologist, however, must be picked up video devices - photos, or even with special equipment that is the Sferon so if you need that obviously, if it sees fit, then you can perform specific analysis, in particular a specific analysis, Bloodstain Pattern Analysis, which is the BPA that allows you to see practically, to provide for, behold, most do, to predict the angle at which these sketches were produced and then make a rough reconstruction, but still accurate, the position from which they started these splashes of blood.In addition, a fundamental course of the inspection is to proceed by the attention and caution that allow the maximum possible conservation of the crime scene, of course you must avoid any kind of ... how to say any

procedure, any rough handling of things that can cross contamination, so what does this mean? Whether the operator has to protect himself from possible contamination of a naturally infected with something that can be blood, body fluids can obviously all vehicular pathogens, but must be careful not to contaminate himself with his findings and possible DNA traces, and for this purpose use of personal protection are gloves, boots, masks, to prevent any exchange between him and the environment, of course, must also avoid the artifacts contaminate each other, and therefore that we adopt the procedure that each artifact or track is preserved through the conservation of this thing in an envelope of safety, ie the envelopes that seal in a virtually safe from any external insult ... say anything that will be contained, or the ... I know tubes, rigid plasticheria say precisely where we store the samples of tracks taken from the crime scene, then individually, must be identified individually because, of course, we also use sterile disposable device that can be precisely metal pizza is disposable, is scalpel and the tubes is where we sampled.Now we go a little in detail about this survey, I refer particularly to the first inspection, the initial one, because it is more complex in reality. The general criteria adopted were that the first technical operations have been carried out in the house on Via Della Pergola going inside the house to the outside, for two reasons, one main one is that the corpse was in the room farther back along this corridor that went out, so having the priority of the victim's room because it was necessary to remove the corpse, it was necessary to preserve at best, of course, anything from degradation, contamination and so on, of course you have chosen to make a priority the inspection of the victim's room and then went over in this way does not virtually, doing precisely the operations to the outside, at the same point, precisely because it went toward the outside, then all the rooms and all areas were photographed in priority than any technical activity with the Sferon, this unit of which perhaps you have already heard that allows a recovery to 360 °, so it's a sort of video camera that turns on itself, so it takes any object Sferon who is in the room, at any height, even the ceiling, except for a small ... basically a small circle that is his blind spot, ie one where he is because he can not practically take themselves, that they should turn over, and then any room has been frozen in this way, so that then subsequently, when are removed, move the

remains, it allows Sferon then of course on your computer in the office, to review the exact positions and review the whole scene as it was presented to our eyes. Let us now turn to the sequence of activities, I made it very schematic, however, surely we will discuss at greater length. Then the sequence of events was what? Arrival in fact, as I already mentioned before, the scene around at 19.00 - 20.00, is for me a brief inspection of the environments, I have shown by staff that was already there from the afternoon of the Cabinet Provincial Police Scientific Perugia and meeting the medical examiner, Dr. Lalli's body that shows precisely where he was, still covered, so it was not touched anything before our arrival, and I agree with him pretty much on the timing of how we have to move each other, because both I that he had some things to do, in their own field. What was the problem? The problem was that the corpse could not be removed so immediately upon my arrival ... I mean, why? Appropriate to the facts, let's say for the opportunities that would surely follow, there were to be sampled first findings of which were at the foot of the victim, otherwise we would have passed over, obviously with their feet because the space was small, obviously we have to walk , then surely there was repertoire from that area at the foot of the corpse, and more importantly there was to the first chamber repertoire of the victim, where, in fact, as I said before, is the scene of the crime a priority, there was But from the corridor by the chamber repertoire of the victim then came into the living room - kitchen and even a part of the living room floor - kitchen because it was very clear that there were bloody footprints of shoes, so of course if we then had started work, having to walk, we walk up and risked being erased with time, but initially, obviously having had the foresight to see them and preserve the digital display, exactly with the crime scene staged by the operators of the Cabinet Provincial course were preserved from this inadvertent trampling, and then practically had to do this before proceeding with the removal of the corpse, just as you described here is part of the floor of the hallway and the room with the victim's shoes and bloody fingerprints p avimento objects on the foot of the corpse, then there is the continuation of activities with the finding in fact the victim's room, after the body had been removed by a doctor and in his presence, and with his help, especially, had been made the first biological samples, say in the immediate vicinity of

the body hair were different formations, even locks of hair were just of the victim, then turning the cadaver had been highlighted, and then the doctor - two legal pads run there at the moment , a vaginal and rectal a fact that I get delivered, then picks up the alleged hair formations in the vicinity of the vagina, so this is almost precisely the first drawings made by Dr. Lalli and data delivered to me of course.

Q. - I'm sorry, Doctor, you said that even before the victim's room had to do ...

ANSWER - Yes, do this survey ...

Q. - Here, inspection and repertoire of the hall because there were clear signs of bloody footprints.

ANSWER - Yes.

Q. - How is written there, but I would repeat it, were shoe prints of bare feet ... or just shoes?

ANSWER - No, it was clear shoe prints because they had a form, say, a cast of very reminiscent of the sneakers, because they were pseudo-circular or circular, say.

Q. - So the footprints were visible to the naked eye say to the shoe?

ANSWER - Yes, absolutely blatant, which then were degrading, say, were a little 'swarming outwards, ie towards the front door is faded and became almost thread-like, but you could think of going on the same line, roughly, that The hallway was straight, then just went to the door of the room, even if they did not have the latest just a circular shape, the wires were, because obviously it had issued out the blood during say.

Q. - But to the naked eye were visible imprints of bare feet?

ANSWER - No, no, no. No.

QUESTION - Thank you. You're welcome.

ANSWER - So ... we were by Dr. Lalli, no. We were here.

Q. - Removing dead.

ANSWER - Remove dead, then, indeed, carry out an inspection of the victim in the room, almost the end of the evening - night, we stopped ... more or less towards the camera shows the 2:24 to 2:25, something like that, but in reality we went ... He's got almost an hour before the camera, so

we actually left around the two. Then they resumed the next day with other samples made in the Saturday morning and then later when we finished we went to the repertoire of these activities of the small bathroom, which was adjacent to the room of the victim, then in the large bathroom, which was saying the other bathroom almost diagonal to the ... placed in a diagonal to the room of the victim, and then there was the last to the living room - kitchen area in addition to bloody footprints on the floor we also took the cigarette butts from an ashtray on the table, then this pretty much roughly is the calendar of activities which have taken place, that the timing of the activities that took place in the first survey. I wanted to give you a hint, even the suggestion that he gave Dr. Handy, the latent tracks. Technically we have a method that can be used to detect these hidden traces of blood, that is they are tracks that are absolutely invisible to the eye, how? Using the surface that we want to analyze a reagent called Luminol, the reagent is pretty much what? Through a chemical reaction shows just shows her eye, by means of fluorescence, of any, if any, traces of blood hidden to the naked eye that could not be seen, of course this has a twofold benefit both from the point of view of reconstruction of the dynamics events, for example it often happens that the bodies are dragged from one place to another, so maybe they lose blood, and although perhaps then washed the floor luminol reveals whether there has been this shift, and then of course the thing that I primarily as genetistica forensics is that the samples made on luminol, and fluorescent traces on the luminol, which can be seen in complete darkness, a darkness so total must be done to highlight this in the fluorescence, can also be analyzed, if so, whether We are fortunate to have a genetic profile of the DNA, because it means that there was no blood, was removed in a non-full, not in an intensive way and then anything left of DNA, and we in some cases we can analyze , because maybe not all because they are latent tracks and possibly have been removed voluntarily from those who wanted clean, even these tracks are really too small, so it sees as the genetic DNA, but DNA does not see the luminol, another thing that is seen in red blood cells, which as I said are very abundant, very abundant than white blood cells that damage the DNA, we could happily have red blood cells, or at least say a vision not of

fluorescence can then analyze the DNA, or because there is not, or is there in a so small that it can not be analyzed.

PRESIDENT - (Unintelligible it off microphone).

ANSWER - No, it is reported, then later as a positive test does not indicate with certainty the presence of human blood, and even does not indicate with certainty the presence of blood, then if I have animal blood, the blood type of fish, blood Meat is commonly used, is manipulated, is bought at home, I still can I have in those places where maybe there was meat, fish, and animal blood, I can still get the positive luminol, can I have, however, a luminol to light in other circumstances, for example when I have an area where there has not been resting on the blood, then had no contact with blood, but maybe there is some rust that I can not see with the naked eye, c 'was, as I know, fruit juice, some fruits to give a positive luminol, there was also the grass, so even the chlorophyll of the plant gives the positive luminol, all of these situations are set out, in fact, false positive, with the luminol I can not discriminate, so I can not tell if that's a false positive or a true positive, I still have to say ... take note, if I can document it in terms of photographic and groped to analyze it, then a result negative for traces of DNA taken from the luminol does not necessarily mean that there was not human blood, it may be that their blood was not there, so it was not human blood, maybe it was grass, and chicken blood was so on, so I with the genetic analysis can definitely say that there was blood but his absence, so the absence of a DNA profile does not allow me to set a lot, does not allow me to say whether there was DNA because it was too little, so there was no blood and therefore there was no DNA at all, or was there something else that was not blood, was perhaps the grass, the grass clippings that had been trampled .The luminescence that is given a color is very intense, very special because it is blue - blue, so it is visible for several seconds, then decades, it's like this light went out, and then we can no longer see it, the reaction is exhausted. These are examples that relate to this case, are examples of the positive luminol tracks precisely, and as you can see these are plantar footprints, clear catkins, short, bare foot after the luminol luminescence and is shown here this piece of floor which corresponds to this, not this, but this one, where as you can see two of these intense

fluorescence that we have here with the naked eye, the light is not visible with absolutely no trace, no fingerprints, so no trace of blood or otherwise, is visible to the naked eye, whereas after luminol fluorescence but this is what you, as you can see, He's got a fund, however, because there are, in fact, so many possibilities of having false positives, so there may be a fund ... I do not know, the earth, rust, something that mimics, but more so mild, so a light dimmer, less intense, let's say that instead gives the brightness at the points then we choose to sample.There I said it ... luminol reacts almost used as an ingredient of reaction the iron in hemoglobin, so it is easy to get false positives, because the rust is the iron, even iron has no chlorophyll but a molecule similar to hemoglobin that contains iron and still say He's got another atom that makes up for with the iron in doing that kind of reaction, which is magnesium, and iron can be almost say, in fact, indicative of the presence of hemoglobin but iron is not the only one that reacts with luminol, reacting other chemicals, other metals, and then the iron is not the only constituent ... that is not specifically contained in hemoglobin, but it is an atom contained in many molecules, both organic and inorganic.

Q. - Excuse me, Doctor for interrupting you, about what I said I wanted to ask, for example in the picture, the one on the left, where the footprint is clearly visible, in short, is well ...

ANSWER - Yes, it makes it much because there is a lot of ambient light, but the computer is much more ...

Q. - But we understand very well that there are fingers ... what I wanted to ask for a picture so sharp with luminol, regardless of the liquid, however, the substance that luminol reacts to this, so we also the case that it is not blood but is something else, even I know the bleach, even bleach.

ANSWER - The bleach, yes, even bleach.

Q. - But to have that image ... that is, the outline is all black and there is the rather clear picture of the fund.

ANSWER - Yes, in this case there is practically no background, no background, no nonspecific say, here.

Q. - So that means, however, whatever the liquid in which the foot that was stained liquid was concentrated only in the foot? Do you understand? It is difficult to demand that I want to ...

ANSWER - Yes, it's a little 'difficult to answer unequivocally. In reality, what is our experience is that false positives, so how can it be bleach, and were made of tests also led to an international congress, because I remember seeing them but can not remember exactly when, it seems to me to 'ISFG of Zurich, as it was an international conference, showed that the fluorescence that give false positives, ie that which is not blood, is not all that different even if the blood is, however, is always a bright blue fluorescence, ie the color changes, changes the intensity and duration, and intensity in practice, so that blue so intense that blue or other reagents that are not blood, in general, do not give it, give a fluorescent dimmer, a little like what going on here, there's a lot more dim fluorescence, however, there is probably a state, I do not know, of dirt, dust, something that might contain metal atoms that just react differently, or traces of bleach I do not know, in short, something that reacts in a more dim, and with somewhat less intensity but also perhaps with a shorter duration of fluorescence, because this signal then decays we said after a few tens of seconds, maybe it is the false positive blood decays more rapidly, that goes faster and is less intense, though, let's say, it's a bit 'variable, depending on how much, because we can not know in advance how much bleach is maybe, maybe with a liter of bleach, which I have never seen, perhaps gives a fluorescence huge, but then the liquid would be visible, so it is a thing not easily definable in terms of quantity, but you can easily appreciate by eye so much so that us in some cases, even in these technical activities, we have had at various points, in different floors, in several surveys where it was performed the luminol positivity, fluorescence, however, I have deemed to be, I judged a fake positive because it was very, very weak, very weak and as if to say ... so I definitely considered it not useful not sampled in that case because I think it could be anything but blood, that's it.So, let's say, is an estimate made by eye with the experience that I know there's a method to measure objectively and technically just a matter of gender, what I am exposing.

Q. - But if for example the corridor, because there is the hallway, right?

ANSWER - Yes, there is the hall, yes.

Q. - So let's say if the corridor was covered with a uniform layer of rust, or by a uniform layer of bleach and there was the foot, that foot clean we had walked over the image would be or would be the negative of that 'image?

ANSWER - No, you can not say, but certainly I do not even show at all the impression, that I completely removed ... I should stick to the plant throughout the bleach or whatever is below, and then have the negative .

Q. - And then have the negative, perfect, that's what I wanted ...

REPLY - But the most logical but you can get is that I see a uniform background, ie, if one walks barefoot to spit on a floor cleaned with bleach, for example, and not rinsed well, so there was a little 'bleach, logically, I expect not to see anything, because the bleach is evenly distributed, precisely the negative of this ... I mean I can not sticky like jam, all the bleach under the surface, that does not seem right reasonable, here, we're talking about molecules not ... I do not know about things like hair or macroscopic say, we're talking about atoms, rather than of molecules because they are metal atoms, so do not think it's possible.

PROSECUTOR - Dr. Mignini - Sorry to go back a moment, that picture ...

ANSWER - This?

PROSECUTOR - Dr. Mignini - On the right, in fact there are areas highlighted, and those others that are ...

ANSWER - Yes, these.

PROSECUTOR - Dr. Mignini - So we can say that they belong to different reagents?

REPLY - Oh! Good question! It may be so but it could also simply be something diluted.

PROSECUTOR - Dr. Mignini - Of diluted.

ANSWER - Let's say this is blood, then these tracks have responded with their own blood, if I here I've got very small traces of blood, much more washed out, I could also have this image that

I can not exclude, however, precisely, if there is blood could be anything we say precisely which gives less intense fluorescence.

Now for the part that is primarily concerned with, finally, the technical investigations carried out in the laboratory, then part of the analytical results obtained, this part I have found it useful to divide it into two parts, one which in fact is this, where there will be virtually 's list of all tracks, all the finds from which these tracks were taken out and all the results obtained from each track, from each sample, then there is a second part, final, in which practically on some of these results are been show ... so a more thorough analytical results achieved in terms of ... you remember the plot of the peaks? What is called electropherogram, perhaps you have not read but I have told you, then from the point of view that is associated with deepening dell'elettroferogramma deemed useful to the track, that is precisely the trace analyzed. Choices were made, not everything has been shown, either because they are 460 tracks so it would be just too, too long to do it for all tracks, some choices were considered more significant say in terms of a possible reconstruction of the dynamics events and what has come from the standpoint of the investigation, so it's a choice made on some tracks, the whole course, however, is contained in full in the technical report was then printed and filed with the Judicial Authority, and has shown, however, something that is actually fully complete. So this, what you see in the picture is just a summary, this and other, of course, slide, where practically came out of the remains, so the sources of these findings and of course for finding traces from each specimen, which were acquired in the course of the technical activities, and activities including investigation, then searches, carried out both through our visits, both from search performed by the Flying Squad in Perugia. So we start with the fact the victim's apartment and talk about all the finds, finds that most biological traces taken from the body of the victim, Meredith Kercher, the room where the corpse was found, then the room belonging to Meredith, the small bathroom The large bathroom in the same apartment, the room used to Amanda Knox, the room used to Filomena Romanelli, the living room floor - kitchen, the floor of the corridor and then pass the technical inspection carried out in the apartment used to Raffaele Sollecito and personal effects which he acquired as a result of the search carried out by

the Flying Squad in Perugia, then pass the technical inspection carried out in the car Audi A3, also owned by Raffaele Sollecito, and then performed an inspection at the studio use Rudy Hermann Guede and personal effects acquired by seizure. Since the information to be given for each specimen, were different for each track I found it useful to highlight by means of dots and asterisks, then I hope you can see from time to time, but maybe I will highlight them there, some information about each artifact, so for example if you see in the tables that you will be shown a brown dot means that the find, track, has been acquired during the survey of November 2 to 4, then the inspection at the home, so do not specify, or even if is the case it will specify, however, seeing the ball you can become aware where it came from this finding.So if you see the blue dot is the finding, track on the inspection of December 18 still in the victim's home.Then maybe this asterisk you see a little bit, and has a green checkmark means indicates a finding by the Flying Squad in Perugia sent me the lab, thus not acquired by me personally, but in fact sent by the Police Flying Squad in Perugia. This asterisk instead of pink - pink is a relic instead be captured and transmitted by the Provincial Cabinet of Scientific Police of the Police Service of Perugia to the laboratory of the Scientific Police.So let's say these are the visual cues to remember and to remind you and tell you where the finds were taken which will be discussed. Start with the tables of results, as you see in this table all the finds were made during the visit of November 2 to 4 because the ball is brown, withdrawals are related to the body of the victim and the first column is always shown the piece and tracks, so this is a brief description of what the exhibit, then vaginal swab, rectal swabs, hair alleged formations, sub-sampling nail and so on, then there is the numbering of the exhibit with their tracks, as I said before A, B, C are the traces, ie points of the exhibit where I am going to sample, while 12, 13, 15, 16 and so on is the catalog of the exhibit, so this finding in the laboratory is shown as exhibit 12, exhibit 13; then there are, in fact, related letters of the alphabet with which I point out the tracks and then there's the type of the track and in the middle column, the type of track is, for example, I am indicating with the mouse, cells presumed epithelial exfoliation, or semen, for example, this is an example of the type of track, then there is the genetic result in the column to the right, then there is the victim and perhaps the

track, then A, B, C, in this case now I will explain why there is A1 and A2, for example, then the other track has the genetic profile of Guede, now we'll get to in a more systematic, it's just to give you an indication of how light this table and subsequent later.Then, the colors you see in the background a little 'different from the rest of the boxes, a grid would be if you could see him, but do not see them, pretty much what it is to signal that track whose genetic profiles will then be detailed later in the second half of which I have spoken before, so some of these findings will then be subject to more detailed analysis, so the electropherogram and even a picture, because for more practical issues and to minimize exposure of my report, virtually every finding the photo is not shown, of course, if anyone is interested there is a CD that lists all of the attached photo that is part of the technical report and then if in some cases you might need to order a piece or, say, the results or at the end of their relationship or that we see this finding as I have photographed in the laboratory, and was then acquired and then subjected to analysis, however, precisely in the parts shown in different colors but will also be shown the sites , then the specific place where the inspection was finding that track was taken or where the finding is the same finding and photographed in the laboratory.One moment we pass to say a little 'because only in this we find A1 and A2, A1 and A2. Then the vaginal and rectal swabs performed on the victim's body were three that I have identified as A, B and C, and three vaginal and three rectal, A1 and A2 in both cases means that we have only carried out on a analysis of these three buffers to extract particular analysis is that technical term is called differential because it tends ... just as I have already mentioned before for another issue in the cases of sexual violence we have a mixture of seminal fluid, then sperm cells of the victim, there is a procedure whereby you can separate these two cellular fractions, then have to be a part of the sperm and epithelial cells in a part of the vagina or rectum of the victim, because these two types of cells are very different from the morphological point of view, so let's split up by means of analytical techniques in a manner sufficiently clear, so A and A2 means that A1 is the fraction of one type, maybe even the village women and A2 is the fraction of men this excerpt from the initial one, here is what it means, you will find it only in these cases of vaginal and rectal swabs precisely.In this type of analysis is to be noted that no

semen was found, then specific testing of seminal fluid is negative and the genetic results obtained on these tracks, which at this point are four for each of these findings is: The victim was found on the fraction 1, then of course the female part of the vaginal swab, the swab buffer B and C. The genetic profile of Guede has been found only as far as the analysis of the Y chromosome, this is a point on which is worth dwelling a moment.Remember that a little 'slide ago I mentioned that the Y is male-specific part of a mixed DNA and that is possible in this way in his analysis of a mixture of male, in this case, and is not very uncommon, being the victim's DNA was overflowing with many, many times small compared to that, obviously, that is, in retrospect, looking at the results we can say, the male genetic analysis we generally see that all the DNA for a technical fact that happens in the first PCR amplification cycles we do not highlight, that's us, the PCR, the analysis fails to highlight the male part, which is still, obviously, but when you analyze specifically the Y, we say you must analyze a some 'blind, because I have no evidence to determine in advance whether or not there is the male DNA, is an attempt, if I say the idea, being a vaginal swab, although it was negative for the liquid semen, there could be a hope that in fact happened was that the male DNA, though not of sperm origin, was still present, perhaps for other reasons, other sources, and was revealed only the haplotype, do you remember the genetic profile Rudy Hermann Guede of the Y, and then in track B, then the full profile, ie total extract of Track B, which I have been a victim, as if it is actually lived a little bit of male DNA that has been highlighted track only as Y, Guede, whereas the traces were negative fraction in Buffer A fraction ... men say in quotes, so there was no male DNA in this buffer, and then also the fraction, the analysis carried out the third buffer, the C, did not - you see the C - did nothing more than the victim and the genetic results negative for the Y specifically performed. I do not know if this part is clear. We can analyze the Y generally mixed on, so to highlight the male DNA, however, in some cases because the analysis only looks at the Y, focuses only on that chromosome, ignoring everything else is, so to say much more sensitive, ie it ignores the female DNA and sees only the male DNA, and is not that there is no DNA remaining, ie there is only the Y chromosome, this

frankly is unlikely, at least, it is impossible to think But we say it is a quantity so small compared to the female DNA that you can not see with the normal method of PCR.

Q. - So, doctor excuse, to simplify even more, was found in the vaginal swab haplotype, the Y chromosome, but because it was his choice ... since she had first said that for the exaltation of the DNA and the 'exaltation of the Y chromosome only uses two different kits.

ANSWER - Yes.

Q. - So it was a choice saying he expects the location of the biological material to be traced and also ascertain from the standpoint of investigating to do, that is, whether or not to give ...

ANSWER - Yes, that is, however, if the victim had had sexual contact with someone or not.

Q. - So it was important to determine whether biological material was of a man and this could be characterized more easily by searching only the Y chromosome, right?

ANSWER - We say it is the last resort.Exactly, exactly. That is not done routinely in all the DNA that we attribute to a woman, here, can not be done routinely, there's really no logical order and also, of course, the cost and time prohibitive, then click because of some special artifacts in a case of violent death of a young one can imagine that there is still a sexual dynamic in the event.

Q. - And he chose to say that the biological material being taken from the vagina prevailed for obvious reasons, the biological material of the victim ...

ANSWER - the victim by force.

Q. - And then chose the kit because the Y chromosome is more sensitive than the kit DNA research generally.

ANSWER - Yes, yes. This analysis was also made without success on the rectal swabs, and the Y chromosome-specific analysis was performed on all three rectal swabs but did not succeed. Then there are formations of hair that I remember you, even alleged, because they seem to be the fiber of wool, we are not a laboratory product category, however, seem to be looking at them under a microscope of wool fibers, which are those taken by Dr. Lalli when the corpse was discovered and was made an initial visual inspection of the corpse and say so these fibers were found that

could be formation of hair, and maybe they were taken, however, have produced no breakthrough.

Q. - Doctor, excuse me, since the findings are still many and as negative or positive is already displayed in the brochure ...

ANSWER - Perhaps I dwell only on something.

Q. - Go on relics we say, in quotes, positive and then maybe if we have to go back there on the negatives, but are already displayed, right?

ANSWER - Yes, I think they are in fact quite clearly visible. Then there are the sub-samples made nail on his right hand and left hand on the victim's body and all five for each of the two hands, the samples have obviously only the DNA of the victim.

Q. - The sub-sampling means that you have analyzed nail the nail?

ANSWER - Yes, the nail, a nail, however, say it was very, very short, so presumably could not scratch her attacker significantly or his attackers ...

Q. - So in short, to be removed biological material.

ANSWER - So much to remove the skin, say the material, because it was say very adherent to the phalanx, so it was a fingernail short, even if we say long but short in the sense that it was perfectly bonded, so there was little to be expected, here. Then swab the victim's blood in the wound I run the bigger victim and this was used by me for the allocation of all the genetic profiles of the victim to the victim, because if you remember the first DNA comparison analysis , I must always have a DNA with a name to say "What is this person" or "That's not this person", so for me to be a source of course absolutely certain, sure, in this case the buffer blood in the wound made larger of the victim, then going with the swab inside I think it is absolutely out of any possible error. Let's see a little 'more closely the results obtained on items in the room of the victim, I put some pictures here say that maybe we can be helpful if you want to put some artifact in some precise point, that is, place it at the crime scene, no you see the images perfectly, but at least give an idea. Here a significant result between virtually all the findings analyzed, so you see there is a glass, a bra, a towel, green, light-colored, beige towel, a white sheet, three pieces of

toilet paper, a wad wadding, training pilifera, found these on the desk, the only significant say in terms of investigation, of course, because they are all significant for some reason, this is extrapolated from the bra that we found, I show you in this room , then at the foot of the victim, near the threshold of the room, the door is almost here, so we found a total of 6 samples made, and then from A to F, we found the track B the Y chromosome, even here only the Y chromosome, not the full mix, Rudy Hermann Guede be attributed to.

Q. - And the track at which point B is reminiscent of ...

ANSWER - as you can see this has been highlighted in a lighter color, so it's one of those pieces that we will see then, later as a study.

Q. - Okay, okay.

ANSWER - So for now I would go ahead.

Q. - Yes, okay.

REPLY - Of course, in this case, precisely because it is the bra in a particular condition, you will see it, or do not know if you've already seen, had clearly been torn, because he had just torn straps and a posterior portion also cut at least c'aveva a clean cut so it looked like it had been cut, saying it was a particularly interesting finding, that even on these samples, such as vaginal and rectal swabs were performed on the same analysis of DNA extracted, so I do not that other samples, but always containing the DNA sample A, B, C, D, E, F, were also carried out the analysis for the detection of Y chromosome and all traces were negative except B, which was Rudy Hermann Guede precisely attributed to, all these other tracks are fairly insignificant, some negative, many victims and damage profile contains essentially all human blood different formations hair, some have given positive results, as here, some are negative, because , of course, training pilifera to give a positive result should have the bulb intact, say in a stage of its life cycle of good quality, so a phase called anagen, that retains all of its cells in the intact follicle, a hair that falls naturally did not make this bulb consists of these vital cells that can not be analyzed, for which a bulb of a hair is pulled with a good chance analyzed from the point of view of nuclear DNA, a bulb that comes from a hair fell spontaneously, because our hair falls out spontaneously,

say as a rule, can not be used for this type of genetic analysis.Then here is meaningful, especially important there is not much to say except that this slip of the victim, always found at the foot of the corpse, was negative in the seminal fluid was analyzed under UV light, UV rays are a method we use to highlight, again for fluorescence, but fluorescence is different from luminol to detect any traces of semen, because often the eye traces of semen are not completely visible if they are not particularly abundant, but let's say a track submitted UV fluorescence is evident that might suggest that there is semen, was therefore carried out this analysis, the right thing by the way, this rubbery white substance was found not to be rubber but it was one of those substances that stick to maintain the walls of photos, spreadsheets, do not know if you have never seen, but we had a white color was originally identified as a chewing gum d, that is, as chewing gum, rather then having the substance tested negative examination salivary and even genetic analysis is certainly not chewing gum.Here you go forward because there's not much ... here, let me emphasize that the trouser jeans, which was always found near the victim, at the foot of the victim, were carried out several samples of blood, but all of the victim, especially since this is the jeans was found upside down, so this suggests that the jeans have been ... or that the victim had slipped in a rather difficult I think to say herself and pulled inside out ... or that someone else has been pulled inside out, because there are abundant blood stains, especially on the top, that is, on the part of the belt, and also traces of blood that does not seem to be rubbing, say secondary placing, inside the jeans, then the party that had become external .

PRESIDENT - On the flip side.

ANSWER - On the reverse, that's right, this would suggest that these drips, these are rather large spots of blood occurred, have been laid during criminal or immediacy of the event itself, because otherwise it must have rubbed more than stained so palpably inside, just wanted you to notice this but there are no significant results.

This process is suspended.

This process is resumed.

PRESIDENT - (Unintelligible it off microphone).

Q. - We were looking at the various findings, the various tracks so we can continue.

ANSWER - Yes, the room of the victim, then here there are no particular results to be emphasized, are all samples of human blood substance taken from various points of the victim's room, door handle, swing door, cabinet and so left shoulder away, the floor near the radiator, drips on the basis of the desk, the victim's blood all over here, and here we have as finding the relevant piece of cloth with hooks that was like the previous finding, another sample taken at the door on the front wall , it had already been acquired, which had resulted in genetic precisely the genetic profile of the victim, say our intent in executing the second sample during this visit was to try to see if we could possibly determine the genetic profile of the person alleged that he had affixed the stamp of two phalanges in truth ...

Q. - We're talking about that on the wall ...

ANSWER - the wall, exactly.

Q. - What the Court surely recall, I think over the ... between the bed and nightstand.

ANSWER - Yes, basically between the bed and the bedside table there is a trace blood vistosissima oblong seem to remember two fingers and maybe the top of the third finger, obviously, is very clear that this track was then rubbed down, then, of course, but without assuming to be 100% sure, assuming that was not the victim bleeding on the hand of his blood to be affixed to the pseudo mark, we say that track, say the intent was to see if we could, maybe on the end of this huge blood trail, then on strusciatura to understand, if it was possible to detect traces of skin, epithelial cells, however, that most likely were left by those who have rubbed and who has marked the imprint, but do not have data, these other two samples taken, any genetic result. I remembered the first note, I mentioned the piece of cloth with hooks also exhibit during the second visit and this too, you see, say the panels are lighter than the other, the result will be the subject of a genetic study next. As is evident from the result of genetic DNA ... the victim is extrapolated from the actual piece of cloth, while track B which consists of the hooks, metal

hooks, then the two genetic resulted in a mixture: Raffaele Sollecito both victim more regarding the comprehensive analysis of DNA, then we say mixed as true, as we saw earlier, initially, and as a result of the genetic characterization dell'aplotipo Y, then Y's genetic profile. We continue and here we have all the fact findings acquired during the second visit, except that this finding is a small bag of brown leather that was present in the room of the victim and was sent to our offices as a relic from the Flying Squad in Perugia seized , a sample made of this finding is negative, while the two findings on which to deepen our discussion of the results are this other color leather bag, listed as exhibit 166, which has been found, the first time was placed on the mattress in fact the victim's room, the second time was found, if I remember correctly, in the closet, located in the closet, the light blue hoodie is the finding that 171 was affected by the sampling of four tracks, A, B, C and D, too, as we shall see later study, resulted in similar results of both genetic ... the bag he gave the sweatshirt in addition to the DNA of the victim, on the track A, has also given DNA Rudy Hermann Guede as the genetic mix, this result was also confirmed by the analysis of the Y chromosome dell'aplotipo always run on the same track, the other finding of which I spoke, the hoodie has resulted in the total genetic, indeed of the total DNA , then the victim's genetic profile of all four DNA extracts obtained from these traces and only in respect of track B, then we shall see, this is the left cuff of the sweatshirt, has resulted in the genetic profile of the genetic chromosome Y, then the analysis of the Y chromosome are negative all three remaining tracks, so the A, C and D. Of this we have already spoken.The victim's room, virtually ending the analysis with a bag of beige fabric, always sent to the offices of the Scientific Police Flying Squad in Perugia who had acquired as an exhibit during a search, and this finding has given rise Track results and blood of the victim's genetic profile of the victim. Let the room of the small bathroom, these are some pictures of the visit, and going a little ', say, quickly, but not too much here but there are very interesting results, we have all these tracks into the second part as we say in-depth results, we have the carpet with traces of blood of the victim on three samples, we have the light switch plate, then this to understand, these two buttons you had ... you will not see because the light conditions are not ideal, but there are traces

of blood, say blood washed, blood mixed with water, presumably because it is pink as a color, there is the blood of the victim, then there is a sampling tap at the front of the sink that has given genetic profile as the profile of Amanda Knox , and as samples taken at the edge of the discharge of the bidet, which was evident precisely track eye, blood was found on the victim's genetic profile and Knox, then a mixed genetic, here as well as cotton swab on the container that was present the sink, I'll see, this is the cotton swab, and this is the front of the faucet where it was found the blood and therefore genetic profile of Amanda Knox. Let's move on, even the dripping of the interior basin of blood that seemed to always say washed out, that is pink with blood, behold, he gave as a track type human blood substance, and as a result a mixed genetic Knox victim more, training is not pilifera helpful, there is a blood substance on the tablet cover water that gave the victim and then to the doors, the scaffolding of the door of the victim's genetic profile, another blood substance alleged that instead ended up being negative, gave negative genetic result was indeed taken in the vicinity of the discharge of the water.Let the big bathroom, then place the other bathroom at an angle to the victim's room, these are some pictures, was finding the toilet, from inside the toilet is indeed a fragment ... actually two pieces to be precise, two fragments toilet paper in the toilet and a sampling of feces, toilet paper was given as a genetic profile of both total DNA and Y chromosome profiles of both members of Rudy Hermann Guede, while I did not give any results either for 'DNA analysis, or Y for analysis. Then there are two purple towels, evidently very wet, and very wet, which were acquired by the Flying Squad in Perugia from washing machine, do not know if one can see, are these.

Q. - Yes.

ANSWER - On these finds were made but three samples have yielded no negative results, as well as a heat gun seized from the gray squad, which had a negative blood and hence lack of substance.

Q. - Excuse me doctor, I want to explain why in spite of that we also appreciated photographically ...

REPLY - And you will appreciate because they are still ...

Q. - While we were in a fair amount but gave negative results with respect to the DNA and the Y chromosome?

ANSWER - Because I am a totally ill-suited to finding the genetic analysis because despite having, say drag because it certainly is a lot just by intestinal epithelial cells of the intestine, of course there is also a very strong bacterial component that causes , precisely as I said before, the DNA is chopped up by microorganisms in the environment, also is shredded and then degraded by bacteria in the intestines normally good content, so I give ... that is, in my experience I have never obtained any genetic profile and I think it's very, very difficult it can give, that's ...

PROSECUTOR - Dr. Mignini - Doctor Excuse ...

ANSWER - While the other hand ...

PROSECUTOR - Dr. Mignini - Yes, go ahead, then I end up ...

ANSWER - I mean whereas the fragments of toilet paper were sampled, taking care to avoid areas that were heavily soiled with feces, because otherwise we would have had the same problem, so have been sampled so as to make the paper completely blank, no , because maybe it was not in contact with the skin of the person who had used it, then doing a mediation say, seeing a little zone smeared with feces and sampling in that area, because, of course, toilet paper is used as a means for rubbing, and so it is very, very likely to contain epithelial cells which obviously do not go away naturally by the skin, as normally occurs, but are mechanically removed by this action of rubbing the normal use of toilet paper, so that's why two findings for similar in some respects then gave different results.

PROSECUTOR - Dr. Mignini - Dr. Senta, sorry, relatively light switch in the bathroom she found little trace blood.

ANSWER - Yes, two small traces of blood.

PROSECUTOR - Dr. Mignini - Please note what position the switch was?

ANSWER - Yes Then when we find, and then subsequently is also visible at the special will say as part of the study, the switches were practically in the raised position, ie off, because, obviously, we have in finding time where there was light, so the next morning, but the tracks

were placed at the point where you tap to turn on, so they were raised, but this is also seen in the picture very clearly, so they were raised and then the lights were out because I was so in the morning and finding the bathroom, as it had obviously been found, so they were off, but the samples are at the bottom, that is, these drips are rosy at the lower of these two buttons say that obviously if you have affixed to it is because someone has pressed on.

PROSECUTOR - Dr. Mignini - There has pressed to turn on the light?

ANSWER - Obviously, I do not find different explanations.

PROSECUTOR - Dr. Mignini - Okay, thanks.

ANSWER - Please. Obviously, the fragments of toilet paper will be treated in the depth. Then, of course, we talked about the hair dryer and even towels. Let Amanda Knox's room, this room was virtually subjected to technical inspection only in the second survey, and that of December 18, and some findings were instead sent to the Scientific Police Service following a personal search and seizure of objects so that evidently had with him the person from the Flying Squad in Perugia, and so we have a portion of the pillow, a pair of socks, a substance alleged blood sampling, but it was found that all bad, even the shoes of course analyzed the part of the sole were all negative, except for one sample, the sample C, which instead is the profile of Amanda Knox, but all are negative for the substance in blood, such as multi-colored bag instead provided as a result of genetic profiles in samples A, B and C Amanda Knox's blood but not substance. Then we look at the room where Filomena Romanelli well have been finding some objects, then there is a formation that virtually pilifera is also highlighted here, on the lower frame, so it is denoted by the letter R, and was acquired by the finding and the provincial Cabinet Scientific Police of Perugia, as well as the alleged substance sampled blood from the wooden part of the window, and on this side, the S, both of these findings have provided genetic analysis fails, then it was finding in the second survey suggestion, the will of the technical consultant, Professor Xavier power, the large stone and the two fragments were indeed found in the room, which was placed on the floor, and always on his sign at the start of operation was highlighted an area where the consultant has requested a sample, which is precisely the sample A and that gave negative

results. We then go to the living room - kitchen, these are some images of places and objects of this room were six cigarette butts from the ashtrays on the table instead of the six cigarette butts three have the same genetic profile as a result of a person I have named as Man 7, and then a male person who has not had opportunity to compare with other males involved and the people we say we know is remains an unknown man, then he was always finding a cigarette butt from the the same ashtray, which I indicated with D, where the substance was found saliva and genetic profile Raffaele Sollecito and Knox mixture of Amanda Marie; cigarette E and F are given as a result of genetic genetic profile of a woman, referred to as Woman 3, on both the stubs that have no parallels with any person highlighted in the investigation.Then in the living room - kitchen area there are five samples of blood taken from the ground substance, are almost the shoe prints that gradually faded, who went to the entrance, is all human blood of the victim. There is just the latest sampling near the entrance that evidently was probably too small quantity is negative. Then there is the hallway of the apartment, the hallway that goes from just a small bath on the door separating the rooms and the living room - kitchen, even here there are blood samples of the substance in fact pseudo-circular shape on the floor that have gene resulted in the victim, is the 119, the 120, 122, and here there were a number of formations that have been sampled hair from me in the drying rack in the first ever visit in the early stages and almost gave only a positive outcome 1 pilifera in training and other negative outcomes ... that is all the other training samples pilifera useful it has been analyzed, seven were found to be useful as they clearly do not have the bulb or in the telogen phase, or not at all the bulb, maybe they are broken or frayed. This is just another sample pseudo circular, then there is the staple mop, which is also shown here, which has been increasingly found in the second survey, while these samples were carried out in the first inspection, inside the cabinet which was precisely placed in the corridor, have been given two samples, A and B, which were both negative, as well as the formation follicles that was found entangled in the ribbon. Then we pass to the results obtained from the luminol test, this test was carried out during the second visit, after all the other activities on the floor of these rooms, the room used to Filomena Romanelli, the room used to Amanda Knox , hall, living room - kitchen

and large bathroom. The outcome of these technical findings contained in this scheme is precisely in this table. The sample survey called L1 in the minutes of the victim, so no one can say with certainty if it is blood, of course, because it is luminescent luminol but not to ... just having the luminol fluorescence of other possibilities we can only say the victim's genetic profile, and DNA the victim, there is also the sampling of the room always called L2 Romanelli, were both widespread and intense brightness, so there was no evidence of a particular form of luminescence, and such sampling, L2, provided the victim as a result of genetic and Knox, of course, in a mixed genetic, so all these tracks will then be addressed in greater depth in the second half, then we have the sample L3 Knox's room, as well as the other two, which gave genetic profile of Knox.Still, we have the L6, the L7, L8 and L9 to, the only significant result that will be treated later this is precisely the finding 183, L8 sample in the corridor has resulted in more victims Knox, and I ask myself the 'attention on the form that had these samples, these luminosities, we say this was more like, looked like a shoe-shaped, an imprint of the shoe, the other resembled a human foot, as well as the last, the 184, which has no But since no avail. This is just a test summary of luminol and results of genetic analysis. Romanelli in the room were made two samples, gave a profile of the victim, the other gave a more mixed profile victim Knox. The room of the samples Knox, Knox's three genetic profiles. Hall, four samples, a mixed profile: Knox victim more. The living room - kitchenette was negative test of luminol, and did not give a specific fluorescence at a particular point, and so was the bathroom was very negative test. This is a summary of the sampling carried out on the floor of the apartment of the victim, you see written here, of course, simply reported the numbers of samples, the rooms to which they refer and the genetic results, the dots indicate a negative result, so there ' was no genetic profile, the profile B shows the victim, so all these have given profile of the victim, as well as this, these negative profile, so there's genetic profile, they are blue in the hallway, this, the 183, we just said Knox victim more mixed profile, then the living room - kitchen were made all these samples, six samples, one was negative, the others have given the victim's genetic profile; room Romanelli two samples, are those of luminol, one of them has given profile of the victim, the other mixed

profile: victim more Knox, Knox's room in the samples, highlight the luminol, all three terms of Knox, so in total all over the floor of the house were made 26 samples.Let us now turn to the investigation carried out in the apartment used to Sollecito Raffaele, I remind you of the inspection was performed on 13 November. There are a number of samples taken in different environments, relevant, except to say the profile Raffaele Sollecito, there is not much, if not the mixture that has been made in a sample of a pair of gloves, rubber fuchsia, a of these samples ... that both samples have resulted in the facility: Knox, Sollecito more blood but is not substance, and likewise also the finds and samples taken on them made from sponge, a water trap under the sink, the sponge has resulted in positive genetic test to urge the profile of blood but is not substance, the bedroom, this part comes from highlighting the results of luminol, the luminol then has been done on the outside handle of the door, two on the samples floor, the genetic profile was found more mixed Sollecito Knox, even though this mix is a bit 'part, missing alleles Raffaele Sollecito. There is highlighting the luminol done in the bathroom, all results for the samples at 97, 98, 99 and 100 negative, 95 is the alleged substance blood, of course the case of luminol, as the result of genetic Sollecito Knox , while always a sampling on the floor of the bathroom has resulted in the profile of Knox.Still, kitchen - entrance is the highlight of the luminol five samples, all negative except ... there is a positive result for an individual gene, the DNA profile of an unknown individual I have named as Man 6, matching the upper surface of the mat. In addition we still have some personal effects acquired by the Police Flying Squad in Perugia Raffaele Sollecito always referred to, there is a pair of Nike shoes were made on which if I remember correctly 14 samples, it is written: 14 samples, all negative for the substance blood, two tracks have been found positive at the sample I found was a profile of an individual male, man ... sorry I sbag 4 LIAT, I urge you track 1, male individual, Men's 4 is the trace P , all the others are pretty negative on DNA testing. Then there is a knife, a boxer elastic and another knife, the knife, specimen 35, three samples, negative, boxers elastic substance was on two blood samples and blood were belonging to Knox, and Instead switchblade knife, make CRKC, four samples are virtually all made ... all three of which was sought essentially negative blood, at the

track C, was practically on the handle, so it was not sought blood, and Sollecito Knox is more the genetic profile found at the track A, which is both as a mixed DNA and as a Y chromosome, of course, attributable only to the male urge, negative the other three tracks, this will be too careful, say in a particular way in the second half the report.Then we have, always finds acquired by the Flying Squad in Perugia, a large knife 31 cm long, were made on seven samples of it, the handle is at the track A genetic profile of Amanda Knox and at a point in the blade, then we will see later pictures, the victim's genetic profile, all other samples are all negative, of course, has been searched for substance in the blood at a specific track B, C, E and G are on the blade and all four are negative for the substance in the blood. Then there are various garments, various items of clothing which have been increasingly acquired by the squad and are all negative genetic results, but one of rag, looked like a dust cloth for household chores, He's got inside, at A sampling of the genetic profile of an unknown man, referred to as Man 5. Then we still have a plastic bucket of red negative for the four samples taken, a pair of yellow gloves, they too bad, all bad except for the towel that has essentially negative blood but the mixed genetic profile as Sollecito Knox; there a yellow sponge, a track where there is no blood of Knox, and a yellow sponge, different from the previous course, that negative genetic profile has a negative blood and substance. Still other objects in the apartment all negative, except the plastic bag Coop brand, exhibit 194, which provided as a result of the genetic profile of Amanda Knox at the handles of the bags, then alleged flaking skin cells and blood substance to the negative A, is negative as a result of genetics. The other positive finding was the 224, a towel, white with floral designs, and has resulted in the genetic profile of Raffaele Sollecito, but not blood. We still have other items, towels, bathrobe, then all results that are either Knox or Sollecito are mixed - Knox, there is another unknown man on a black shirt that I referred to as Man 8; more mixed on his pants: Reminder Knox over at the track A, while negative as B and C. Let the car, visit sull'autovettura, practically this car has been sampled by sampling both classical, as it were, without aid of the lights if no forensic evidence of probable traces of blood substance, either by the luminol, and also to 'interior has been tested in the luminol and various samples were made at various points

throughout the machine that gave negative results, these tracks are highlighted by the luminol were negative, so either way is not blood, it is absolutely ... in short, is a false positive, or the amount of DNA is so small that it can not be used to provide a genetic profile, everything else is negative.Finally, I think it's the last survey, there is a technical inspection carried out November 20, 2007 at the studio Rudy Hermann Guede use, there are various exhibits, towels, washing machine filter, trousers, business, everything has data or substance genetic profile of blood and Guede, as in the case of 148, 149, or positive for the genetic test but negative for the substance in blood, and genetic profile of Guede, as well as the ticket, but in this case the substance is positive blood.Still other formations sampled from various points of the hair, all negative and all negative samples still made in the bathroom, the fragments of a jacket that was resting on a bed, floor joints in the kitchen, there was also an alleged blood substance highlighted on the intercom attached to the wall, all negative, has been done here too the test of luminol on the floor and under the sink there is an alleged substance that just gave blood as a genetic profile to Guede. There are personal effects that have been acquired by the Flying Squad in Perugia in a backpack he had with him when he was stopped in Germany, so there's a sweater, a pair of pants in short, nothing particularly relevant here as well if not on some samples made is precisely the genetic profile of the owner. Then a pair of pants, a sweater, a towel and a toothbrush are all just pieces that gave a profile Guede.

This is a list of all the biological activity conducted in this case, were then carried out a total of six technical inspections, 228 were analyzed and findings were analyzed by these finds traces 480, 460, sorry.

Now begins the part of the study, so this part onwards there are some results, say visually from the other, where it will be shown the genetic profile obtained at the pictures and sampling in the survey findings and photographed in the laboratory. These are the famous vaginal swabs that we initially saw the victim, all tracks are negative to tests for seminal fluid, I have highlighted only the trace B because this is the one who gave the victim's genetic profile, on your left, and profile Y of Guede, who is shown on the right. This is the finding of reference, the 21 findings, as you

see, now I do not know if you remember, I was initially told that the dossier had precisely as number 28-669, is the finding that 21 and this precisely is the label that you see on every findings with the corresponding number. This, of course, is the genetic profile of the victim. The light blue bath mat was used at that point, obviously under the sink, under the sink, this is the photo taken in the laboratory, so with our photographic equipment perpendicular to the plane of ...

Q. - Backed.

ANSWER - Backed. All specimens were photographed in this way and I made three samples, as you see A, B and C, these samples have all three genetic profile of the victim, these are the two tracks and this is the third, the whole profile victim - blood victim. That's what I said, the two buttons are raised, that have returned from the top and samples of blood, I think perhaps not appreciated, are more or less at this point and at this point, so they are more or less at the bottom buttons, these samples have resulted from genetic 'analysis of the track A profile victim. 24 samples carried out on the front of the faucet of the sink that we have seen before, testing positive for human blood, Profile Knox.

Q. - My question is, sorry to interrupt you, you said that as a comparison for the victim made a pad inside the larger wound, say.

ANSWER - Yes.

Q. - But for the relative comparison to the suspects, the suspects then ...

ANSWER - Yes, we will see shortly, we will soon have the saliva swabs, as I put the numbers in ascending order comparisons are around 30, so we will see them soon.

Q. - Precisely, however, just to understand that when you say it is because Profile Knox had already examined the sample used as a comparison.

ANSWER - The reference, of course. So let's move on. These are precisely the pieces of toilet paper from which samples have been taken A and B, this is the point where they were found and traces of toilet paper and faeces is obviously below, in the large bathroom, and both samples A and B have given genetic profile as the profile of Guede, as well as a profile Y Here they are, these are the two salivary swabs taken at Sollecito Raffaele Scientific Police and transmitted by

the Cabinet of Police of Perugia. This is the profile, say DNA, full profile, this is the profile Y. These however are the two salivary swabs taken at Amanda Knox, and this is obviously only the genetic profile of the total DNA because there is no Y DNA. This is the knife I was talking about earlier, four samplings were made at these points and the only one who has given a positive result of genetic sampling is A, then this to be clear on this ... I do not know what to call it, this coupling , was something mobile, and as if it might attack, I do not know, for a belt ...

Q. - To stop the ...

ANSWER - Yes, in fact I do not know what to call it.

PRESIDENT - (Unintelligible it off microphone).

ANSWER - Yes, that's all this hook, to say the sampling was done at this spot, but this alone is not red blood, so maybe it will be another room, and this sample gave only mixed genetic profile : Sollecito Knox longer.

Q. - So that stain was not blood ...

ANSWER - There was blood.

Q. - But on that ...

ANSWER - At this point, yes, because ...

Q. - At that point there was DNA of Sollecito and Knox?

ANSWER - Mixed, yes, and in confirmation of this fact, the presence of DNA of Sollecito was carried out the analysis of Y chromosome that has resulted in urge the genetic profile of Y. This knife is 36 cm long on which seven samples were performed, not all ...

Q. - I have maybe 31 cm and the specimen is 36.

ANSWER - Yes, I said?

Q. - He said 36 cm.

ANSWER - I forgive. Soon I could say that there are also I was there! Exhibit 36, 31 cm. These samples, I said, were carried out in two separate work sessions and at first were performed three samples, the A, B and C, then we say at the point of contact blade - handle, then the A, at this point of the blade, then to the tip but not at the tip, and on the other hand ... basically the

equivalent point on the other side of the blade, then according to the results obtained, of which I speak, there have been other samples, two on the blade and two on the handle.

Q. - This is the knife that was found?

RESPONSE - At home I urge, then sent by the Flying Squad. So the only tracks that have a genetic profile is you are the traces A and B, both of which are negative for human blood, the track has given to the genetic profile of Knox, and it is shown in the electropherogram and track B has given the genetic profile of the victim and is depicted in this electropherogram.

Q. - Ricolleghiamola from the point of view point of the knife, and then plots B?

ANSWER - The Trace B was taken at this point based on any significant track from the biological point of view say that was visible to the eye, however, was visible to the eye, in fact consistent light, was visible a series of streaks, including one very deep, in quotes, they were still streaks, and rather superficial, though clearly visible, these streaks going ... roughly runs parallel to the top of the blade, then were more or less parallel to this side, to say the tip came a little 'to fall, then followed a little' tip shape, but they were streaking, the anomalies of this metal visible to the naked eye under intense illumination, while the point of A has been sampled, the handle of course, as well as the D, F, with the intention of eventually finding the DNA of the person who had contested the weapon, in particular the A point was made at a particular point in which there is a limit switch of the hand, that is, if I hold the knife and struck a blow at my hand naturally tend to move forward, at that point the knife is made in such a way as not to allow this, otherwise I would go with the hand on the blade and then there is a kind of tang, this short Here you see the hanging, the sampling was made at precisely this area and was successful the genetic profile of Amanda Knox.

Q. - That is, which is probably the area where the hand ...

ANSWER - We say stop his run and is also one where it rubs more ...

Q. - Precisely where He's got more painful to watch because you have to stop.

REPLY - He's got more friction. Other samples have been tempted to say, confirmation of these genetic profiles already found but the results were negative.This is the reference profile for the

DNA of Rudy Guede, was then found in his apartment a toothbrush in his bathroom, so I have basically used this genetic profile that was found to be identical in both point A, then the bristles on the head, both presumably at the point B where you grab your toothbrush when using it, was found the same DNA as both genetic profile as the profile is complete, Y.

PRESIDENT - (Unintelligible it off microphone).

ANSWER - Yes, yes, track B, what I said at that point with these scratches, we say these striations visible under good lighting, changing the angle of incident light to the blade, because, of course, reflects the blade, then creates shadows, behold, if there are imperfections.

Q. - So you found on the blade profile of the victim?

ANSWER - the victim, yes, this is shown. Then the specimen 59, the bra, I remember you were found not far from the feet of the corpse, here is a magnification to highlight the point where it was most likely made a cut, because it is clear that truncation, in practice, the fabric, and this is the bra photographed in the same way, then at right angles in our laboratories, as you can see six samplings were carried out at various points, seven actually, sorry, we have two samples on the cups, from the inside, and the rest of the samples, Consequently, four samplings were carried out on the clear straps torn, because there were wires sticking out of cotton that fact, the tears evident, and the sample B, which is also of interest, was performed on this portion of the elastic band that virtually runs on the lateral side of the back of the woman to the rear position, so ...

Q. - That is the point ...

ANSWER - B This, basically.

Q. - What is the point B adjacent to the missing piece?

ANSWER - Yes, exactly.

Q. - At the small piece that was later found separately?

ANSWER - Yes, precisely at the rear, yes. So this area here, I just indicated with B, was the point where genetic analysis has found Rudy Guede profile Y Hermann, while the genetic profile of the total DNA, and nuclear DNA is only the victim, like the rest of the tracks, because I remember you, even if they are not reported as depth, all other tracks, so the A, C, D, E and F have

obviously genetic profile of the victim, and then the victim's blood. Here we go in the findings of the bathroom, the bathroom small, then drain bidet room, I do not know if you appreciate here is a bit 'larger, there's blood and this is the substance made when the sampling survey to collect this track. The track has resulted in mixed genetic profile victim more Knox, and is positive for human blood. The same analysis was done as a cotton swab placed in the container on the sink, there is a trace blood, maybe it's more noticeable on white paper, and this genetic profile taken from this track is a more mixed profile victim Knox, and positive for human blood. Still there is always a trace of pink blood, and like the others, which was found on the sink, on the left side of the sink, say starting from the top and went to the drain down, this condiment is ... maybe it was more evident in this part of the white disk, resulted in human blood and genetic profile as a victim than Knox. This is another sample that has been done on the tablet cover precisely the toilet bowl of the small bathroom, this is the sampling performed in the survey and resulted in the genetic profile victim and human blood. This is the clue that the bathroom door, just like here you can see, a casting, this is the trace drawn on paper.

PRESIDENT - (Unintelligible it off microphone).

ANSWER - Yes, not really, is the scaffolding of the door, right side, not on the outside, it is the side that beat against the other party, against the frame, so this is the frame of the door and this is the part side, say inside, here, external view, so it may seem, but if you shut the door maybe it is ...

Q. - disappears.

ANSWER - Yes, it disappears, because here's the key, then the port wheel and veered this condiment to this swing. This is done precisely in the sampling survey, human blood, the victim profile. Then an ashtray of cigarette butts collected from the blue glass on the table instead of the living room - kitchen, this is the butt, I do not know because here is another picture, but there is, the genetic profile obtained is Sollecito Knox more mixed, and this is the electropherogram. Then we have the piece of fabric with the hooks, this is the position it occupied the finding during the second visit, so when he was finding, this is the magnification, and here is practically the piece of

cloth as we have photographed prior to analysis in the laboratory, so we referred to as the A sample of the fabric sample B the two hooks. The result is on the track A gene positive for human blood, the victim profile ...

Q. - So my canvas?

ANSWER - On the white cloth, and on track B, the retention was found that the genetic profile of the victim as mixed urge and this result was further confirmed by the profile Y belonging to Sollecito Raffaele precisely.

Q. - The nature of that track?

ANSWER - I'm sorry?

Q. - The biological nature?

ANSWER - Nature is not blood, so the hooks are presumably of epithelial cells but we can not say that it is blood, simply because it was worn by the victim and then because of the two hooks was still a very warped, do not know if you appreciate at this point, and therefore presumably was the portion that was ...

Q. - Forced.

ANSWER - Come on, pull, which has undergone traction. This is the bag, finding 166 in the first survey was found on the mattress in the bed of the victim's bedroom, this is the track sampled blood, this is the position we have adopted to indicate the bag with a letter, but the bag is was found, as I said, if I remember correctly in the closet, and finding X, just the second visit, blood was found about a track at the point A, then this point, and the genetic profile identified by this trail of blood and a human victim and Guede mixed genetic profile, and this was confirmed by analysis of Y chromosome showed that the profile of Guede.Still, the light blue sweater, the exhibit 171, this sweatshirt was also taken during the second survey, there are shown the four samplings performed on it, the D at the flash, so this step, then the A, B and C respectively at a portion of blood apparently devoid of substance, part A, then B and C at their cuffs, the result obtained from the trace B gene is the genetic profile of the victim and corresponding to this genetic profile was found only Y of Guede. We pass to traces of luminol, the tests carried out in

the second survey on the floor of several rooms of the apartment, this is the track which is highlighted as an exhibit in room 176 Romanelli, the room where the cashier was so to speak, of course, was the luminol made by moving all these objects that were present on the floor, this hoop is to indicate roughly the area where it was sampled, because I remember it was a fairly common brightness, so it was not well defined at a point, and the track has resulted DNA the DNA of the victim. Again, the same position in the room moved to the entrance, say, roughly in this area was found just a luminescence that has resulted in mixed genetic profile victim more Knox. Then this, precisely, the image that we have already seen before by the foot that luminol was detected along the corridor, this is the sampling done, then the sheath in which the sampling was contained, the track has given genetic profile as Knox. This is another sample that gave a mixed profile DNA profiling as a victim more Knox, always in the hallway, say at the wall that separates the room of the victim and that Knox, say a horse of the two rooms on the floor.

Q. - I'm sorry, Doctor, you said that because the first several substances luminol enhances not only the blood can not say for sure precisely the biological nature of those tracks with the enhanced luminol, but I ask her championship in the biological survey traces there enhanced with luminol and found DNA profiles, if that track had been produced by the bleach would have found genetic profiles?

ANSWER - No, because the bleach destroys DNA.

Q. - Precisely say it was anything other organic material, however, do not call it blood, call it generic biological material, it was rusty, it was fruit juice, etc.. Would have found genetic profiles?

ANSWER - No, the DNA is specific ... this analysis is specific to human DNA. This we have said. Finished.

PROSECUTOR - Dr. Comfy - I, the President, I would say for the moment I have no question for us because the exposure is exhaustive, of course I reserve the right to cross-examination after ...

PRESIDENT - (Unintelligible it off microphone).

PROSECUTOR - Dr. Comfy - Thanks.

DEFENCE - Mr. Good Morning

Q. - Doctor, first of all I wanted to complete his introduction that she did before she should specify the general nature of these DNA tests were done at the lab from the lab in Rome?

ANSWER - Yes.

Q. - Look what the quality certification ISO 9001?

ANSWER - It is a certification that we are holding out for several months now for over a year, we have implemented procedures for the certification of quality, ie in the near future, perhaps by summer, we hope, our laboratories will be accredited by a certifying body for precisely the quality certification ISO 9001, certifies that this certification, I'm sorry the pun on words, that virtually all of our procedures from handling the cards, then the documents arrive in our offices, our laboratory until the conclusion of the work ... let's say specifically in this case of biology, but also applicable to other laboratories, following very specific procedures, which are pretty standard ones that provide a best practice analysis and say a good work practice, so every step of work will follow the rules, just very specific procedures that are indicated by ...

Q. - To explain to the Court, perhaps because I have informed me, who gives this certification to the 9001?

ANSWER - It is an external certification body.

Q. - Are there any labs that already have this certification?

ANSWER - I think some of the laboratories of universities, yes, some universities have in their laboratories, in particular, the certifications of this kind, then there is another that is just special ...

Q. - Now we come to the second, now I can tell, for now I wanted to stop at 9001, so the 9001 is a quality certification, the procedures that you have described before, the beginning of his testimony that, at the time have been implemented it is fair to say that 9001 did not have the certification?

ANSWER - No, had not we still have the certification.

Q. - Do not you have more.

ANSWER - The will in the near future.

Q. - What interests me for now defending him, then ...

ANSWER - Yes.

Q. - So there was no time. Then switch to the other certification, if you can explain, we've talked about this certification is the certification for now ... the procedures are correct.

ANSWER - Yes.

Q. - The sequence is what I have said, are certified by an entity, rather than what is ISO 17025?

ANSWER - It is a certification that applies in particular to the findings of laboratory technicians, so in terms more specifically say how to say ... (inc.) to this standard, called ISO this evidence, so any lab test, so any analysis that procedures he performs, not only have to say ... as codified procedures, but are also certified with the tools and equipment that have to interact with this analysis, so I will not know, I calibrate the SCALE weighs a reagent, I will have the certification in a reagent that I use, that I will have the brochures I certify that the reagent has been produced in accordance with these quality standards, and therefore the whole chain of analysis that underlies these screening methods laboratory specifically.

Q. - To have these certifications gives the guarantee of good results?

ANSWER - Yes.

Q. - With respect to these two certifications is one of two that is more significant than the other, the 9001 or 17025?

RESPONSE - In terms of laboratory work that is most definitely the 17025 relevant to laboratory work.

Q. - So it is safe to say, to explain to them that the weight of 17025 is about how one thing ... that's what you do.

ANSWER - Yes.

Q. - While the first is the sequence of procedures?

ANSWER - Yes, say the flow of work, here, to put it in a little 'more general, the workflow because it also affects their handling secretarial work, for example, so it has nothing to do with laboratories, 9001 to implement the various companies that do not even have anything to do with ...

Q. - And you also have the 17025 to get it moving?

ANSWER - Yes, we say we are proceeding in a manner later than the 9001.

Q. - Why do not yet have them, what to do to get these certifications?

ANSWER - We must implement procedures need to be put in writing things that are perhaps already made, though, in fact, there is need to put in writing because there is an external certification body which shall have cognizance, then something must be implemented writing, maybe even highlighted the laboratory staff is responsible for one thing rather than another and that fact has the responsibility to implement these procedures.

Q. - The procedures that she had described to us at the beginning of his slides, and then of its sequence, is a process ... maybe if we go back to the very first slide so I have a question more precise otherwise then maybe ...

ANSWER - Yes.

Q. - Just beginning the beginning.

ANSWER - These?

Q. - Look at you can stop, perfect.

ANSWER - This?

Q. - Yes What she writes here is the procedure protocol, what you did, that is, what is this?

ANSWER - This is a procedure that is implemented by all laboratories involved in forensic genetics to make this type of analysis, so ...

PRESIDENT - (Unintelligible it off microphone).

ANSWER - Yes.

Q. - You better say it for transcription.

ANSWER - Yes, the procedures that are shown in slide 10, that is if you do not implement these procedures can not work, that you can not extract DNA, quantify, so they are transactions that have little to do operations as if I can do because I have the right tool for quantification, the reagent I suitable, suitable for the workshop I do, then as I have the equipment and qualified people, suited to carry out that activity.

Q. - If we go to the next slide I think, no, maybe even the next. No, it was then the previous one in which he spoke of the analysis ... this is perfect. I read it says, in fact, that after this DNA is extracted in order to know it quantifies the amount of DNA.

ANSWER - Yes.

Q. - And if I remember correctly she spoke first of generic and specific analysis and quantification of the track.

ANSWER - Yes.

Q. - These procedures with regard to the small hook on the track I found illustrates how were they made?

ANSWER - Following the protocols ...

Q. - The quantification of the track on the hook.

ANSWER - Using the Applied Biosystems kits Quantifiler.

Q. - And what is the amount, exactly?

ANSWER - I'm sorry, I do not understand the quantity of what? Extract total DNA?

Q. - Yes, yes.

ANSWER - At the moment I do not have, however, say, a suitable amount is then amplified to have, because you had the amplified.

Q. - Yes, you know, the two of us we have already seen in the preliminary hearing, one of the things that we point out is the amount of tracks I was interested to know how this track has been quantified.

ANSWER - With the right software for the quantification of which is included in the instrument virtually, in 7700 we use.

Q. - Yes, what I ask is this: considering that we are talking about, he told her, a track on the hooks, is that correct?

ANSWER - Yes.

Q. - Why is there no DNA that you have referred to urge on or stoffetta, right?

ANSWER - That's right.

Q. - Neither the bra.

ANSWER - That's right.

Q. - So considering that we are therefore talking about a DNA that is only on the hooks I wanted to know what the amount.

ANSWER - I can not say, numerically me I can not say, surely it was ... because the amplification product is an absolutely everything we say good quality, I suppose that at least in the tube amp was a nanogram of total DNA .

Q. - But she understands that is a supposition, I wanted to know if you can give me the documentation of this.

REPLY - Ah, the quantification of the documentation, yes, but not right now though, unfortunately, that is numerically the number that came out of the analysis software I do not have it now.

Q. - Are you still able to produce the amount?

ANSWER - Yes, the amount, yes.

Q. - So you can tell us how many tracks there?

ANSWER - The total DNA was, because there is a mix, I can not distinguish quantitatively the victim's DNA from the DNA of Sollecito, I can tell ... actually, I can make a quantitative relationship between the two DNA only seeing the electropherogram, then I saw the electropherogram I estimated a ratio of 1 to 6, that the victim is 6 times more DNA of Sollecito, but ...

Q. - Let's start to say this, so within the track we found a hook on the amount of DNA attached to the victim 6 times more than the urge?

ANSWER - Yes.

DEMAND - The quantity, however, the number is not can tell me?

ANSWER - Total, no, I do not have here.

Q. - Okay. After this, let's get back on this, specifically on the hook, these were general questions, as well as general question is this, she said she came to ... it is also a political statement ...

ANSWER - Yes, from the 19.00 ...

Q. - 19.00/20.00 if I am correct that you have read.

ANSWER - Yes.

Q. - But I think it's peaceful, 19.00/20.00 I think I read there.

ANSWER - Yes.

Q. - Then you enter the house on Via Della Pergola at 19.00/20.00, satisfied that she had entered before he joined the Scientific Police in Perugia?

ANSWER - Yes, there are images.

Q. - Can you tell us, knows or has been reported that type of activity prior to his speech did the Scientific Police in Perugia?

ANSWER - Yes, he pretty much set the scene of the crime, then cataloged according to the procedure is a habit that has scored just visit the rooms, the findings, highlighted in the areas of greatest interest, which could be the victim's quilt , tracks down the hall, then put a nomenclature we say, here, is that the number of letters in some places.

Q. - When she came, then, she has already found these letters placed?

ANSWER - Yes, you can also see, yes.

Q. - The video footage, of which we have the diskettes and we have also seen the famous last disk was made before his arrival, he arrived at the same time?

ANSWER - A part of that recovery has been done previously, it is also the time when it starts looking in the afternoon, whereas then the rest of the movie, of course continues and extends to the night when then suspend activities.

Q. - Why have you stayed with this highlight video before the luminol these tracks, because the video ...

ANSWER - No, wait, she mixes the two surveys.

Q. - What next.

ANSWER - Yes.

Q. - In what is the last of 18 that where ...

REPLY - Oh, I thought we were talking about ...

Q. - No, the video footage in general, we have seen the end because there was a misunderstanding as to this disk now, only now we have seen, in the second survey continue shooting as you know.

ANSWER - Yes, yes.

PRESIDENT - The second visit ...

ANSWER - On December 18.

Q. - So we have two surveys and are all taken, however, the defense had not had the diskette December 18, we have now.

PROSECUTOR - Dr. Comfortable - No, the last part.

Q. - the last part of December 18, in the latter part of December 18th I expect to find, because I had not found anything else, I expected to find the part where you put the luminol.

ANSWER - How do video capture?

Q. - Yes.

ANSWER - It is not possible to resume the video highlighting the luminol, which is technically not possible.

Q. - Why?

ANSWER - Why do images that we have done and that is usually run during an inspection of luminol, and then highlight the tracks have very specific technical needs, for example, that a long exposure, so the camera must remain with the objective opened at least, if I remember correctly, for a 20 to 30 seconds, then an extremely long time for it to be impressed by the luminescence is

still weak, so much so that one must do everything in complete darkness would otherwise not be seen ...

Q. - You mean that there are cameras capable of shooting even in the dark instead of these activities?

ANSWER - as I know, but I'm not an expert in photography, video, do not exist, but I could be wrong, or at least we have not at our offices.

QUESTION - Can we take photos of Meredith's room at the first inspection, the one where you see the letters?

ANSWER - Yes, this or another?

Q. - Precisely the room, there is one in which you can see the room ...

ANSWER - Yes.

Q. - There she is, perfect. It is fair to say that when she arrived she saw this environment as well, with these letters already placed?

ANSWER - Yes.

PRESIDENT - The Slide 38.

ANSWER - Yes, 38, slide 38.

Q. - I do not read the number.

ANSWER - It is here, is black.

Q. - Yes, yes, problems with my optician. Yes These numbers and these ... these letters she finds them already placed?

ANSWER - Yes.

Questions - is already placed by the Scientific Police in Perugia?

ANSWER - Yes, because this is precisely the setting up of the crime scene.

Q. - You said before that among the various objects that we see there is this bra, which she called the first interesting, because it's interesting?

ANSWER - It is interesting to say before you analyze it for a reason, after the analysis for another reason.

QUESTION: - Prior to speaking.

RESPONSE - Before the analysis was interesting for one reason because it was obvious, as I said, very visual analysis, so that the right of first impact of this bra straps are clearly frayed, were then shell out at least.

Q. - It is interesting because it was frayed as if there was something about this ... and because there was too cut ...

ANSWER - Because there was also the one hand, precisely in this ... I do not know if you see, you see the other slide.

Q. - It does not matter, so they know them, have seen it.

ANSWER - There was indeed an area that not only was missing a piece but had been cleanly severed.

Q. - And you immediately aware that there is this peculiarity on the bra?

ANSWER - Yes.

Q. - But she noted that it lacked a little bit of bra tried around to see where this little piece is missing?

ANSWER - Near ... that there were so many things around, then surely it was very chaotic.

Q. - The room we saw it all is not great.

ANSWER - No, but there were so many things, that room was a mess when we arrived, even when the corpse was later discovered there were many exhibits, so it's obvious that I raised the problem of search, is natural, but we have given priority to everything ...

Q. - How has tried this little piece of bra is missing?

ANSWER - visually, as they raised their findings, many findings were overlapping each other, so as not rummaging ... of course, as the findings rose from the ground, especially there were many exhibits that were on the floor , then as I raised my findings, I and other colleagues of course, got up and finding the remains that were on the ground obviously did care about what an artifact hidden underneath.

Q. - In any case, so it's fair to say that you were already looking for this piece of bra that she was ...

RESPONSE - Not specifically, I realized that I was missing ... but of course since there were still other things that were obvious and had to be taken, such as the slip rather than the sampling of blood on the wall, rather than the tissues ...

Q. - So you realize that this little piece of cloth was cut, it looks though ...

ANSWER - I try but it was not my priority search.

Q. - It was not the priority?

ANSWER - No, because the priority was to ... as the bra is so obvious that it was perhaps the first artefact practically, I do not remember, just before it could be immediately found the body, before it could be given access to medical Legal first for the inspections and so on, so it was definitely one of the things that was worth trying but it was not the priority.

Q. - Some of you have you said "Let this piece may be relevant ...".

ANSWER - I might have said to the person ... I do not remember, in particular, has not been definitely told everyone what to tell you how alert, here, "try this particular thing", maybe also to have told the person I ... we say that helped me and then I was bagging the things I said maybe, but not specifically.

Q. - Are you able to affirm or exclude it at this time, before it was moved to the victim's body, the bra was a little bit and was in the area, I can say, excludes, is not able to say " I have looked at so attentively? "

ANSWER - Well, as you can see the remains are so many on the ground, so I definitely did not see it visually with the cloth hook, did not see it ...

PRESIDENT - I do not see it.

ANSWER - I do not see him, it was visually quite a scene full of ... maybe you do not have the duvet and there is no cognizance because the victim yet, but once removed the duvet there are many exhibits on the side towards the window There are still many pieces piled up, here, just maybe this area was photographed and taken a more careful and then you can see that there are

many findings that the fragment was not definitely priority over everything else, that's for sure, because had to take some finds, because they were all removed in the first survey, some findings were that maybe that could be considered interesting and useful, then maybe the little bit of bra, here, then, of course, was then seen, photographed, filmed .

Q. - You were physically present when the corpse was lifted?

ANSWER - Yes, yes, more than when it was turned up.

Q. - I mean let's say physically moved from that position.

ANSWER - Yes, yes.

Q. - Were you present?

ANSWER - Yes, yes, because he was the coroner was there.

Q. - When was married to the corpse under the corpse, in the back there was this little piece of bra?

ANSWER - No, I have not seen it. No. Except that under the body when you see the pictures was pretty much a red floor, was filled with blood, with many strands of hair, there was a pillow, a piece of bra was definitely not seen by me.

Q. - Also because I say raising it anyway if there was blood and strands of hair if you had to pick up something if you'd taken the guess was under?

ANSWER - Well, of course, we picked the locks of hair.

Q. - was the next question, since you have picked the locks of hair if taken would have been under?

ANSWER - Yes.

Q. - The Sferon is an object that is also able to photograph small objects?

ANSWER - Yes, because you can zoom.

Q. - Well, very good, because you can zoom.

ANSWER - Yes.

Q. - You have never seen Sferon through, maybe a photo taken while she was not there, this little piece of bra?

ANSWER - No.

Q. - Even in Sferon?

ANSWER - No.

Q. - So if we go to see all the photos of Sferon do not see it?

ANSWER - I have not seen.

Q. - He said before he was found a large number of tracks, said ...

RESPONSE - 460 if I remember correctly.

Q. - On the two tracks 460 are attributable to cigarette urge ...

RESPONSE - In the house?

Q. - In the house. Yes, in the house, just speak of home, in Meredith's house, etc.., We have what you have given on the stump.

ANSWER - Mixed though.

REQUEST - Mixed, and then found the track on the hook, this is correct?

ANSWER - Yes.

Q. - Now we move too slowly to this. From the vision of the movie that we have, of shooting the movie in reality we see that this hook, this piece of fabric with the hook, because then we have to distinguish, because the piece of cloth and has traces of the hook has other tracks.

ANSWER - Yes, yes, indeed.

Q. - Then the piece of fabric with the hook is identified by the camera that we have on November 3 at 2:24 ...

ANSWER - Yes, the night.

Q. - As you know there's an hour ...

ANSWER - One hour forward.

Q. - I mean, let's say for the Court, know that in time of the camera, I do not know why, however, is one hour ahead, but no one disputes is not disputed.

ANSWER - Yes, daylight saving time.

Q. - You were there when this step was identification at night, for now we are talking about November 3, of this piece?

ANSWER - I was not there, but I did notice.

Q. - Who has given and who has decided to do photography?

ANSWER - So no one has decided to photograph it because it is normal practice for anyone who is more or less ... as we say as a photographer in the survey has on its own activities in photography, because it is a kind of repertoire the picture, then finding pictures, so was the photographer taking pictures of themselves say.

Q. - But she mentioned it to him who does not remember the name?

ANSWER - ...

Q. - A person of Scientific Police?

ANSWER - Yes, yes, of course. Yes, yes, of course, but I do not remember exactly.

QUESTION - The question is this: seeing as we have said that the bra had been told the bra is important, even tried this little piece of the bra if he is reported as never having found last night in this little piece of bra is not immediately finding?

ANSWER - Because like I said ... it was was not important because it was a missing piece of the bra but we took all the bra, so you might say we left out for no particular reason, we have all the bra, as we have left out the piece we missed the bag, my jacket, then look at other exhibits that case, the chance would have it, then gave the results, ie there is a specific reason, having had plenty of bra ... maybe if it was upside down then yes, that is, if I was the first piece and I recognized that it was a bit of bra, because then you find it on their own without having first seen the bra might go unnoticed, but maybe if it was the opposite, behold, I had to ask the question ...

Q. - Since she first said "I tried, once one finds it takes him."

ANSWER - No, wait I have not actually said that, I said: "Certainly we set as a goal ..." that we seek, but not with sorrow, behold, that is, Let's get him if we see it, if that is the case right away ... if we find it useful then maybe other items as they were left out ... let's say that having full knowledge of the following ...

Q. - When was left where it was located?

ANSWER - It was there where he left.

Q. - Where were you?

ANSWER - It was under the pillow.

Q. - In what pillow?

ANSWER - The pillow where she was leaning over the victim.

Q. - So, here, we explain exactly where it was found?

ANSWER - The first time?

Q. - Yes, the first time.

ANSWER - Is there anyone who has lifted the pillow and emphasized the piece, just.

Q. - Then you have it photographed and you have it left there?

ANSWER - Yes.

Q. - So far as this is the piece of cloth was left under the pillow, he was left in the place where it was ...

RESPONSE - There has never been touched in the first inspection, that was photographed, documented enough.

Q. - You know that this piece of bra was found in another area of the room and if so where?

ANSWER - It was found later in the second survey near the desk, we see that here, more or less around here, seeing that front at this point, below this mat.

Q. - So it is safe to say that December 18 was found under the mat this piece of cloth.

ANSWER - Yes.

Q. - When you left the night of Nov. 2 in an area away what?

ANSWER - A meter, a meter and a half.

Q. - Are you able to say why, and how there was this shift in this small exhibit?

ANSWER - No, I can not say.

Q. - According to the protocols of the tracks, what is not collected and preserved so it can be moved or must remain at his post?

ANSWER - It depends on the needs, in the sense that if you need to carry out a search from the point of view of the squad might risk a finding that could be moved there.

Q. - In fact we came to this. She knows exactly where the night was sighted the hook, the third, at the time was finding, and then December 18, in these 46 days many people are into that room and if there were some searches, the ransacked, the movement of objects?

ANSWER - I do not know how many people came into that room, absolutely, I can give an account of those people I saw in my presence in the two moments in the two surveys, then those who came, who moved the objects and why the 'did not ...

Q. - You know that there was a search?

ANSWER - Yes, I heard but I have not read the documents, I know it's been done a search but did not know at what precise point or not ... and I know from the squad but I do not know by whom.

Q. - You know it's been done a search of Meredith's room or not?

ANSWER - No, no search warrant, I have deduced from the displacement of the objects but do not know exactly which room was made in the search, no.

Q. - for now continue on November 3, on the night of November 2 to 3, you had the gloves ...

ANSWER - Yes.

Q. - The shoes, you turned the whole house that night?

ANSWER - It depends on who, operators of video - photos that those who have taken over the house, so did the whole movie ...

QUESTION - How many were you?

ANSWER - When I came along?

Q. - Yes.

ANSWER - A dozen people in the house, roughly, but not ...

Q. - I am repeating the questions but because of her ... I'm sorry because I had already answered before.

RESPONSE - Not all present together because we say there was need to do things rather than others, so the coroner was perhaps in a moment, in another not, and so on.

Q. - So it's fair to say that you were not all present simultaneously in the same room?

ANSWER - Yes, not everyone in the same room simultaneously.

Q. - You could walk into a room and then go back?

ANSWER - It depends for what reason, but you could do, if there was a necessity, yes, but if there was no need ... I mean why do it.

Q. - It was possible to return with the same socks or changing your shoes?

ANSWER - That is, move from one room to another with the same shoes?

Q. - Yes.

ANSWER - Yes, but there was no necessity to do so, however, at least when I was there because all the attention was focused on the victim's room, then the other rooms ...

Q. - Do you when I asked the question I had answered in a preliminary hearing ... I told her: "So basically those who walked into a room and then out would come into the room?" - "Yes, he could return."

ANSWER - It could come but then he did not actually know, that was not there ... I mean no one said "Do not go into that room," but there was, moreover, why not get in because we were all ...

Q. - You have not seen anyone who has left the room and then he came back?

REPLY - But which ...

PRESIDENT - (Unintelligible it off microphone).

ANSWER - I was saying ... So that no one had told anyone "Do not go into that room and not come out" I mean, there had been none of these provisions because there was no need to go in another room other than that where the victim had focused the attention of those who were active at that time.

Q. - Are you able to exclude the condition or do not know if you come back in that room?

ANSWER - I'm sorry I did not understand the question.

Q. - Given that you could, she said: "You could in theory if there was a reason," she can say: "I can say with certainty if it happened or if this did not happen"?

REPLY - But what room? That is, by any ...

Q. - If you entered and left the room that we're seeing here.

ANSWER - Well, yes ... then, sorry, the suitcases and all our equipment was placed outside.

Q. - Exactly as you see in the video I wanted to ...

ANSWER - It is obvious, there were those who passed the envelopes, those who passed the test tubes, those who passed the paper to find, that we could not leave the envelopes of the piece and finds on that floor so it is obvious that there were people who were at least along the corridor and earning the threshold output.

Q. - It was something I saw in the movie but I liked a description.

ANSWER - Yes, yes.

Q. - The shoes were then changed only if you left the house ...

RESPONSE - From the house.

Q. - Do not, however, if a person walked into the hall, entered the room of Meredith, and could, is this correct?

ANSWER - Yes, there was no reason.

Q. - According to the protocols with which one must wonder what the repertoire an object being photographed should be in some way described a report?

ANSWER - No, not necessarily.

Q. - There may therefore be photos with something that is not ...

ANSWER - Yes, it is described in the report only what is acquired.

Q. - At this point I wanted to ask with regard to the problem which we have plenty of gloves, but we talked about repeated questions on the gloves, in fact I had already made preliminary hearing, however, I ask you this: you had so-called single-use gloves.

ANSWER - Yes.

Q. - Can you explain what they are disposable gloves, disposable because they are called?

ANSWER - So the gloves are used for two reasons, first one for say preserving the safety from possible infections of people involved, so I protect it with kid gloves, even in the laboratory so happens, to protect yourself with gloves because obviously I do not want come into contact with all biological substances of unknown origin which definitely come in contact, the second reason is because I do not want you touching different things I can inadvertently mixing a track of a biological specimen with another, then, of course, we use disposable gloves in all fact-finding visits to work and repertoire say and touch the exhibits, to take you to sample.

Q. - And what course to ensure the authenticity of the find?

ANSWER - Yes, because having the operator DNA, cells on the course of his body he could also pass on his DNA findings.

Q. - As you can transfer the DNA findings on whether a person has contaminated gloves, this is correct?

ANSWER - Sloppy what? Dust, no.

Q. - Of DNA.

REPLY - But the DNA you must have somewhere ...

Q. - I'm asking in the abstract if I ...

ANSWER - DNA, of course, depends on the amount and touch on how the find though.

Q. - So I say in the abstract, then we see the case, in the abstract is correct to say that if I have a glove in the dirt somehow the DNA of Tom and touch this microphone I can leave this DNA, transfer of this microphone?

ANSWER - If this DNA, however, is on a fresh track, that watery, otherwise I if I have to say that ... the DNA dried in a dry matter content, which can be blood, saliva, anything, and I touch a I do not object I transfer the DNA, so much so that several samples were negative, that is, I even scratching the wall the second time I have not been successful for many reasons, but surely there was no DNA, was so obvious the blood, therefore, the first time we had also tested positive for blood, but of course the track was in any way altered, degraded, however, had something happened that while I am rubbing in some cases I do not get useful results.

PRESIDENT - (Unintelligible it off microphone).

ANSWER - I mean, I mean, let's say the DNA having a precise location, that is associated with cell or at least to the nuclei of cells, I initially biological trace in the time of formation is a track I call fresh organic, that is, in sense has a certain water content, because all our body fluids have a large amount of water, then the blood, semen, saliva, skin also say in a certain way, but it is a somewhat 'different , has a water content, now if I touch a fresh track is obvious, it's obvious, I will soil the hands with the liquid containing the DNA, but if I touch a track dry, or dry, because the old because now it is dried in a precise manner, that which can not retain any cash transfer will facilitate the transfer of cells from one point to another is very difficult to transfer biological substance ... so much so that for example there is another example, we can do, just visit there in an ashtray, which I mentioned before, with six cigarette butts, cigarette butts, of course these inevitably, though perhaps not seen in a very precise, these butts are all in the same ashtray, probably absolutely say is almost certain that they came in contact with each other these cigarette butts, because if I put out a cigarette butt maybe the next collision, nevertheless these butts have different genetic results, three have a genetic profile of a man, two have the genetic profile of a woman and another gave a mixed genetic profile, so I want to say is not so easy to transfer genetic material from one point to another, depending on how the findings are in contact, how long, just forces that act between the finds, and above all the time, that is, if I even rub a dry track, I put it somewhere and I do touch on this point for an infinite time there will be no transfer, but we have seen with many findings, even the same sock, there is definitely a sock on which I left running because it is a very important result from a genetic perspective, there's a sock in the second survey was found wrapped in this blue carpet, where we say was found then the piece of cloth with hooks, this finding on three samples, so it was wrapped, was harnessed in this pad, two of three samples were positive for DNA of the victim, so the blood of the victim, but a sample was negative, with the elastic edge on this sample, so where I assumed that I could identify the person who had worn, because the elastic rubbing cell of the person who collects sock, yet this is

not the DNA I ' I found, so it's not a foregone the transfer DNA, is not so simple because we need to have a lot of conditions that both the quantity and ... is also the time of formation of the track.

Q. - She says on page 52 in the preliminary hearing all these questions when we say "It is quite possible if one has touched on something that is infused, which is characterized by a DNA of a type once and then those same gloved hands are to touch something else? "- she replied:" Yes, if it is drenched, yes. "

ANSWER - If you soaked soaked ... that means for me that is full of something organic and I rub.

Q. - Okay, let's move to another question, if it comes to cell exfoliation, if I have a glove in some way with cell exfoliation ...

ANSWER - external or internal But excuse me, I've got two for me ...

Q. - External.

ANSWER - I also have cells that ... the operator does not know its application.

Q. - I do I've got a hand to a glove over the glove I've got cell exfoliation, exfoliation of cells can be transferred, in the abstract is one thing that could happen or not?

RESPONSE - In the abstract you can transfer whatever you have to see then in practice.

Q. - There are things one can say in the abstract does not happen, can happen ...

ANSWER - I can not be excluded, I do not see the disintegration of the cells so I can not exclude, however, these cells flaking ... I'm sorry, I should be with this glove to rub a surface, for example, a person's back a little 'time, ... pressing fairly hard, scratching due ol'avrei this person, me with the glove would have caused scratching ...

Q. - I'm sorry if I with gloves that are contaminated with cells of flaking going to touch and to take just the hook I leave ... if I take the hook, if I take the stuff I can not leave, taking the hook, the hook cell exfoliation ?

ANSWER - I can point out one thing, the concept of disintegration of cells? Which perhaps is the One moment ...

Q. - Please.

ANSWER - The disintegration of cells that I have called my cell exfoliation report does not really flaking skin cells that are naturally on the skin because they are horny plates and then continued vitality of our skin, that is, with its normal cycle of life continually lose cells, horny plates, of course, no one touches anyone, and if reforming other by deep layers of the skin, I am not referring to those cells because these cells is not even possible to extract DNA, because the core is virtually dead, keratinized cells are a bit 'as they are our hair, so I flaking of cells in each case, in every section of the report I point to cells that presumably for the position in which they were found on the finding may suggest to a friction, that is, I have overcome the barrier say horny, horny strip death of my skin to go to the layers, so that's why I said that I should rub, otherwise I do not get those cells, it is as if I were do a scrub, so to speak, so that's why I linked to your question.

QUESTION - The question that I do is this: If I've got a cell exfoliation of hands and I rub my hands with her or say hello, they transfer these cells?

ANSWER - We must say goodbye in a very intense for a while 'time.

Q. - If I have these cells flaking on a glove and touch with a strong hook transfer it?

ANSWER - If I have the right cells, yes, I can transfer.

Q. - Do you remember if someone has touched gloves with just the bra hooks?

ANSWER - That was me, me and another operator were to touch ...

Q. - Since her at preliminary hearing when I asked: "Do you know these gloves have been touched with the hooks of the bra?" Her in the preliminary hearing he said "No".

ANSWER - No, in fact I was saying, so I remember it because it was me, have been touched between the hooks, that is, when he was holding was the stoffetta that maybe is not very clear because it still gives the glove a certain space, not is perfectly fitting, there is still stoffetta that ... even if ...

Q. - Then you say "I have not touched the stoffetta hooks"?

ANSWER - No, I'm saying ...

PRESIDENT - (Unintelligible it off microphone).

Q. - I finish the question, in the preliminary hearing I asked her: "She has touched gloves with the hooks?" - And she said, is on record and ask that the acquisition - "No hooks, no" , now I request: she touched with gloves on the hooks?

ANSWER - So I can tell you: it is also possible, I do not remember it perfectly, I remember that I have definitely reached between the cloth, because I tried to avoid, if he were touched that I would not rule it out.

Q. - I was a ride I'll show the video.

ANSWER - Yes.

PRESIDENT - We can go on for half an hour and then ...

DEFENCE - Mr. Good Morning - What should I do?

PRESIDENT - suspend, then resume ...

DEFENSE - Attorney Hello - As you wish, that I asked ...

ANSWER - suspend now?

PRESIDENT - No, no, let's go for half an hour, however, said that the arguments are to be treated in a unified way ...

DEFENCE - Mr. Good morning - So we want to stop now?

PRESIDENT - Now, just do not.

DEFENCE - Mr. Good morning - then after that the trace is complicated.

PRESIDENT - It is a topic ...

DEFENSE - Attorney Hello - Yes, it is clear that the long, President, is the process!

ANSWER - So cancel.

DEFENCE - Mr. Good morning - then nothing, if this is so long ...

PRESIDENT - Perhaps then we return to the issue and ...

DEFENCE - Mr. Good morning - because he wants to be treated in a unified way in a while '.

PRESIDENT - Perhaps it is appropriate, I do not know, for the parties to have an assessment ...

ANSWER - I'll then reissue the command.

DEFENCE - Mr. Good morning - then this part of the resume later.

PRESIDENT - Yes, we can set aside, please.

Q. - We continue the part that we were doing before, this is easier to do quickly. She was present in two visits, first we said that since Nov. 2 and then the second of December 18, between the two searches, and when she came ... the second visit, the second time she came I can Please describe what has been seen other than the fact that there were searches?Yeah I did it this description, however, here, if I can repeat that kind of environment changes that you have found. We are speaking for the Court's second visit, that is, when you enter after 46 days.

ANSWER - Yes, from the entrance then first, say by going to the apartment at the residence was obvious the mattress, almost the victim, I knew he was the victim because they were turning it cuts that I had made.

Q. - I?

ANSWER - The cuts, cuts the fabric, it has made two cuts, two samples, so it was definitely the mattress ...

PRESIDENT - I'm sorry, to remove ...

ANSWER - To remove traces of blood substance that then, in fact, have resulted in blood substance, there are also slightly visible, as are the O, I do not know if you can sketch out ... this is just that deep down, okay , however there are two tracks ...

Q. - This mattress that we see in this picture, so the Court sees it.

ANSWER - Yes, wait a minute that ...

Q. - Perhaps it was even bigger, okay, it does not matter.

ANSWER - Yes, maybe ... well, for example, these are the points where they were finding the tracks, though, unfortunately, can not see right.

Q. - But this mattress so she left when she went away after the first inspection?

ANSWER - Yes, of course objects ... without the towel that was over, because that was taken, the specimen 8, this to be clear, this was removed, was transported in the office, but the bag was left because it is was taken in the second survey.

Q. - Why do you basically went, what you saw on the mattress ... there are a number of objects, finding what you mean that you put in a bag and moves on.

ANSWER - Yes, and is cataloged in the report ...

Q. - It is cataloged, do not take what is left on the bed?

ANSWER - Yes.

Q. - So basically she had left the room in these conditions except for what was removed?

ANSWER - Yes, except what had been removed, we say.

Q. - With respect I can say this ... just the mattress has been found where?

ANSWER - On the couch in the apartment of the day.

Q. - Do you know who brought it out?

ANSWER - No.

Q. - Then?

ANSWER - Then ... then there were in fact the network instead of the mattress, that is, in fact you could see the network without the mattress.

Q. - What is stave?

ANSWER - The staves, exactly. Over this network with the staves, then we say no mattress on the bed clothes were ...

Q. - Where are the clothes?

ANSWER - In this phase of the inspection, I think that in this survey were the clothes of the cabinet or say or who we had not taken the first time, the second time we find a lot of clothes on top of the slats, then surely we find many clothes that are here, then the doors of which are resting on the door, then from the inside of the room against the door, but this I know for certain that is due to the fact that after my visit, then the latent fingerprint was also need to analyze the inside of the doors and then removed it to deal with the fact ... and then fail to reassemble it, here. Then other moves ... then we find the mat ...

Q. - Let's talk about the pad, the pad where it was initially? Here you can see, is not it?

ANSWER - Yes, yes, it was here. It was at that point where we see him in this position, then from the closet before the window, almost in this corner, toward the wall of the right wall.

Q. - This mat is what happened, where he found then?

ANSWER - You'll find it at a desk, then shifted by a meter.

Q. - Is this the mat under which it will be found a piece of cloth of the bra?

ANSWER - Yes.

Q. - So we have both a mat that is found in a different area, both in this piece floor mat on 18 different area?

ANSWER - Yes.

Q. - Of this rug was made of the pictures we saw.

ANSWER - Yes.

Q. - What was on this mat, what you saw?

ANSWER - Resting on top?

Q. - No, as a visual examination if you saw something, because you have made of the photographs, the ...

ANSWER - Well, but you can also see here, there are traces of blood, presumably because blood was not analyzed the mat.

QUESTION - The question is this, how is it that the mat was found with traces of blood was not analyzed either the first or even second time, as well as it was found that repertino?

ANSWER - Well, but has been found for example in another sock, were also found other things that do not are finding, that is not ...

Q. - In the mat what was found?

ANSWER - This sock I mentioned earlier, the survey classified as Z in finding, in the second spot and then I remember other things from the video, but I can not say specifically because they are things that were not taken, then the mat was wrapped c ' ... I do not know if they were pieces of paper, ie, receipts, anything like that, here, but I do not remember exactly.

Q. - Then we will see both the videos after the suspension, so we do see them too, because in fact my question is this: in the second survey focuses attention on the fact that this pad is raised and under are these things here.

ANSWER - Yes.

Q. - Why is this finding that is under the mat? The pad is soaked with blood, is above these things and not finding?

ANSWER - Why not ... I mean it was not deemed useful to me the mat repertoire, as it was deemed useful repertoire so many other things, that we must make a choice, you can not take everything so the choice was the mat, yes, Blood is dirty, but it was clear that it was covered in blood in an area where there was this huge streak of blood, so I expected that the victim was covered in blood, that is surely not have given priority to the mat over other objects as they could possibly be the sock could be worn by another person other than the victim, for example, or do not know, other things that were taken, the second sock, then coupled to the first, was then taken sweater, the blue, we say also that I was a little 'undecided whether to take or not, then I had to decide whether that found in a certain way, that is drenched in blood, especially on the neck area, there was a Cuff ... then turned the sweatshirt that was with both sleeves inward, so probably it was a fashion show or, indeed, always the same thing, maybe one the parade alone, however, here, the insurgency, which is a short some 'special, so ... that I have not considered it useful to the repertoire than other things.

Q. - What I asked was this: in the first survey and also the second visit I saw that you had, you see the movie, the precautions at the level of apparel and clothing.

ANSWER - Yes.

Q. - Can you tell me what were your clothes in the first and second inspection, if there were any differences, if you have ...

ANSWER - No, the same suits, same suits ...

Q. - Same suits, gloves ...

ANSWER - Same suits changed course, the same type of suits.

Q. - Yes. Masks?

ANSWER - the masks we took them off but sometimes also, of course, so you just do not talk or speak in a cautious manner not say ...

Q. - This, this type of clothing is required to prevent those who come from outside can contaminate an environment as usual.

ANSWER - Yes.

Q. - What I ask is this: but between the first and second visit if there was a raid with activities of searching, moving objects, etc.. At this point what it was seen that there was this new apparel however, was an entry by subjects who had a search?

ANSWER - in any case always serves first because I preserve my work, I do not care to say ... say work differently just because I can speculate that there may be inadvertent contamination brought by other parties, and this is one, therefore I would dress ever visit to the penny with all the precautions ...

Q. - According to ...

ANSWER - If you, excuse me, I also say tidings, tidings comparatively, because I was not there, however I do know that he told colleagues at the squad, but in general is said to colleagues "If you have to get used precautions to touch things, walking, then use the shoes, get this material, "then I feel, I want to say until proven otherwise, to exclude that they acted recklessly.

Q. - Moving objects, rummaging in the drawers in any way alter the environment or not completely alters the environment, if I drag a mattress from one room to another?

ANSWER - I'm sorry, I do not understand, alter the environment in which way? Alters the arrangement of objects, yes.

Q. - A level of purity of the environment and ...

ANSWER - If I do not ...

Q. - Let me finish the question.

ANSWER - Yes, sorry.

Q. - So at the level of authenticity of the scene of the crime she believes that it could be argued that the very same conditions she found when access to the first survey are the same that were found after 46 days although there was a search and other access?

ANSWER - the atmosphere was definitely different, it was changed, so that this may have led to say something that could affect the goodness ... how to say investigations following me that I can not neither affirm nor deny, of course I have no evidence that there is a contamination of other people, I mean that strangers butts in the ashtray I found that I want to say is plausible, if I do not empty the ashtrays every day, maybe I had some visits short, it was a house of boys So then, suddenly, all three of a person, both of another person, so it's not something contamination, the contamination should not be on three different butts, that is, the same DNA on three different and with the butts same type of result, then they are the same as I said the ashtray, so if they were contaminated with each other I should find so many mixed instead ...

Q. - But according to the protocols you can do a search and after making a repertoire and have guarantees of authenticity according to forensic genetics?

ANSWER - If colleagues have acted in a prudent why not, if I later move but do not bring anything from outside, so I do not enter the room to say something that comes from who knows what the situation, place, and not ... like saying do not use the tools, things that can affect the genuineness of the environment and thus can bring things that are absolutely out of control of my will ...

Q. - I ask based on what she knows happened in there that can say whether it was or not?

ANSWER - I can hardly say I do not know what happened between the two surveys, in addition to moving objects is no doubt that it happened, so ... I can not say that, we can assume, but you can make so many assumptions.

DEFENSE - Attorney Hello - President, for now I would stop if she agrees because now there's the movie, if that's all right.

PRESIDENT - Yes, okay.

ACTION - Excuse me, Mr. President, for not disturbing later, Mr. Patrick is away, I did just there to not disturb later.

This process is suspended.

This process is resumed.

PRESIDENT - (Unintelligible it off microphone).

DEFENSE - Attorney Hello - Yes, definitely yes.

PRESIDENT - (Unintelligible it off microphone).

Q. - Thank you, President. They are always Lawyer Hello. We continue, in a little 'I'll show you some parts of the shoot while I wanted to ask about what we were saying before the Sferon if she remembers precisely which was introduced this unit in the room that has three feet of the murder?

ANSWER - Yes.

Q. - And remember, if this device was introduced along with a suitcase that contained the relevant documentation?

ANSWER - Yes, let's say it contains the part of computer that is attached to Sferon, is inseparable.

Q. - Yes, it is a suitcase, we also have some photos, I see that we have already made. Under each foot had been inserted in this Sferon a glove, what is the reason to put these gloves?

ANSWER - Well, not physically of course make their own mess up the tripod every time you put in a room, presumably in a place where we can be of biological material, and blood, in that case there was a lot of blood so it protects a Accidental say ...

Q. - You know that this equipment had already been supported in all rooms, and even outside on the balcony?

ANSWER - I do not know if before or after, I believe that the first room that has been treated is that of the victim because it was the first finding, then as the raison d'être Sferon he say when you

use it before any other technical activities I think that the next steps are, that is, on the terrace I seem to remember that the next morning resumed ...

Q. - Do you know if similar attention and care, and to these pins, were also adopted for the bottom of this case, or if we see the movie such as this case will be supported with nothing underneath?

ANSWER - No, look again ... even though definitely not having done the shooting Sferon I swear I can not, however, was definitely the caution will be used for the Suitcase certainly more so because the foot has a small base, the bag will a larger base of support so I guess so, but I have not seen, here.

Q. - Can I show you a picture?

PRESIDENT - Please.

ANSWER - Yes, I think that this is the instrumentation of Sferon.

PRESIDENT - The photo, Lawyer?

Q. - It is a picture of the case, however, in this case I do not think there is any kind of precaution.

CIVIL PARTY - Where is this photo?

ANSWER - Where ...

Q. - It is usually taken to one of the photos ...

PRESIDENT - In this picture, recognizes this as a case ...

ANSWER - Yes, we say this is the equipment you need to record the images taken by ...

PRESIDENT - (Unintelligible it off microphone).

ANSWER - In this precise picture of the victim and we are in the room so this is just the ...

Q. - As I noted earlier that it seems to me that in this case there are precautions, there will be other now ...

ANSWER - Perhaps, I'm sorry, something that is coated, a sheet, a film underneath the case when it is supported on the ground, that is ...

Q. - Do you know if it is or is his hypothesis?

ANSWER - No, my guess is due to the fact that the tripod is protected and can not see why ...

PRESIDENT - Looking at this picture you can say, can not be excluded that there is security?

ANSWER - No, I can not say no, presumably because being excluded or below, the case is resting on top of this alleged protection and you can not see.

DEFENCE - Mr. Good Morning - The defense asked to produce this photograph.

PRESIDENT - The Parties to the show, please.

DEFENCE - Mr. Good morning - of course all the photos that we submit to the texts, and I say this for completeness, however, will repeat every time, photos are not ours, they are extrapolated from various movies, and of course, I do think that the doctor has recognized that it is the Sferon, it is another thing that we ...

ANSWER - No, no, that's it.

Q. - At this point we return to the problem of gloves that we had to deal first and then suspended in such a way that there was a moment of continuity of the questions, we said, first of all, these gloves you can say that during the inspection were changed every whenever an object has been touched?

ANSWER - If an object is very like the blood-soaked or has evidence suggesting that the gloves are so dirty, or if it's any object, like this glass I can move but not my DNA is coated onto say , depends on which object, in theory, yes, because all objects, especially in the first part have been acquired, a few have been touched and left there.

Q. - during the preliminary hearing she told me about that every time ... even now I find the page, during the preliminary hearing she said that whenever they were touched objects and then were finding disposable gloves were changed .

ANSWER - Yes, certainly in the first part, in the sense that I'm looking at the objects, I have to get them, so let's definitely the first part, then of course I can also have the gloves ...

Q. - But right here, to understand, so disposable glove includes a glove ... let's see first what is meant in the abstract and then tell me specifically what happened.

ANSWER - Yes.

Q. - So in the abstract for disposable glove includes a glove that is used only once for a single object or a glove that is used to search a whole, what is meant by disposable glove?

ANSWER - No, not an entire raid. For disposable glove means one thing above all that I can use and discard, then use it for what I need and then throw it. Specifically ...

Q. - Here, in particular.

ANSWER - If I, as has happened in the beginning, especially in the first day or second day, we say in the first inspection, I touch the objects that are particularly ... I mean clothes that are particularly soiled with blood, because we are talking about the jeans I do not know, the bra, a towel, I change gloves when I acquire them and take them.

Q. - So we do not have an automatic change of gloves every time we touch an object?

ANSWER - There is an assessment that is done, for example if I touch a find with tweezers, for example, I can touch it for ...

Q. - But follow me, it is obvious if the tweezers, I'm saying if I with the glove, because I think the DNA is invisible, right?

ANSWER - Yes.

Q. - The DNA can not be seen.

REPLY - But the track, yes, but, almost always.

Q. - Do you have a trace of DNA if the epithelial cells see?

ANSWER - No.

Q. - So that if I start to say I've got a glove when I hit an object and without realizing it I took the epithelial cells are seen or not?

ANSWER - No, you do not see the cells.

Q. - So if I I've got the epithelial cells which are not seen I do not know if the glove is dirty, is that correct?

ANSWER - Yes, yes.

Q. - Now I see some sequences. Here I think it's her or not?

ANSWER - Yes, yes.

Q. - You had, I think, a bracelet and a glove folded me confirmation?

ANSWER - The bracelet I do not know, maybe.

Q. - I'll show in a while '.

ANSWER - Perhaps, yes.

Q. - Here see, we also have some photos, I think, maybe I'll show you right now, we feel from these pictures, but now she will tell me if this is so or not, that the fold is seen inside the glove wristband and make us think , but she will confirm me or not, that she actually took the same gloves before the bra and then her panties.

ANSWER - I do not remember, it seems difficult, however I can not be excluded from these images, because, however, if I had taken with the same pair of gloves ... how do you see the bra was still touched by the hand that is stained with blood , so it's possible.

Q. - I want to know for now the use of gloves, then one day our consultants say the consequences.

ANSWER - Yes, you can.

Q. - You can tell me if he touched gloves with the same ...

ANSWER - In this ...

Q. - In this sequence, then we will see the other.

ANSWER - Yes, you can.

DEFENSE - Attorney Hello - I ask for more then acquire the possibility of using this sequence in the future I ask you to use photos that are always extracted from films, from which we can see that this turn on the gloves that the doctor is same as that when taken immediately after the panties.

PRESIDENT - maybe if we can somehow identify which give evidence of the sequence mentioned.

DEFENSE - Attorney Hello - We set a date if you wish.

CHAIRMAN - Yes.

CIVIL PARTY - Can we go back to identify the time of the first step?

DEFENSE - Attorney Hello - There is also written on the photo.

THE CIVIL - Since generally there is never written.

PRESIDENT - The Parties were able to see the pictures?

REQUEST - Then this was one of the examples that I wanted to bring to your attention, it is possible that we, of course, the Court is tiring, but it is possible that if we see the sequence are such that most objects are touched with the same gloves.

ANSWER - No, no more than one object, look.

Q. - Multiple objects not?

ANSWER - No, no more objects.

Q. - okay, a bit of 'we'll see. Meanwhile, I see then another sequence. The Scientific Police who worked there over that of Rome was to Perugia, so do not know now if its operator or one of Perugia, I'll say this for clarity, etc.., I wanted to ask if these ways of finding of these spots blood in his opinion and respect the protocols are correct or there is something you would have done differently.This is a rag with which the repertoire is made.

ANSWER - Yes, it is a piece of paper.

Q. - 16:45 to 16:46 for the movie and transcription. A little 'later there's another step and she will tell me if it considers this mode ...

PRESIDENT - Inspection of the November 3?

Q. - Inspection November 3, 16:49 minutes, are now the ones we're showing the witness. Here we see that if you see the little piece of blood is taken Chiazzette, you see.

ANSWER - Yes.

Q. - And then the same rag keeps rubbing, gets up and closes. Rifacciamolo see so the doctor says it is his operator. Here it is, here is the little piece and then is taken ristrusciata. This type of mode?

ANSWER - This type of mode which apparently can not seem suitable for the repertoire in reality it is in that context on the type of tracks that have been finding, I mean, in that specific case, the traces of the sink, bidet and traces of were clear traces of pink, then appeared as traces

definitely watered down, and all were apparently of the same origin because they were the drips, that is, if you ... of course, if she could see the edge of the sink ... and to say they had a drain plug sort of trickle down that started and ended at the drain, so does the ...

Q. - In the movie as he was finding seen in two different places.

ANSWER - Yes, maybe because they were more plentiful, that it is useless to spend all the paper along the path, finding the areas most intense red.

Q. - My question is this perhaps obvious: if by chance, hypothetically, had been a part of a person's blood and a portion of the blood of another person because you use the same map for both may not create however, some confusion?

ANSWER - I put them together, I put them together, but I'll explain in that particular context, then in the sink and bidet in particular, because it is not that we are talking about finding the track on tap and on cotton buds, that is, on two different points their physical, two different objects, we are talking of two samples made in two, separately of course, in two equal objects, that is, I find a track that is on an edge, then find another track that is on the drain or the sink or bidet, counts for little, but they appear to me, because I've seen those tracks, even if I did not find me, they appear almost continuously with a stream of rose water.

Q. - But I would ask each according to the protocols ...

ANSWER - You would not normally do. Normally you do not, then if they are contiguous, have something that connects them, then yes, also on the repertoire that I have made on the victim's door, the handle ...

Q. - In fact, then I would see this too, but now the question was too abstract to make it clear to the Court. It is true that international protocols provide in forensic genetics that each sample is taken to be an independent piece of paper in order to avoid duplication, this is correct?

ANSWER - It is correct if the tracks are not linked together.

Q. - The evaluation of the link she says made her who did the ...

ANSWER - No, but I also saw I in truth, that there was a trickle in both ...

PRESIDENT - This stream (unintelligible because the microphone off).

ANSWER - That's right because the two tracks respectively bidet and sink under gravity were more abundant on the edge and the drain cap, precisely because they were cast and then had evidently settled there, as compared to the mean slopes, ie the sink is bidets that have a large slope, some say, an oval, so it is obvious that it was going down a very thin thread of substance that we say is evidently accumulated upstream and downstream, but not on the way, maybe the movie can also be seen shortly, But this link was obvious to the eye.

PRESIDENT - Excuse me again on this subject, if they were from two different people there would be a sort of mixture?

ANSWER - Yes, there was this mixture, that is, I mingle, doing precisely this, two separate DNA that are leaving, but in this context to me illogical to think that two tracks that have the same particular aspect, there are two tracks blood as it is, that is absolutely intact blood that has not undergone any change with respect to at least say its color, here, because there you can appreciate only the color, but two tracks that seem clearly watered down, that is, a lot of blood, have very diluted however, in that context, two different backgrounds, it seems unlikely, however ...

INTERVENTION - can be.

ANSWER - Yes, but it may be unlikely.

Q. - Yes, but just to understand why I wanted to follow ... I refer to the question then that the President had done, if they were maybe two spots of different people, and to understand this in the abstract, then when I 's analyzes the electropherogram and do not say that I can break down, because the electropherogram is this?

ANSWER - It depends on the ratios.

Q. - But you can also say with the same rag that I take two blood spots and then do an electropherogram, the electropherogram is that chart, and I can not understand that they are two people, is that correct?

ANSWER - No, I can understand that they are two people, I see a mix.

Q. - When do the electropherogram ...

ANSWER - If I understand your question I'm sorry, I initially two tracks from two different individuals.

Q. - What I do not know if they are different or not.

RESPONSE - Two tracks.

Q. - Yes.

ANSWER - Then join the repertoire with this procedure, I find myself a profile analysis.

APPLICATION - An electropherogram.

ANSWER - This profile if the peaks belonging to a single person I see only one person can have peaks belonging to two different people because they were originally two different DNA, I realize that they are ... is a mixture, I realize that they are two different people.

Q. - I notice that they are two different people but when I have to study the peaks it is clear that there is a problem that now, well then we will enter between the overlap of the two people and statter.

ANSWER - Yes, yes, there may then be dependent on the genetic profile, there may be problems of interpretation.

Q. - Then we talk about why statter on statter They still have not said anything, I wanted to return to the speech that we had everything in the preliminary hearing, particularly in the preliminary hearing when in fact we were back on this first and I asked if it appears that with these gloves have just touched the hooks of her bra, she replies "No, I was touched, I saw the filming of course, has been touched the fabric of the hooks, if I remember from the hooks," I wanted, I told first, show them the way we make this sequence, answer me this if she keeps her answer.They will do as a matter of seconds while the recovery is here now and then you change ...

PRESIDENT - We are at December 18?

DEFENSE - Attorney Hello - This is the second visit of 18 December and we tell them ... after a minute, 34 and 16, the second part, second chapter. At this point there is this picture, where was she doing here?

ANSWER - I was somewhere else ...

Q. - And maybe it is called now?

ANSWER - I'll call, yes.

Q. - She is called, then come and identify something.

ANSWER - Yes.

Q. - Who is This?

ANSWER - I am.

Q. - This is her. Here, look at this point you get this ... they see the hooks?

ANSWER - Yes, yes.

Q. - For now, fabric, fabric for now.

ANSWER - Yes, yes, and then around.

Q. - Here, hooks, hooks, see? He sees the hooks?

ANSWER - A yes, the other is hidden by the thumb.

Q. - She tells me the answer given in preliminary hearing that she did not touch gloves with the hooks?

ANSWER - but did not suggest that I'm sorry ... this frame does not show ...

Q. - Okay, everyone asks how it feels.

PRESIDENT - She says she has not touched the hooks?

RESPONSE - In that frame, no, maybe I touched the ...

PRESIDENT - Thumb - Index ...

ANSWER - The other is virtually hidden, then it may have even touched them.

Q. - Here is someone who touches the hooks?

ANSWER - Yes, the operator that is illuminating.

Q. - So someone has touched those hooks?

ANSWER - Yes, you can.

Q. - No, it is possible, ie here ...

ANSWER - It is possible because there is.

DEFENSE - Attorney Hello - I still wonder about to acquire the portion of the preliminary hearing, is a transcript of the hearing, the doctor was heard already on this side, including on whether there are ...

PROSECUTOR - Dr. Comfortable - No, because there is no conflict of statements, then the prosecutor opposed confirmation because she had not personally touched the hooks, then when another operator has just said ... "Yes, this operator, yes, "there is no contrast.

ANSWER - We had, however, changed his gloves.

PROSECUTOR - Dr. Comfy - Let's go ahead at this point ...

PRESIDENT - On to ... (unintelligible because the microphone off).

DEFENCE - Mr. Good Morning - Dr. was heard in the preliminary hearing, first of all if there is ...

PROSECUTOR - Dr. Comfy - (Unintelligible it off microphone).

PRESIDENT - Excuse me, please, Lawyer.

DEFENCE - Mr. Good Morning - It's not that need to get angry, get angry every time one asks a question! I then I almost never get angry.

PRESIDENT - Please, Attorney, the request?

DEFENSE - Attorney Hello - Exactly my request is this: considering that in preliminary hearing has been made categorical statement with regard to the gloves and hooks, and I think the answer today ...

ANSWER - I'm sorry gloves ...

PRESIDENT - One moment, one moment. We have plenty of time for the defender, then after the opposition is ... (unintelligible because the microphone off). Please, Lawyer.

DEFENSE - Attorney Hello - There has been talk in the preliminary hearing of the problem and the contamination and gloves had been explicitly asked not having at that time before the movie, because we have only just shown, if it appeared that there was this possibility that these hooks were being touched physically could have been contaminated, etc.. and the answer is: "No, I was touched, I saw the shooting, has been touched the fabric of the hooks, if I remember one of the

hooks ", so it was in relation to the categorical statement that had not been touched with gloves the hooks, so I repeat that there is the contrast and ask the acquisition.

PRESIDENT - On this?

PROSECUTOR - Dr. Comfy - Look no opposition, even to ask that the Court order to acquire all of the deposition Stefanoni already had the outcome we know.

CHAIRMAN - If there is no consensus ...

DEFENSE - Attorney Hello - There is a consensus.

CHAIRMAN - There is a consensus of all Parties to be gained from the deposition of Dr. Stefanoni made entirely in the preliminary ...

DEFENCE - Mr. Good Morning - October 18.

ANSWER - No, October 4.

PRESIDENT - During the preliminary hearing.

DEFENCE - Mr. Good Morning - Now look, when we finish ...

PROSECUTOR - Dr. Comfy - October 4.

PRESIDENT - Then there is the consent of all parties and the Court shall have them for the acquisition of usability. Please, Lawyer.

Q. - With respect to this picture is that this operator who holds these hooks had just changed his gloves, he saw it?

ANSWER - Yes, because we were ... I repeat, as I said before, of the hearing, both me and tell him we were entering the room only to help at this stage this hook, so there were just changed and he with torch was watching where he could be, then say he was looking more carefully.

Q. - I do that in the movie is never seen you change gloves.

REPLY - But it is a dead time, ie in the sense that the movie is like saying ... to document any technical activity, not that I change gloves, or do I ...

Q. - So the movie ... if I do an analysis of the movie the movie is outstanding every time you lift up the gloves?

REPLY - But every time I have to take maybe one thing is useless to continue to film, that does not say so, the movie is made, however, for the exclusive use to watch our finding that again, to see where he was finding, to see what was the situation at one point, that has this feature, but to document the goodness of our actions towards third parties, has mainly this purpose, because no one obliges the operator of the Scientific Police ...

Q. - I'm sorry, you're saying no one forces him, you know very well ...

ANSWER - No ...

Q. - Do you know what to expect international protocols on DNA and the law now provide for exactly the film technology, so there is something so ...

ANSWER - We do not have law again ...

Q. - Yes, but I do not think such a difficult thing.

ANSWER - No, but we in fact we always do, that the video recording, we do also Sferon, imagine!

PRESIDENT - Dr., in this case the gloves had just been changed?

ANSWER - Yes, because we were just coming in, we did some 'cleaning of ... how to say, the others had a little' taken the bulk of the clothes, the things that littered ...

Q. - And so now had just been changed, right now.

ANSWER - Yes, because we were looking now with more space, we say more ...

Q. - So then when we see the movie in some way we can with an expert to see if there are disruptions that movie, because this can be seen as you know?

ANSWER - Yes, of course.

Q. - Okay, this may occur.

ANSWER - It is logical that you can see. But there will certainly be interrupted because the movie is made to look just blocks.

Q. - And she tells me that every time you touched an object is changed?

ANSWER - In this case, yes.

Q. - Then what does it do here, change gloves after you hook it or not?

ANSWER - Yes What happens in the movie I do not remember, but once I take the hook, having acquired this piece and maybe try other things according to changing gloves.

Q. - Let's go.

PRESIDENT - Doctor, before touching the hook with those gloves, those gloves had touched other objects?

ANSWER - No, I had just been placed, the left hand, as we see, keeps the torch, so the operator with one hand always holding the torch, with the other ... of course he took in this case has taken this finding, In another case, or maybe take something else, I do not know, used to look somewhere.

Q. - Now just because the doctor said since it had taken this finding change gloves we go ahead and let's see 'images. I do note that gloves are married with the same objects, touched the objects, now ...

REPLY - But are not finding, I said look at moving objects, there were also sheets ...

Q. - You answer first, we'll find it in the transcript, said "Since it was finding an object would be changed gloves," we will find in the transcript.

ANSWER - I mean that maybe ... But for something ...

Q. - I'm sorry, here you see that the gloves are not changed?

ANSWER - Yes, but not taking anything particularly interesting, look at this sock, which is what I said before ...

Q. - This sock, she sees this sock?

ANSWER - Yes.

Q. - Then it will find, that this gentleman gloves are the same hook.

ANSWER - Yes, yes, it's true.

Q. - So we have two objects with the same gloves?

ANSWER - No, excuse me a moment. I told ...

PRESIDENT - (Unintelligible it off microphone).

DEFENSE - Attorney Hello - As far I was told "At least every finding a glove," I did see the movie there were the gloves after mat and then back socks, this is a matter of fact, I think.

ANSWER - Yes, it is a fact, but on that sock, however, there is nothing different to what were then the traces of blood were found to have traces of Meredith.

Q. - But because you know what is the ex ante?

ANSWER - No, I do not know in advance, but I told her about what we said before, if you recall, in this survey, which took place long after, as you know, these tracks were more than dry, were dehydrated, so the chance that I might contaminate them by touching the objects between them is practically zero.

Q. - Well, then I say it was enough that she first told me "Look, in the second survey there was no need to change the gloves."

ANSWER - No, I think they needed a little 'too much, there was no need to that frequency which is definitely a must in the first part.

Q. - But I tell you acknowledge that this piece of footage you can see that the hook touch gloves, socks and mat without ever change?

ANSWER - Yes.

PRESIDENT - Dr., since first scrolled images are always on the hook, at one point it was seen that the hook was ...

DEFENCE - Mr. Good Morning - It was the next question.

PRESIDENT - I'm sorry, Attorney.

DEFENCE - Mr. Good morning - were all future questions.

PRESIDENT - Please, please.

Q. - Now for phase ... as you will have seen now to see my colleague will remake him, but he has seen before, so let's go back to see him do, this little hook at one point was placed on the ground to be photographed, my questions are as follows: Item number 1, does not think it would be necessary to first check the cleanliness of the floor before replacing this piece of fabric with the hooks?

ANSWER - No, because the piece was just resting, that is not always possible ... for no reason, previously told you that I simply resting I was able to transfer something, more so on the hook and not on the fabric because the fabric has a larger area, then if there was fluid, then I agree with you ...

PRESIDENT - On the floor?

ANSWER - On the floor there was something wet, liquid, whatever then I resting, simply with the act of the rest I can do to pass the liquid or fabric or the hook on that occasion not only c 'was absolutely no evidence of liquid, but the hook with the stuff was just resting, it was not rubbed, (inc.), crushed, so the possibility of transferring something that was not a priori present is practically zero, and I repeat the basic fact is that the fabric has a surface but much higher than the hook, the surface of the hook is pretty much maybe a few millimeters square.

Q. - Yes, what I wonder is this: regardless of the hook, however, was the stuff that you could also ...

ANSWER - Yes, you could ...

Q. - You could?

ANSWER - You could say something on it to transfer but if there were something liquid.

Q. - So you basically excludes ...

REPLY - Or you can transfer the dust.

Q. - I'm sorry.

ANSWER - Powder, yes.

Q. - What I ask is this: you mean that the cells can also be transferred from a dirty floor if it is liquid, you exclude this?

ANSWER - If cell exfoliation, no.

Q. - epithelial, epithelial.

ANSWER - epithelial exfoliation, no, do not rule it out.

Q. - Oh, do not rule it out?

ANSWER - I do not exclude, but they are still dead cells, exfoliation of cells, cells as we have said before.

Q. - So sorry I'm asking you this: there is the possibility of contamination if it supports a piece of cloth or a hook on a floor where there are cell exfoliation, this contact can transfer cells on this piece of cloth?

REPLY - But are not useful because cells are cells of crumbling, I have to ... except that I have a very significant amount, pieces of skin.

Q. - I'm sorry they are not useful because they are cells of crumbling?

ANSWER - Yes, keratinized cells.

Q. - Perfect, but the hook that cells found?

ANSWER - but not keratinized cells flaking, because otherwise I would not have found the DNA.

PRESIDENT - (Unintelligible it off microphone).

ANSWER - I do not keratinized, cornified that the keratin, which means? As I said earlier, perhaps in a somewhat 'hasty, before the break. The cells of flaking that I mean in the technical report, so in this context, perhaps I have not sufficiently specified ...

PRESIDENT - Those found on the hook?

REPLY - Those are cells that were found on the hook can not be made as naturally as they normally tell from the skin of any person, our skin renews itself constantly say that the older cells, which are just horny lamellae, cell exfoliation, so true to say, we do so, are released spontaneously, without realizing that we lose cells, these cells are not vital, are precisely the stratum corneum that covers our skin and that is no longer viable, is keratinized, which has lost the core, has lost all organelles, has a protective function of the epidermis. The cells, instead of flaking I mean in the technical report, but in any technical report, are cells that have not been removed from the skin in a natural way, that is not skin that has lost of course, is rubbing some object that could have with the skin, is the same principle on which the taking of buccal swab from the oral mucosa of the people, if I put the swab and rub on the wall of the cheeks or gums,

tongue, buccal mucosa in short, I do not pull out cells, cells do not take, while I am rubbing off practically the solicitation of these cells, which are still viable.So if I by the hand, from any part of the body I have something that sticks, rubbing, as it can be a bra, slip the collar of a shirt, rubbing continuously for some 'me time at these points, then his shirt collar, cuffs, gloves in this case, the interior, the sock, I am of the epithelial cells because they do not see what other can be. So this release brings the rubbing of viable cells but not normal cells, the loss that is normal to have and that is surely on every floor because if a person lives in a place, a place frequented is normal that there are, if not washed, If not cleaned, the cells, A) are certainly in quantity, that is small, I do not know how many may be, but surely there are flaps of skin, and B) are not useful, however, cells from the genetic point of view, so they are just horny lamellae, are so called, which usually renew our skin.

Q. - So from what I understand you basically are telling me that in his opinion can not be assumed a contamination with cells that were still on the ground because these cells were transferred to the ground if they were not cheratizzate , but she has found ...

ANSWER - They were ...

Q. - and she was cheratizzate instead ...

REPLY - And then I would not find anything, but then ...

Q. - You did that examination to ascertain that they were not cheratizzate?

ANSWER - I extracted the DNA, that is to say, is an indirect proof. Then I put on relationships, as you can see, precisely for every manuscript that I believe is flaking cells, epithelial cells of presumed put spalling, or flaking of the alleged cell, then the presumption of this nature these cells is simply due to the location of site where they were finding, on the collar of a shirt, for example any, I can find what kind of cells? If you do not flaking skin cells, unless you know before you get a shirt, I do not know, give him a lick of saliva, in short I do not know, or if it is not clearly stained with blood and then I can find a ' other, but if it is a collar, a bra, as it was in fact found on the risers, the victim's DNA at other points of disintegration are obviously cells, ie cells due to the mechanical action of these objects on the skin.

Q. - What are cells of the flaking I realized I want to understand because she attaches great importance to whether or not they are examining what is cheratizzate under which he found ...

ANSWER - Indirect.

Q. - Indirect?

ANSWER - Yes, I have found the DNA, the nucleus, so they must be viable cells.

Q. - on the floor I'm sorry you did a test to see what could be the first to rest this thing?

ANSWER - No, because I think the risk of contamination is zero.

Q. - If there was also, as they were past 46 days, the dust that had led to the disintegration of cells?

REPLY - But were always the same type of cells, however, would be death.A llora no keratinized epithelial cells that survive is then detached from the body, I mean, if they survive the horny lamellae X because for a time, however, are like hair, when they fall on the floor can last for perhaps years, and so do the cells, unless they are degraded, not pulverize, but also normal cells, epithelial fretting say, here, so vital, is not that if the ground is equal to 40 days is vital, ie, no surviving detached from the body, and still do not know how long after he died, because the cells live only if you stick to the body.

Q. - According to the protocols, this technique was acceptable to lay on the ground after 46 days, a finding that was not the first ... a little piece of cloth that was not in spite of these findings and place it on the ground and 46 days to photograph?

REPLY - But we have placed on the ground near the place where we found a 5 cm.

Q. - Yes, but I'm wondering if we look at international protocols is planned that are based upon the land without sampling these findings?

ANSWER - I think, yes, if there is no risk of contamination ... Then the protocol is not being made so as to say theoretical, that are made to provide for the facts that can happen, I think now if I work on a wide variety of information that I have, on previous visits or practices on my scientific knowledge I have, I can also adopt the solutions that I provide, however, that nothing can happen unchecked ...

Q. - In fact you're telling me your assessment, I have understood, was that, okay, I'm wondering if you know, then I do not know if she knows what to expect about the protocols of the time you must take pictures, that is, if there is this opportunity to lay it down without prior sample of where ...

ANSWER - No, I do not know the protocols that say this, because this finding could not be ... that could be photographed, and was discovered when he was obviously in a position where he was found, when it was resting was done simply and only to give an identifier, which is the letter.

Q. - Yes, but as he still had to be examined.

ANSWER - Yes, yes.

Q. - Do you know if he was photographed in the exact same place where it was found or a bit 'away?

ANSWER - Well, you see that is 5 cm, roughly, that is the same tile, the same tile, yes, a little 'more distant from the wire ...

Q. - Look, it was later discovered that the hook had a certain importance in the case as it was then the only element found in that room that you attributed to Raffaele Sollecito, as she was sure that was found under a floor mat reported the accusation or she has made inquiries at this point on this mat under which it was found?

ANSWER - No, because there was another specimen found under the mat that I think has nothing to say ... especially compared to the goodness of the analysis.

Q. - Do you feel that to exclude from this pad can be transferred to an object that anything was even under the mat, for example, if by chance was trampled on the mat.

ANSWER - If it had been trampled on the cloth with the hook, the hooks that are not of iron, steel hooks are practically I think ... maybe aluminum, I do not know, and would have been folded, that is just crushed ...

Q. - Is it true that one of the hooks had a different form?

ANSWER - Yes, it was virtually off and a little 'open.

Q. - Do you feel excluded that this small piece of fabric with the hook has been crushed?

ANSWER - Yes, because it excludes ...

Q. - On what basis?

ANSWER - I'll I'm saying. Compare pictures, and if we want to also enlarge because I've got both the A side B side of the hook when it was found first and the second time, have exactly the same shape as the hooks in the first survey, when was resumed from the point of view, photos - videos and has not been sampled, and the second time, if we want to see, because it is one thing that I noticed it first.

Q. - But if I put my foot on the mat and crawl?

REPLY - But it would be deformed, that is a piece of aluminum, it would be crushed.

Q. - So you think as we have been able to move this piece ...

ANSWER - It has shifted.

Q. - He?

ANSWER - Translated, it turned over.

Q. - It has shifted?

RESPONSE - From a point, obviously driven by some force I do not know.

Q. - Oh yeah, I do not believe it myself?

ANSWER - No, not alone. No, no, it has definitely shifted while keeping the same side on the floor and the top, meaning the sides are not reversed, it was not overturned.

Q. - I said the objective evidence on which she can say it has shifted ...

ANSWER - Pictures.

Q. - If you tell me then what date it has shifted?

ANSWER - I see the final effect and it started, I see the positions of two points, not the path I see.

PRESIDENT - Excuse me, Doctor, you were saying that the position had the hook ...

ANSWER - The first time is the same ... that is the face, we can orient it, okay, this little piece of cloth.

PRESIDENT - (Unintelligible it off microphone).

ANSWER - This little piece of fabric with the hooks of course He's got two sides, one in a dorsal and a ventral ... which are not equivalent, ie they are distinguishable, on the one hand there is the hook that is not deformed hook, that makes bend, on the other side of the hook of course, looks down, then both the upper face, and the lower face are virtually indistinguishable. When I saw the pictures, live on, the first and second time when the championship was the side that rested on the floor is always the same, so I say the clip was done translating, so it has changed its position as the starting point under the pillow, next to the victim by the desk at the end point, this step is done this way because otherwise you would have to turn over on itself once, which seems a bit 'far-fetched say, that would have a double somersault and get back again with the same face on the floor, if someone had accidentally stepped on the mat when he was under ... it's definitely a little hook of alumina, aluminum imagine, that is to say, is so tender, quotation marks, which was precisely deformed in action say that mechanical deformation has produced apparently, this hook is very deformed one of the two, and is partly detached, unstitched, the other is intact, so if you say external mechanical action, I do not know, an arm, I do not know a pair of tongs, something he could pull, and warp, but more so it would have been deformed by a mechanical stamping an object because it is soft enough to deform say, would have been different if it had been iron and steel do not know, something that can not be deformed pr atic, but in that case was not deformed, we have both before and after photos.

Q. - I'm sorry how long she had seen the famous hook that night?

ANSWER - I've seen from the photos, I am in that moment I saw him recently, of course, I gave him a guard. I first when I saw the clip of course I gave him a look.

Q. - And why it was not finding.

ANSWER - That's right. But then I saw the pictures.

Q. - So this reconstruction depends not on what he saw then, but ...

RESPONSE - From the photos that are temporary ones.

Q. - What I ask is this, given the importance it has in fact taken the hook, she did all these hypotheses, strain, etc.., Then we will see that our replicas on the deformation, this is what I ask,

but someone from his staff or other staff told her she has never seen this shift, or for what she saw ... and once again, and you do not know where these 46 days was this hook?

ANSWER - No, it's obvious is the latter that she has made, I have not spoken with anyone who has assured me that translation, no one would want, I guess, that is, translate it, move it to another location, maybe it was something totally accident that happened, though, of course, I look at the beginning and the end of the path of this little piece of cloth, so I imagine that somehow, for some strength ...

Q. - Of course we had to move ...

ANSWER - Yes, I agree with you, it is clear, that it is shifted, moved, one meter, half and half, this is the ...

Q. - The translation is in any way, however, a shift has occurred that may have placed in contact with the fabric or the hooks, you say only the fabric, and the floor was a dirt floor?

ANSWER - Well, yes, he could put ... of course, unless we can imagine that ... he did not know, it was ... I do not know, almost, er, kicked, has made a leap, a leap, I do not know.

Q. - We do not know, we know nothing?

ANSWER - I do not know.

Q. - Another thing about what she said she does not live and dead cells, she said, "If I spit ..." - sorry, President, however, spit ...

ANSWER - I have not but I said, I said ... licking the saliva on the collar.

Q. - If I were to spit there are cells in my spit?

ANSWER - Yes, the salivary cells of the mucosa that are released naturally in the saliva say.

Q. - So there are cells so much so that you are standing on the mask, otherwise one could not explain?

ANSWER - Yes, we are talking about because we accidentally ...

Q. - Precisely, the two of us talking, I can at this moment ...

ANSWER - Yes, you can ...

Q. - So when she told me that the transfer of cells can only take place by friction ...

ANSWER - No, epithelial eh, I meant that skin.

Q. - Even the saliva?

ANSWER - Yes, even saliva can be transferred, of course, if I spit words ...

Q. - Dandruff?

ANSWER - Dandruff, yes, of course, falls, but they are there too the material ...

Q. - Transfer of cell?

ANSWER - Yes, but even the dead cells are mixed with grease.

Q. - Look for the track we are talking about before you said it was a track mixed or mingled.

ANSWER - Yes.

Q. - We want to explain a little 'better what is meant by mixed track and if the amount of this track was a track significantly, or ... well what you already told me.

ANSWER - Yes, maybe I can take the electropherogram. However mingled track, as you probably hope you'll remember from this morning, is a biological trace that can be of different nature which shows up on the DNA at the origin precisely when two different DNA, two different people, were for fused together, so to speak, then were mixed and then at the time of the analysis we can not a priori determine which cells are of either individual, but are drawn together, we almost have this feedback from the analysis, ie we a genetic profile that has more than two alleles, then more than two peaks for each of the gene loci, this makes us realize that indeed it is a mixed track where surely there are more than one person from the account, the counting of these peaks that are present in each locus we can give a reasonable hypothesis ... we can reasonably say if it belongs to two individuals, three individuals if these individuals are of the same sex, whether they are male or female, and we can also determine, looking at those doses, as there remember, the X and Y can also give an estimate of the height, according to the height of the peaks, the ratio of what is relative.

Q. - Dr. repeat all this, however now I wanted to do it really easy to understand with short questions, just the same thing, that is what we mean allele in this picture, what is the allele? So they know ...

ANSWER - It is everyone ...

Q. - This is the peak?

ANSWER - It is each of these red peaks.

Q. - This is the allele?

ANSWER - Yes.

Q. - For what is meant electropherogram?

ANSWER - This means everything, practically the complete graph, so not only red but also the other colors.

Q. - So let's see if I say it correctly to understand them and you tell me if this is correct my definition, the electropherogram is that we will see this chart by which I read a trace.

ANSWER - Yes.

Q. - I read it, looking at those they see as bumps or peaks which technically are called alleles.

ANSWER - Yes, but not all.

Q. - Now for ...

ANSWER - Okay.

Q. - When I see these peaks depending on the combination of peaks I say "This allele is Tom or Dick." Before general question, there are peaks and there are a ticket system.

ANSWER - Yes.

Q. - This achievement is a result we have here which requires interpretation by the geneticist?

ANSWER - Yes.

Q. - What does it mean? To explain it to them because they otherwise ...

ANSWER - It means that the machine, the software that manages the data that is virtually out of the car is not a machine that is able to establish its own initiative which is an allele that we can consider, which is an allele that is not viewed as ...

Q. - Stop, just to let you know. The machine that reads some of these peaks defines them as alleles, other - now we will explain what - are statter, then the subject that they must interpret and

must say "Good morning should be attributed to Julia" must be able to read if that peak is an allele or statter one, what is the difference and how to read?

RESPONSE - The fundamental difference between an allele and a statter, we say that is just another definition of peak, is as follows: for statter means a false allele, an artifact that is inherent in the process ... almost PCR, and in process of gene amplification is an artifact and absolutely quantified, predicted, described by the manufacturer of the kit itself, this artifact is unfortunately unavoidable, because it is inherent in the structure of DNA, and can not be eliminated for the same characteristic sequence, then the feature inherent in the bands of DNA that we are going to analyze, but you can recognize these statter.

Q. - So statter is something that absolutely must be able to recognize good geneticist?

ANSWER - Yes.

Q. - Because if I do not recognize one of those peaks as statter and exchange for allele I completely wrong profile rather than attributing to Tom Dick.

ANSWER - Yes.

Q. - Is this correct?

ANSWER - Yes.

Q. - So it's important to know this is statter, this allele is?

ANSWER - Yes.

Q. - The height of the peak you trust, and that is considered a peak that may indicate a person who is height?

ANSWER - That depends on whether we have a mixed profile or a single profile, in general if we have a single profile height of 50 RFU say also puts me in the shelter dall'incorrere errors.

Q. - So 50 is the height to which reference is made to the reliability?

ANSWER - Yes.

Q. - remember this number.

RESPONSE - In a case of a mixture of genetic, then one of these examples is happening? What counts is not only the height of the peak to say that is a good result, but also has assumed the

position of this peak in dell'elettroferogramma and also the relative height of this peak was compared to another peak that follows practically. What does it mean? If I take an allele that has a certain height, prior to this allele is another allele that has a height much lower, much lower than this height, which must be at most 15% of the principal peak, I I can safely consider a statter, that is an artifact, because it precedes a main repeating units that allele; statter some are not present in this example, let's say there are other ...

Q. - Yes, because I have to ask questions about this ...

RESPONSE - All right.

Q. - So let's say for now ...

ANSWER - It is the height and position that those who understand.

Q. - But is the value according to the value 50 ... so this officially makes us believe this peak reliably. So in this case that this is the electropherogram electropherogram D5S818.

REPLY - Oh, this? That is, this ...

Q. - This one.

ANSWER - Yes, this locus, okay.

Q. - Yes, the marker. Then we have this marker D5S818 three peaks.

ANSWER - Yes.

PRESIDENT - This indicates where the ...

Q. - On the advice of Dr. ...

ANSWER - This pretty much. No, this is not part of the consultation, this request was filed after the consultant has been following this at my preliminary hearing testimony.

Q. - Do you recognize this electropherogram?

ANSWER - Yes, but not what I have given in the technical report, attention.Let me explain why. Because here we say they are assessed as alleles of the peaks but I have not evaluated as alleles, that's why we say the difference is critical, this is the electropherogram of the total signal that is out of the car, without interpretation.

Q. - Without interpretation.

ANSWER - No interpretation.

Q. - Before we said out of the car is a kind of graph, then the geneticist plays him and says what he thinks.

ANSWER - According to his ...

Q. - Just to clarify from now, when she did this work had already upstream profile of Raffaele Sollecito?

ANSWER - Yes, this is a track analyzed later, between late December and early January.

Q. - So you already had the urge profile taken with the swab of saliva and was asked: "The profile may fall in the electropherograms urge I have here?"

ANSWER - No, it comes before the question is incorrect, you place it later.

Q. - But she had it on ...

ANSWER - mica But I know him by heart, I know I miss my heart, imagine! No, not really. I I've got a data, analyze it without analysis of the machine-mediated, because the machine can ... with particular settings of the machine can give because He's got his own interpretation of the parameters that can be changed and the machine gives out a result, I have done, say the norm and practice that I want without looking at those who attribute it, because it is not done at the table, God forbid, I read the result as it gives the car without filters, so no settings of the machine, as a signal pure, as it is on this chart ...

PRESIDENT - without interpretation?

ANSWER - No interpretation, I see everything that I marked the car, then putting what I see instead of precise settings, which still have an objective understanding of genetics in forensic settings are not so well-made case and see what I come out, then see if these data once had can be recognized say, identified with people, of which I arrange the DNA, then the victim ...

Q. - Why is she of course, talking of the famous international protocols, international protocols prohibiting the method suspicion - centric, and that is to take a DNA first and then compare it to the charts.

ANSWER - This is correct, but if the suspect or the suspect, however, is older than all the analytical phase I doing? That is, analyze it later? I've got and I begin to see what is there.

Q. - But I say that the protocols provide.

ANSWER - That is an objective fact, if I analyze it later ...

Overlapping voices

DEFENSE - Attorney Hello - I'm sorry, you should not take you, I am not speaking.

PROSECUTOR - Dr. Comfy - Of course! Of course! If you make certain statements, because they are not questions, are statements, protocols and then say produciamoli these protocols so we know them all.

DEFENCE - Mr. Good morning - then see if he says no. You know that from a procedural point of view is provided that is not first taken before a person and then have the profile of Raffaele Sollecito, take this profile, and slip it into the electropherogram, but according to the protocols must first take the electropherogram and then do the procedure in reverse?

ANSWER - It's what has been done, although I've got the electropherogram, but I repeat ... that the traces are analyzed in a completely objective.

Q. - Yes, but I'm asking you as a procedure, but you know it's true.

REPLY - But I told you I own initially.

Q. - They were complaining, not me.

PRESIDENT - Let's go.

ANSWER - I told you initially.

Q. - I know.

ANSWER - I mean you see and what we see, this is ...

Q. - Now I ask you this: in this case, we see that in this electropherogram three peaks.

ANSWER - Yes, at this point.

Q. - This centrally located for now let us examine, why she has turned the ...

ANSWER - Yes, this centrally.

Q. - Look peak 108 RFU sees it?

ANSWER - aspects that I see it better here. Yes.

Q. - It is almost ...

ANSWER - The third.

Q. - The allele 13.

ANSWER - Yes.

Q. - The way we indicate also the Court sees it?

ANSWER - Yes, it is the smallest one, this.

Q. - This one. Obviously, if you confirm me, it is important to see the height of these three peaks, which is why I do these questions.

ANSWER - Yes.

Q. - This rod 13, this peak number 13 she considered allele or statter?

ANSWER - Neither the one nor the other.

Q. - Why?

ANSWER - Because in this case I have a genetic profile that ... I say this locus in the two main peaks, the highest, as the saying is quite homogeneous, therefore an allele of this type can not be a statter why should it be the last, so should be in this position, because it can not be an allele compared to the main peak is too low.

Q. - But that is the height from the second line, say for the Court ...

ANSWER - Yes, yes, 108, does not consider the third ...

Q. - What I notice is that I am the height of the third, the low, if you see is 108, hence I do not know anyone who sees it.

ANSWER - Yes, of course.

Q. - So as the parameter from which is believed to be reliable is 50 I also noticed: Excuse being 108 because we do not consider this as useful for the identification hump?

ANSWER - Why am I being so, however, I'm sorry, maybe I was not sufficiently clear that the 50, this threshold value that I gave earlier, shortly before, was valid in a specific way for a single profile, I specified that I Why? Because the individual profiles of course the situation is much clearer, that there is only one individual, there are at any locus or two or at most two alleles, then we say how much ... because this height is related to the amount of DNA they say believes that a height greater than 50 is a good height for considering the peak is reliable. What does this mean? It means that I can consider that peak in that case with confidence, that is a true peak, there is no artifact. For cases of mixed, the situation is different, because especially in this mixture which by its nature has several peaks statter, that has several artifacts, this can not be seen only here, that is not seen in this color, in this channel, that of red, but you can see in the other channels that have not been shown yet, so in this case I have a mix for real I must still have a balance back to me with the accounts, as I said before if we do this mixture ratio somewhere between the X and Y, with other alleles in other loci that are, to me is a reasonable relationship to around 1 to 6, here, for example, these are also, from the peaks quell'allele there ... no more of this can be regarded as a very significant spike as saying it is too unbalanced, too disproportionate to the other two, is too low.

Q. - That's us this, then our consultant will tell you how to read it when it's up to us, but do so while she can already anticipate his answers, we ask ourselves what it is that as a problem looking at page 202 where we these tables are, if you want to now ...

PRESIDENT - Of his relationship?

Q. - Of his report, yes. So I take it to him, okay that so much is the same copy, so she knows by heart. If we look at page 202 is basically a page where it says ... that is, when the geneticist is the way the doctor ... page 202 on how the doctor interprets these peaks, since then we have seen the chart with these imagined there surges to find here an indication of all the peaks that we see physically, but instead the doctor says that the peaks for the marker D5S818, which she considers alleles are 11 and 12 and does not consider the last peak, this peak hours but if we was considered physically see the full interpretation and attribution would not be the same, correct?

ANSWER - Yes.

Q. - So you say to a peak that has its own importance?

ANSWER - Well, yes, from a certain point of view, yes.

Q. - From our point of view.

ANSWER - Yes, from his point of view, but it must be a scientific point of view.

Q. - And then what I wonder is this, our question, then we will explain why, but I anticipate him, she can not exclude that within the highest peak ...

ANSWER - I mean the 12?

Q. - That is, the 12 which is paired with the allele 11.

ANSWER - Yes.

Q. - There is also a second allele 12 which has more or less the same height of 13 and therefore both belong to genotype a subject from 12 to 13, this is our ...

PRESIDENT - (Unintelligible it off microphone).

DEFENSE - Attorney Hello - This small peak, we believe that it is masked by the highest peak in photocopying and then two peaks in a high peak, then this is what we shall see him, because I want to be very open.

ANSWER - Yes.

Q. - I want to say that we believe that if she had considered the peak 13 would be turned around, that's why ...

ANSWER - There is one thing that she can not explain in this way, the Y chromosome, she can not explain.

Q. - Now we move on, for now the interpretation, then go to the chromosome.

ANSWER - Yes.

Q. - After doing all the chromosome.

ANSWER - Yes, yes.

Q. - This is the first example, then move to the second example. That was an electropherogram, but this is another electropherogram and is always exactly to the page ... page 202, we are talking of the marker D21S11, this is an electropherogram.

ANSWER - Another locus.

Q. - Another locus.

ANSWER - D21, yes.

Q. - If we analyze this marker we have the first high peak RFU 94, now we see him with ...

ANSWER - Yes.

Q. - right?

ANSWER - Yes.

Q. - Then what immediately follows is 603 RFU, so the first peak is higher than 15% of the second peak.

ANSWER - Yes.

Q. - And when she first explained to me that the assessment was made reference to 15%, then I ask as the criterion that has been said in the beginning because she considers me a statter and therefore not something that can be used according to the criteria from presented here gives value instead of allele?

ANSWER - Because it is 15.5%, then He's got a tolerance of plus or minus 0.5% and therefore may be a statter, it falls.

Q. - But it can also be an allele?

ANSWER - Yes, it's as if he plays.

Q. - If it is decisive to exclude allele profile?

ANSWER - Well, if she considers allele, yes, is another allele.

APPLICATION - All these things then our technician explain the better, because they are a lot of these were illustrative electropherograms.

PRESIDENT - You can return to the picture before?

DEFENCE - Mr. Good morning - Sure.

ANSWER - The red one?

DEFENCE - Mr. Good morning - the President as a framework?

ANSWER - The red one?

PRESIDENT - Yes, the red one. Here it says that number is ... (unintelligible because the microphone off).

REPLY - Those are the numbers that we have not explained the meaning, in fact I apologize because ...

PRESIDENT - (Unintelligible it off microphone).

ANSWER - but also cover other ... if you see any of these alleles are named ... well, let's say each of these boxes contains both the allele name, which in this case is 11, 12, 13 or X and Y, the number following is the height in RFU, and this number is much larger than the area say there is another factor that can be taken into consideration if you want to take it into account, the height is enough for me, so I do not consider the 'area, which can be considered and this, again, was a request ... that is, this electropherogram was explicitly requested by the technical consultant that was provided in this capacity, so with this information, then the height, the area and the name of each allele, so it is a request made for what purpose I do not know, I do not know how to say ... this information is contained, is one of several analysis software that can play, and therefore this analysis was well supplied as requested by the consultant, so it is visually a little 'different from those I did see this morning where he had included only the name and maybe in some cases the height of the peak.

Q. - Excuse me one last example and then move on to something else, because this is just another thing on which then will focus our consultant, so I submit it to him about this and she so ...

ANSWER - Yes, what?

Q. - The WWA.

ANSWER - WWWA.

Q. - Yes, now we had seen in the example above the 108 that she had seen me statter.

ANSWER - No.

Q. - He had just seen?

ANSWER - I had not considered.

Q. - He had not considered their own, but now that I'm in this example by showing her what even I consider it is 65 allele, while the first 108 had not considered.

ANSWER - I'm sorry ... no issues, does not matter, that is they are two separate speeches.

Q. - Can you tell us. She has seen a 65 allele or not?

ANSWER - 65 which is a certain allele.

Q. - Just now the 108 was not considered!

ANSWER - No, but ... then, must be read each electropherogram locus for locus, that is like saying you can not mix different things that happen at different loci.

Q. - I agree but the criteria are always the same.

ANSWER - Yes, the criteria are the same ...

Q. - It seems to me that change here.

ANSWER - No, do not change you look, do not change because for me that's definitely an artifact, something spurious in that case, while in this case the allele is, it is clear, there is a noise almost zero.

Q. - I say to my relief, then of course us ... it seems to us that this criterion of identifying allele in this electropherogram was always interpreted by different methods, in the sense that here the 65 importance, the first non-108 had relief.

ANSWER - No, I think not, but ...

Q. - Okay.

PRESIDENT - It can give an explanation ...

ANSWER - No, not that he knows the loci are, however, different in chemical nature, as is the case for the PCR process are different because they have a different percentage of artifacts, a measure of how to say ... as PCR does not occur in a efficiently in the same way everywhere, there are alleles that inevitably, as it is built the kit, because they are very different areas of the genome, are on different chromosomes, so as to make it's fine to say more or optimization less

certain for all loci are amplified even with a greater propensity, others are amplified with a lower efficiency, so the data is not that like saying ... you can always be applied uniformly to all cases, you have to look locus for locus, there are some loci, particularly the former, see for example the first, the D19, which virtually gives many spurious peaks for a fact their objective inherent in the process of amplification, at that point you have more than others, then we say that a process, here, does not go forward and then gives a lot of background noise, so it's not that the criteria are exactly consistent for all, must be evaluated case by case basis.

Q. - And the assessment is subjective?

ANSWER - It is not subjective evaluation, however, takes into account all the parameters that are inside dell'elettroferogramma, relative height of the peaks further, the height of the peak, that takes into account several things, of ' personal experience, that is not something that ...

PRESIDENT - The personal experience in the ... (unintelligible because the microphone off).

ANSWER - I mean ... let's say from personal experience of those who interpret the genetic profiles of many different tracks.

Q. - Why is this being a work of interpretation in which we attach importance to a peak or there is another type of subjective experience that has a value based on the interpretation for the value that she has said that the interpretation of the peak.

ANSWER - Yes.

Q. - And is it fair then to say that according to the definition we give to one of these bumps can change a profile or not?

ANSWER - It can change though only in a scientific sense, ie a technical sense, is not to say that we can take ...

Q. - If I take these humps on the basis of amplification and consider statter ...

ANSWER - Based on, please?

Q. - According to these heights that we see, after doing the sound system, I consider an allele for an interpretation and a statter statter allele may change the results?

ANSWER - Yes, but that type of artifacts, such as statter there are strict rules, and therefore there exists the position and height, there can be three alleles statter who is away and that there can be no statter ... you do not know, 30% of the main allele, then there are rules in that case.

Q. - Okay. Feel the amount of sample analyzed, we do not know what it is, because we do not know ...

REPLY - But it is certainly in excess of a nanogram, because this is safe ... then the goodness of this electropherogram is the fact that the peaks, that is the main secondary, however, are of a certain height, have a good height This is achieved with a quantity of DNA that is at least or about a nanogram, which is recommended by the manufacturer.

Q. - But she repeated the amplification?

ANSWER - No, no amplification.

Q. - Why?

ANSWER - Why did not I thought it useful to repeat.

Q. - What is the gain?

ANSWER - This is used to highlight areas of interest gene.

Q. - It happens that the repetition of an amplification of the different results is to have the same, different readings of some of the peaks?

ANSWER - No, if the DNA is quantitatively valid, as in this case, no, I should resubmit the same result.

Q. - We lack, however, the amount of DNA.

ANSWER - For God's sake, that is ...

Q. - These are the electropherograms, the electropherograms, we said that the way to interpret these alleles and statter, then we will give our reading, in addition to interpret this type of electropherograms must interpret the Y chromosome, which is the kind of mechanism that allows ID for a familiar type, so the family Good morning, his family, etc..'s father sends his son, is only for men, women do not.

ANSWER - Yes.

Q. - I said okay but properly?

ANSWER - No, no, that's correct.

Q. - This second parameter with which you do this type of evaluation, ie, the Y chromosome, may be used only to exclude, not to say?

ANSWER - I'm sorry that means? To exclude of course, to say with due caution. Explain me If I find a haplotype, then Y, a genetic profile and go to ... maybe just not as unique as genetic profile, so there is no identification but is shared by other people, say it is good practice to be able to compare with a reference database, The reference database is a collection of several different types of genetic profiles of the Y, this is because unlike nuclear DNA I do not have the allele frequencies, that is how rare it is I do not have that profile from the peak of the alleles, I look at all the genotype that is contained in a database so that I am comparing: occurs twice, there is zero times, there is a hundred times and I get an idea of the goodness of my results, the reliability with which I I can give that particular genotype to that person. It is obvious, is inherent in the nature of the Y chromosome that is shared by the paternal line, so there is no doubt that is unique to that person, but if I genetic profile that, in fact, places it in a database which is practically on line, so you can easily see, is a database of a professor who is called Lower Ruz, this database can be used to get an idea of the presence in the population included, then in the various subjects that were included in How often has one database, so if there is a time, a hundred times, ten times the same genotype, because obviously the Y chromosome itself contains the information that comes from generations back, so maybe 100 years ago, part of a certain family immigrated to another place in the world and therefore has rooted at that point his Y chromosome, which then is present in other parts of the world, practically, and in other populations, in other individuals, so you can get an estimate, a assessment of how many individuals have in the database that same genetic profile conforms naturally to me, helps me understand how rare is this genetic profile, this has been done in the case of both the genetic profiles Y, Raffaele Sollecito both and both Guede , was made by me in two different times, so let's say more or less around May to September and recently, and the frequency that I have found in this database, maybe after I show the slides that I

have it just as an image, I have had the frequency is zero, ie zero frequency, ie there is no long-genetic profile, which extended for 17 loci, ie the same magnitude of that or that I have amplified, as previously, until a few years ago there was a kits, which analyzed only 11 of these loci, then say it was smaller, then the technology, development in fact looking for another company meant that instead of 11 loci, it can analyze 17, as in this case, then among all possible haplotypes that are included in this database, 15 000 and 900 ... and do not remember how, almost 16 000 are extended with 17 loci, so they are the same length, the same type, have been analyzed precisely with the same kit as that used we then have comparable data, this comparison was found on 15 000 and 900 ... and can not remember exactly the number, zero haplotypes, it does not appear in this database, no other genetic profile equal to that of Raffaele Sollecito, and also to the of Guede, was precisely analyzed separately even after ... maybe I can show just the screen that I printed of this research, so are the numbers I carry, but it is the computer screen that I have printed and inserted the genetic profile had the results, calculated from the database.

Q. - The data bank is a bank officer, is a database ...

ANSWER - Yes, a bank official reference for virtually all forensic geneticists world because, obviously ...

Q. - What is this database?

ANSWER - That of Professor Lower Ruz, is a German database, it is just a reference, look.

Q. - At present, where the individual DNA samples are stored in individual laboratories?

ANSWER - What ...

Q. - When you take the DNA ...

REPLY - Oh, cataloged in our freezer.

Q. - So that each laboratory has its champions?

ANSWER - Yes, our laboratory has only ...

Q. - Are there any others.

ANSWER - Other labs do not tell the Scientific Police.

Q. - Yes, there are several laboratories.

ANSWER - Yes.

Q. - Look I know one thing, I have seen in movies of the envelopes that you you used to put these findings that these characteristics have envelopes?

ANSWER - They are just security bags used by our offices in both central and peripheral to the conservation of each artifact.

Q. - They are used to ensure contamination, that is ...

ANSWER - Because they have a closure which is highlighted if tampered with, ie you can easily open and then close without a trace ...

Q. - But why, if it does not close what can happen?

ANSWER - If you do not close, of course, is open, and remains open.

Q. - Look repertoire but if I were in a paper bag leaving ajar the finding could be susceptible to contamination?

ANSWER - Well, it depends on why the leave open and why I use the paper bag.

Q. - Whatever the reason, a bag of plain paper guarantees of cellophane in the same way we've seen here?

ANSWER - It does not guarantee the same way, however, is a way to keep track wet, wet tracks, because if I seal ...

Q. - If you are not wet?

ANSWER - just ... ... can develop it dries and then develops mold.

Q. - It is more difficult to track an interpretation of a simple or a mixed track?

ANSWER - It is certainly more challenging track mixed.

Q. - Why?

ANSWER - Why we must be careful to interpret precisely and say the most scientifically correct situations that may occur simultaneously, so ...

Q. - Is it easier or more difficult to interpret because there is more than a track as there is DNA or not, ie the fact that there is less makes it harder or easier to interpret?

ANSWER - It depends on the height to reach the peak, I can also get across the track a total of only a nanogram or less and still be able to get a good result and maybe have as much DNA, but that is not usable because it is degraded in various points, so it depends, here, in quantity but also quality is important.

Q. - When he joined Dr. Lalli you were present, right?

ANSWER - Yes, not the first time, I know that he initially came to look at the ...

Q. - He had the suit or not?

ANSWER - Her shoes, gloves, and had enough.

DEFENSE - Attorney Hello - Thanks, I ended up later.

DEFENSE - Attorney Maori - No question at the moment and I intend to eventually cross-examination.

This process is suspended.

This process is resumed.

DEFENCE - Mr. Dalla Vedova

Q. - Good evening, doctor.

ANSWER - Good evening.

Q. - I want to start with a general discourse but then we analyze the findings that are of interest to us. First of all I have to ask the same question he did urge the defense on the activities carried out, we can recall how many pieces you have analyzed and analyzed how many tracks you have?

ANSWER - Yes, as has been shown in a slide were analyzed and 228 of these 228 specimens were obtained 460 tracks.

Q. - how many of these tracks have been reported to Amanda Knox, remember him?

ANSWER - A dozen, at a guess.

PRESIDENT - (Unintelligible it off microphone).

ANSWER - No, roughly 50% were, maybe a little 'less because much of this actually had hair and hair have a little success.

PRESIDENT - (Unintelligible it off microphone).

ANSWER - Yes, a little more, a little less, here.

PRESIDENT - (Unintelligible it off microphone).

RESPONSE - In memory, no, I can make an estimate.

PRESIDENT - (Unintelligible it off microphone).

ANSWER - No, because they are not ...

Q. - perhaps the Doctor can help me, if I can show them this list you will recognize it as ...

ANSWER - I do not really see ...

CHAIRMAN - What is the relationship of doctor?

ANSWER - No, not my report, no.

Q. - It is a document summarizing what we did, I just wanted to know if in fact the findings shown here, 24, 31, 34, 36, 56, 96, the 109, 110, 178, 179 , the 180 and 194 are those that result from its report of June 12 tracks ...

REPLY - Actually, the 34 ...

Q. - ... with a genetic profile of Amanda Knox.

ANSWER - Yes, 34 reminds me of what? Why not ...

Q. - The 34 apartment inhabited by a garment Knox.

ANSWER - Perhaps her pants, the boxer.

Q. - The blue box of urge.

ANSWER - Yes, okay.

CHAIRMAN - So you're saying about an estimate?

ANSWER - I do not know, twenty, but overall I'm not referring ... she asked me in total?

Q. - Yes, I wanted to know of the 226 exhibits and 460 analyzed traces from her I think these are 11 and those referring to Knox?

ANSWER - No, not correct because there are also traces related to Knox, whose findings have been obtained for example from personal search of the same, from the apartment of Raffaele Sollecito, from other sources, here, is not quite so clear, she can say this in reference to the findings of the apartment.

Q. - But for example the 194 I refer to the exhibit ...

ANSWER - Yes, the envelope.

Q. - ... of the plastic bag in the apartment ...

ANSWER - Yes, now I may be wrong but there are also memories ...

Q. - Doctor, this is the report.

ANSWER - Perhaps, I tell you ... maybe ... but it is an estimate

CIVIL PARTY - We can question her about her relationship, President?

PRESIDENT - The lawyer asked for data ...

DEFENCE - Mr. Dalla Vedova - Abstracts.

ANSWER - I have never made a list, a count of the tracks related to Knox, so if you say this ...

Q. - But perhaps I can help with the depth that we have analyzed this morning, even here where she makes a series of ... I'm allowed to take notes but maybe if we turn to for help his slides ...

ANSWER - Okay, yes, yes. So if we refer to the part of insights as I have said before that's a part that shows the tracks that were maybe ... just finding, sampled at specific points of interest can we say in the reconstruction of dynamic events, however, said there are also attributed to traces of Amanda Knox has not been reported in the special part, say, in-depth because they are considered insignificant, such as traces found on sponges at home urge, the boxer with the traces of blood traces in the brown bag it seems to me of cloth belonging to the same, a track under the shoe, for example, seized the same, so we say we must distinguish between those tracks and those significant in their neutral ...

Q. - Then I would ask that these traces analyzed 226 exhibits and 460 which are significant to you in relation to Amanda Knox?

ANSWER - The one I have ...

Q. - What and how many wanted to know the exact number.

ANSWER - I did not count, sorry.

Q. - If we take today's presentation ...

ANSWER - Indeed I do.

Q. - So we analyze them one by one.

ANSWER - Yes, wait a minute.

PRESIDENT - 460 But these tracks were taken from the house ...

ANSWER - No, everything, everything, inspections ...

PRESIDENT - Raffaele Sollecito House.

ANSWER - Yes.

PRESIDENT - House Rudy Guede, Via Della Pergola?

ANSWER - Yes, in the two surveys and the home of Rudy Guede.

PRESIDENT - The car?

ANSWER - The urge machine, so it's complex. Here begins the part of the study.

Q. - I'd like you to tell me precisely those referring to Knox.

ANSWER - Yes, I think this is the first, let's see '.

QUESTION - The Trace 24.

ANSWER - The 24, because before I think there is ... This is the No. 23, profile victim, so do not interest us. This, the 24.

Q. - is a 24?

ANSWER - Yes. The 25, no.This is a mix, so there is a mix I do not know if he wants to consider.

Q. - Yes, even the mixed, I know that some tracks are mixed.

ANSWER - Okay, yes, then a trace of the A 33.

Q. - The 33 on the knife.

ANSWER - Yes the 36 A.

Q. - This is the knife the big one.

ANSWER - Yes, that is mixed on finding 66: victim - Knox.

Q. - What is The 66, Doctor?

ANSWER - It is a small sampling carried out in the bathroom ...

APPLICATION - Discharge of the bidet, yes.

ANSWER - The margin, yes. Then we have the cotton swab, the box of cotton buds, exhibit 136, mixed: victim - Knox. The 137 combined: victim - Knox.

Q. - The 137 is exactly referring to those ...

ANSWER - The 137 is the sink.

Q. - On the same sink, yes.

ANSWER - A cigarette butt on the mix 145: Reminder - Knox.

Q. - I'm sorry to butt, seeing as we have photography, I was just a question because I wanted a clarification, it is a cigarette or something different? That is one of those cigarette on the market?

ANSWER - I start by saying that I do not smoke, so I do not mean, however, seems to me that a cigarette is not for sale, say it seems to me a cigarette craft.

Q. - As with the other?

ANSWER - No, the others were the butt, look if you want to know accurately, we can take photos of various butts photographed in the laboratory, because here you see how they were finding, so basically you can see why there's such a little paper towel some 'covers, but if we go to the photo of the technical report, where the butts were individually sampled once, placed in paper bags and then, after precisely photographed, I can tell more precisely, I seem to remember that cigarettes were all saying packed, that's on sale.Then we, here, the 177, this sampling done on the floor of the chamber Romanelli: victim - Knox. Then the 180, luminol positive profile Knox.

Q. - Where is this?

ANSWER - This is located in the corridor.

Q. - In the hallway?

ANSWER - Yes, generally the corridor, then we should see the exact spot on the minutes. Then there's always the 183 corridor between the two rooms: a victim - Knox, and then there are three, though, in fact, that I have not considered significant in this house, room, floor Knox.

Q. - So, Doctor, I ... I count 10 of which 5 are mixed.

ANSWER - Yes.

Q. - So are traces mixed with someone else.

ANSWER - Yes.

Q. - how many of these 10 were in the exhibit room of the victim?

RESPONSE - In the room no. In any room, if I remember correctly.

Q. - Look instead on a more general question ... no room on the victim?

ANSWER - No, the victim in the room that I remember, no.

Q. - So there is no finding that she considered it important that the victim was found in the room.

ANSWER - With the genetic profile of Knox.

Q. - But there are some that have been found in the house, and Romanelli's room in the hallway to the bathroom?

ANSWER - Yes.

Q. - Where Knox lived?

ANSWER - Yes.

Q. - Then there are some that are mixed with the victim.

ANSWER - Yes.

Q. - With whom also lived in the same house?

ANSWER - Yes, shared spaces.

Q. - For example of this, the dating of the tracks you can tell us something exactly? It is possible to date a track?

ANSWER - No, I said just this morning while exposing a bit 'general concepts, the DNA is not dated, so a track is not temporally determined in a crime scene, we can not establish a before and

an after between tracks, can not be established in the same way if a track is one month before, a day before.

Q. - So you agree with this statement which says that DNA testing can not tell the time and manner of deposition of trace organic?

ANSWER - Yes.

Q. - So that you can also define a limit in the assessment of DNA?

ANSWER - Yes.

PRESIDENT - I'm sorry about how maybe we can not determine ... (unintelligible because the microphone off).

ANSWER - I do not understand how that was released ... that is if a substance is dripped from a wound to me and I dripped from his nose ... that is the way I am ...

DEFENSE - Attorney From Widow - Can you be more precise, the President, if he wants.

PRESIDENT - Yes, please.

Q. - I have here a representation of a track A + B mixed track, the question is this: when and how the track is formed? Three days ago, yesterday morning, before the track A and track B, then, the track first and then the B track A or simultaneously, for example in mixed traces of the corridor and the room where we saw there ...

ANSWER - Which room Excuse me?

Q. - Of Romanelli for example.

ANSWER - Room of Romanelli, yes.

Q. - Are you able to say, because it has established that DNA is the Knox, Knox, and even the possible victim, she is able to tell if it's the first track and then the victim of Knox, vice versa, or both were attached?

ANSWER - No, you can establish it scientifically.

Q. - always feel like the general discussions on the conclusions I wanted her to give me an explanation, to me is that the survey results may have different genetic findings.

ANSWER - Yes.

Q. - I read him some and I wanted to ask you if me can confirm. The investigation may come to the exclusion of a track, compatibility ...

ANSWER - That a person.

Q. - Excuse me, a person, the compatibility of a person.

ANSWER - Yes.

Q. - The identity of a person.

ANSWER - Yes.

Q. - Or inconclusive, these are the definitions of a general nature?

ANSWER - The inconclusive not really understand what you mean, not ...

Q. - Do not conclusively defined as no useful result for identification.

REPLY - Oh, that is, there's just the DNA, the genetic profile is not, of course, yes.

Q. - So what do you think is the difference between inconclusive and exclusion? The aid, doctor, because they are definitions that I found to try to understand his conclusions.

ANSWER - Sorry no conclusion and?

Q. - And exclusion.

ANSWER - So exclusion ...

Q. - It seems to me that the track can not have been left by that subject.

ANSWER - That person, wrong, so I exclude that person as responsible for the deposition of that track.

Q. - But no inconclusive results useful for identification purposes?

ANSWER - Yes, that right there is the DNA, so I have the electropherogram, I understand this to be ...

Q. - Then there's the compatibility?

ANSWER - What is the mixed.

Q. - And you agree with this definition that is the case in which there are partial analysis of difficult substrates and can be of little use?

ANSWER - frankly I do not understand what it means.

Q. - I mean that the compatibility is defined in doctrine, from what little I've been able to analyze, as I read, that is the case with a partial analysis of difficult substrates and can be of little use.

ANSWER - No, no, no.

Q. - Do not agree?

ANSWER - No, I do not agree, that is, for me ... I mean compatibility when mixed into a track, so for example in case we mixed several tracks Knox - victim in that case I can not even do the analysis of the Y chromosome because they are two women, in the sense that before awarding any compatibility analysis I see I see from the analysis of sex, then the locus of melogenina I know that there is only the X chromosome, so I rule out the presence of a male in that mixture, then of course up to the second part, which is to compare the genetic profile mixed with those available in the court case in question, I find that it is compatible in these terms, ie as a mixture in theory I can have genetic, If conditions permit, ie, if the peaks are of a certain height homogeneous, if the relationship between the two is about the same DNA, then we say there is little quantitative difference between the two, I can in theory also have some alternative genotypes to those that I give as presents. Let me explain, I have given as consistent mixed Knox - the victim, but in theory if we do sometimes, and I think that there is at least one of these cases, there is a well balanced mix, that quantitatively the two DNA are very similar, so I in theory, every gene locus instead of giving the couple know that 11 to 12 and 13 - 14, I can do 11 to 14 and 12 - 13, I do not know if it is clear, when the two are mixed quantitatively very similar peaks are very uniform in height. Now I want to show one of those charts that I had been shown to explain a little what is meant by genetic analysis. Right here, right.

Q. - But she now is referring to a mixed genetic profile.

ANSWER - Mixed.

Q. - And instead of a single genetic profile?

ANSWER - It is not compatible, the identification is certain.

Q. - So you can only talk in?

ANSWER - Yes, in a single genetic profile, whereas we have a mixture, such as in this case where the mix is very balanced, even if it is a mixture of male - female, and I see this not only by reports of ' X and Y which is 1 to 1, that is, three shares of X and one Y, but also by this locus, you do not see them as numbers because it is too small, but I can tell you that this locus alleles that are more or less homogeneous and are of the same height as in this case 15 - 16 - 17 and 18, trust me because obviously you can not see.

INTERVENTION - (Off microphone).

ANSWER - No, not bigger, but I can do something, I can zoom in, here we do so, I magnify here. Here you go. We analyze this locus, for example, 3. So what happens? In a fairly balanced mix in reality I will definitely compare this mixture with two people, one male and one female, and I attributed it is compatible or not their genetic profile with this mixture, that is, if their alleles, so their peaks are individually included in this genetic profile, but what happens? If this happens on an individual gene locus, one of the individuals is 15 to 16, the other is 17 to 18, so everyone has a pair of alleles that are present here, right? I can say that those two people are present and then I can say that there are, say there are actually represented alleles, but I say in theory I could also make the attribution of another person, unknown, which has 15 to 17 as allele and 16 - 18, then the pair is different. In this case I can do because the profile is very balanced, usually a pair alleles are amplified more or less with the same efficiency, so the alleles are very balanced in a pair, there is a pair made by one allele and 100 1000 allele, it is not possible to be both more or less than 100, more or less 1000, more or less than 500.In this case, what happens? If I have a person who has 15 to 16 and another that has 17 to 18 I can not say with absolute certainty those two people are present because there might be a third person I do not take into consideration, then a fourth person, then another couple of people, who instead of 15 - 16, 15 to 17, then have two alleles that are attributed to a saying attributed to one person and one another and get together to form the genotype of a third person, the fourth person on that other couples would be 16 to 18. I do not know if I was clear. Only in this case one can say precisely the genetic profile that is compatible, because I can not say with certainty: those two people are present and there is no

other. So in this case, when mixed are very balanced, when they are very unbalanced, then this thing can do, I can always say that it is compatible, however, say with more to say ... I can reasonably say that more security than there are people would not be possible because other couples.I do not know if I was clear, I understand that it can be a little 'complicated but ...

Q. - I wanted that she would clarify the difference between individual genetic profile, where you declare the identity, and a rather mixed genetic profile, where you declare the compatibility, namely the reference to the final, she makes a distinction or is it the same thing?

ANSWER - No, they are different.

Q. - So when you declare identity says equality?

ANSWER - It is just the person. That's right, it's ...

Q. - So it's 100% sure?

ANSWER - Unless there is an identical twin, of course, so unless there is an identical twin have the same ...

Q. - Yes, because identical twins can not be distinguished with DNA?

ANSWER - Yes, with this analysis, might have mutations in other points, leads well, but it is another thing.

Q. - And also the genetic profiles ... the analysis of a mixed genetic profile can be said to be more complex and may also, in the case of three, four, providing even non-interpretable results?

ANSWER - Yes, Yes, yes, in the case of mixture of more individuals we say assignment of the genetic profile, also in terms of compatibility of a person and another, or all the people say in some cases is uncertain, so leave the margins of uncertainty to the point that they do not deem it useful to assign a genetic profile that compatibility, yes.

Q. - And in her mixed genetic profiles that relate to the Knox exclude that there was a third person?

ANSWER - This is what I was trying to say. I can not be excluded because at least one case, if it wants to take this genetic profile because I do not remember from memory, profiles are very balanced, so what does this mean? There could be ...

PRESIDENT - We can take this case because ... (inaudible off mic it).

Q. - Why is a very technical.

ANSWER - Unfortunately, yes, it's very technical so ...

Q. - But I think, Mr. President, that here is extremely important to evaluate the findings, then just the literal words used by Stefanoni must be understood by all of us to understand the differences, so in reality the technicality we can affect up to some point in the conclusions, but I want to understand when we speak of equality and identity if it is compatible if it means maybe, because it is perhaps in court has a completely different value.

ANSWER - We can make only two brief examples about this point, then ... maybe I'll take it ... then we magnify the genetic profile combined: victim - Knox, in this case the mixture that comes out is not balanced, why? Or vviamente do not see the sex ... I'm sorry.So in this case the mix is very unbalanced, why? For you see from the first locus, which we can see, there are four peaks ...

Q. - Doctor, excuse me, can you remember where you found this finding?

ANSWER - This is the relic found inside the sink, inside the basin.

APPLICATION - Inside the sink.

PRESIDENT - Then, on the edge of the sink ...

ANSWER - The dripping near the border with ...

PRESIDENT - (Unintelligible it off microphone).

ANSWER - That's right.

PRESIDENT - (Unintelligible it off microphone).

ANSWER - Yes, the finding of sampling. Then this mixture, now without going into too much technical detail, it is quite unbalanced in what sense? Quantitatively, the two people that I identified as a victim and Knox are in weight ratios in quantitative ratios quite different, because I can tell? Looking at the first gene locus can be observed that this locus Knox has alleles 11 and 12, which are the first two heights, just to be clear, the order of 2000 over the 2000 RFU, the other pair I can define real couple, because he could not be otherwise, or at least would be very unlikely that it were otherwise, the pair is just 13 to 16 because they have relatively uniform

height, a peak is 931, 13, and another peak 752, are a little 'unbalanced, but in short, fairly homogeneous, in this case, but in other cases, when you can say that compatibility is true ... we're talking about compatibility, however, compatibility is a bit like saying a' stronger, here, as it were to show respect to each other, it would not be plausible to say a pair of 11 with 13 and 12 with the 16 because they are too different heights, so the exclusion of a possible third person who has the ' 11 and 13 or a third person who is 12 and 16 is virtually a thing quite certain, because the only couples who are quite possible because the loci are precisely balanced, ie the alleles present in the genetic profiles of Amanda Knox 11 to 12 and the victim: 13 - 16, then we say the more the joint is unbalanced, not too unbalanced, but quite unbalanced, so everyone has a contribution with different amounts of DNA, the easier it is to attribute this to two people mix, because it would not be plausible coupling between alleles that are too different heights, so it's very, very unlikely, of course we can not exclude that such a thing happening scientifically, but it must also happen in all 16 points, excluding the sex all 15 points, because I have other points of imbalance, so for example 12 to 13 and 16 - 16.2 alleles are four that I can attribute to two distinct 13 because the need to partner with the 16.2 and 12, with heights of 16 because they say uniform, so in this case, the compatibility is like saying the most reassuring in the sense that I see more confidently identify the two people, but if this imbalance, basically, is much less pronounced, so in case of a greater homogeneity in the peaks, and this seems to me there is definitely a sampling ... but I do not remember what it is, is another sample of the bath, here it is, I think that is why it is fairly balanced ...

Q. - We're talking about the box of cotton buds?

ANSWER - Yes, in this case, we see only for ease of reasoning, otherwise it becomes even more complicated with three loci, we always see the loci with four alleles, for example here in this, always the first, perhaps it is better that the ... I point with the cursor, in the first locus, the D8, here are the same alleles earlier, more 11 - 12 - 13 and 16, but in this case, the imbalances between the two pairs of alleles of the two people are certainly much lower, then 11 and 12 which can be attributed to Knox 637 and 590 have heights, the other pair a little 'is the lowest 13 to 16

of the victim who has a height of 514 and 470, so already in this case say, and even further down we have another example, the D18 for example we have four alleles, even here quite homogeneous as D19 in the heights and so well, that is, in conclusion, say the gist of the argument is that when the alleles are very uniform in height I can think of couplings different from those which I attribute to the two people, these couplings are so different that I can include other people than those already present. This is a bit 'a say in this case ... and of course we talk about compatibility because there are definitely alleles of the victim and Knox, precisely this combination can not be excluded that there are other ...

Q. - This, Doctor, is the exhibit 106?

ANSWER - No.

Q. - I'm sorry that number is?

RESPONSE - 136. It is 136.

Q. - In reference to his explanation that I ask: she has made against, you have made the analysis of DNA that is precisely when you compare a typical DNA taken from a person, as in this case she said the swabs of saliva two defendants and the ...

REPLY - And the swab into the wound of the victim.

Q. - In the wound and the Guede toothbrush.

ANSWER - The toothbrush, yes.

Q. - My question is this: but she had also had the DNA of other girls who lived in the house can not be excluded that on the sink where she has found mixed this track there could also be the DNA of a third or a fourth girl seen that all lived in the same house and all used the same sink?

ANSWER - If you could see them I could compare the genetic profiles, a priori, that's me I can not say, I can not imagine.

Q. - This activity has not been done?

ANSWER - You have not done, no.

Q. - It was not considered necessary to compare the DNA of the other?

ANSWER - You have not done.

Q. - But you can not be excluded, for example, then that of the mixed genetic profile of the sink, there may be other people?

ANSWER - I have just said in this case the cotton swab can not be excluded ...

Q. - No, the sink, the old one.

ANSWER - That yes, it would be very, very unlikely that there were other people, I explained why the pair are almost obliged to say, here, would be very unlikely.

Q. - But the cotton swab in a nutshell we can say that there could be the DNA of the other girls who lived in the house?

REPLY - But ... I'm sorry should not have this DNA of other girls should not have in any of the loci, then none of these 16 points ... 15 of these points one allele only different, of course, should be a genetic profile that includes ... ie like a puzzle, I move the pieces, construct a different genetic profile, but always using the same pieces, that I can not make ... if there is another allele exclude me, that I exclude that person from the contribution to the mix, this obviously , it is possible that I can not a priori know the genetic profile of other people. Of course, it is possible in theory, can be analyzed knowing people, knowing them, you can always do this analysis.

Q. - In fact, in the end finding her on the 136 arrives to declare that the result is compatibility.

ANSWER - Yes, but the other, because I have always given from the point of compatibility is not scientifically correct to give a different result, it is always compatible, even if it is a compatibility to say a little 'more certain identification ...

Q. - Compatibility some 'more certain this is what amazes me, and I do not understand because he knows ...

ANSWER - I know, but it is always ...

Q. - For me, a word is a word, is not ...

ANSWER - I know.

Q. - Perhaps you who are scientists ...

ANSWER - I know I repeat, however, the speeches are ...

Q. - Compatibility some 'more certain, so there is a different degree of compatibility?

RESPONSE - In varying degrees, yes, that is, I can tell you that this profile is compatible with the two people in a way to say ... it is definitely compatible, ie they are certainly there, then there is also another ...

Q. - Then why did not write that they were identical, that DNA was the same?

ANSWER - The alleles are identical, not ...

Q. - The trial, I had asked before the definition of the conclusions and she told me that she gets to individual genetic profiles to say ...

ANSWER - Yes, they are identical ...

Q. - I'll give you an example if you want.

ANSWER - No, wait, however, we must understand about this thing.

PRESIDENT - (Unintelligible it off microphone) in the case of cotton buds definitely there?

ANSWER - The DNA ... then surely there is DNA which coincides with the alleles, then the genetic characteristics present in the victim and Amanda Knox.

PRESIDENT - You say there could be ...

RESPONSE - In that case there might be a third person, always female but has the same characteristics present in this mixture, that is, if I can I've got four I can combine in different ways, I can make a combinatorics.

Q. - Of course, this is clear.

PRESIDENT - The bloodstain found on the edge of the sink but down ...

ANSWER - In this case is different, but the imbalance there, quantitatively the two DNA that I identify the victim and Knox are quantitatively unbalanced, one, say, 100 and one is 10, although it is not, is incorrect, just to understand a macroscopic, so in that case I can not speculate, hypothesize or with great difficulty, that is highly unlikely that there can there be a third person to be the result of an allele taken from the victim and took an allele by Knox.

PRESIDENT - But putting aside the idea ... (inaudible off mic because) surely the two people ...

ANSWER - Yes, I'm definitely conscious of their alleles, of course, this can be said, mixed in all that I have given as a victim - Knox.

Q. - I see Doctor always on the findings, for example, on finding 25, which is the toilet paper, that even here she does the same steps and arrive at a conclusion against Guede where she declares that he has allowed to establish equality in this case, as well as compatibility and identity which she terms as a document is highlighted in bold, so I understand that equality ...

REPLY - Oh, it is stressed ...

Q. - On page 56, if he wants to attack ...

REPLY - But the 56 page technical report?

Q. - Yes.

ANSWER - Okay, then I'll take it, take look at.

Q. - So they see it all, so when we speak we have it ...

REPLY - But also I've got the disk, wait. 56, okay.

CHAIRMAN - This is his report?

ANSWER - Yes, yes. Equality, yes, with that ... in short, is bold and underlined.

Q. - So I know this is another definition?There is a difference between compatibility, identity and equality? Why again is crucial for us to understand.

CHAIRMAN - So equality that means?

ANSWER - Equality is synonymous with identity, then I use ...

CHAIRMAN - So ... (inaudible because outside microphone) on that toilet paper is attributed to Rudy Guede safely?

ANSWER - Yes So equality, identity, the same genetic profile, are all terms ...

Q. - But these are not terms of protocol, are not defined by some international manual?

ANSWER - No, no.

Q. - Even at the European level?

ANSWER - No, say Italian phrases that I use to express a concept, that is, the concepts are expressed with different words.

Q. - You can do a calculation of the compatibility?

ANSWER - No. There is not a validated software, an analysis system validated in international forensic field that allows you to establish exactly according to statistical calculations, the granting or not of a mixed-profile analysis. There are various proposals, various software that make this analysis, however, say the result may change depending on what software you use, then the second program, for which there are in fact still validated at the international level, which means any genetic results, as I have said before, I have analyzed and analyzed by a colleague ...

Q. - For example, a doctor, the databases that are a known topic, the fact we have analyzed.

ANSWER - Yes.

Q. - There are a number of countries, they do not have a harmonization of the results so you can define in the same way the same assessment?

ANSWER - No, when you compare with the database, that is ...

Q. - When conclusions, that there is a system equal in a country over another on the conclusions of an investigation to determine the result?

ANSWER - Well, the database is the ability to assign or not to an individual's genetic profile, so even there you use the terms identity, attribution, that is, there is this ... it is obvious that there is this ...

Q. - So there is a general protocol for defining the conclusions?

PROSECUTOR - Dr. Convenient - But in what language?

DEFENCE - Mr. Dalla Vedova - I'm asking, in any language, I do not know internationally.

PROSECUTOR - Dr. Comfy - Change the language and change the terms.

DEFENSE - Attorney From Widow - No, an international protocol ...

ANSWER - Perhaps it's something that I do not know, however, that there are databases of course everyone knows.

Q. - For example, there are suggestions made by the body that are specific to Europe that deals with this topic, that is (seems to say, the ENSI)?

ANSWER - Yes, but to talk to databases.

Q. - And speaking of databases, the definition of identity and compatibility between different countries?

ANSWER - No. But it is equally well that I, you know!

Q. - But you spoke of equality and identity are two different words, then said that it means the same thing is the different protocol ...

ANSWER - I'm sorry for me ...

Overlapping voices

CHAIRMAN - Do not turn around the words ... (unintelligible because the microphone off).

DEFENCE - Mr. Dalla Vedova - President, we are talking about very important results, the words are extremely important, I insist that there is a clarification on what the consultant wants to say with every word.

PRESIDENT - But I must acknowledge that this meaning ...

ANSWER - I think I've answered that already, that is, equality, equality or the word the word identity is used by me in the same way.

Q. - Yes, yes, but it was the international protocol that I wanted a clarification, though ...

ANSWER - I do not know, I do not dialogue with the international databases because we do not yet have a database for the moment, so do not know ...

PRESIDENT - Where the words used are unambiguous in their meaning questions do well ... (unintelligible because the microphone off).

Q. - For example, always the question of the terminology of the words she uses in its report to conclude its investigation on finding 36 ... she gets to say that the knife 36, finding 36 that the track A and B, and I quote him saying she concludes that "It was possible to extrapolate the genetic profile of Kercher Susanna, on B, and A the same conclusion: it was possible."

ANSWER - Yes.

Q. - And this is what it is, identity, compatibility, equality?

ANSWER - Identity.

Q. - Why has not written equality? It has been possible is another definition.

ANSWER - No, it was possible ... is not an excuse, it was possible is an expression in Italian. It has been possible is not an identity, it was possible in Italian means ... that it was possible to have succeeded.

DEFENCE - Mr. Dalla Vedova - I, the President, I ask not to be disturbed because I too feel the buzz that is frankly out of place.

ANSWER - I'm sorry, Attorney, it was possible ...

PRESIDENT - (Unintelligible it off microphone). Excuse me, doctor. We ask everyone to avoid interruptions.

Q. - I understood what she says, then ...

ANSWER - It could be the same ... we did, here, to extrapolate the genetic profile ...

Q. - So the question I am asking myself: once you are able opinion which you have given with reference to the comparison?

ANSWER - We have been able to extrapolate the profile means that the profile is found equal to that person.

Q. - Why did not write it ... instead of finding the 25 she has clearly defined that there is equality with Guede? I do not understand this.

ANSWER - There is no particular reason, I use it is Italian ...

PRESIDENT - (Unintelligible it off microphone).

ANSWER - Yes.

PRESIDENT - And because it is useful to use so many hours because she exposes him at this stage can be specified, even if he has already written ...

ANSWER - I can specify. I apologize for the lack of clarity that I used in writing this ...

PRESIDENT - (Unintelligible it off microphone).

ANSWER - No, absolutely not.

PRESIDENT - If you want to specify even specify.

ANSWER - I can then specify the genetic profile of Knox was found on the track A finding of 36, so it is equal to the extrapolated swab saliva ... that is, the genetic profile of the salivary acquired from the same pad and track B on the same finding was identified Meredith Kercher's genetic profile as compared with the genetic profile extrapolated from the victim, made from the swab into the wound on his neck, so we clarified with different terms, perhaps the most clear here that I thought ...

Q. - Always Look on the knife, while we're at, I wanted her to tell us exactly how he first got this knife, because again the important elements for proper analysis are different and finding, the elements of conservation are extremely important, at the risk of affecting the result, right?

ANSWER - Yes.

Q. - Can you tell us something about the conversation, for example? What are the elements of preservation that can eliminate the possibility of an investigation?

ANSWER - What can delete?

Q. - What can affect the DNA analysis.

ANSWER - Well, certainly not a proper conservation in the sense if I have a fresh track, so wet, as I said before, if this track is kept for some time in an environment not suitable, so maybe the heat in a closed plastic bag where the water can not evaporate naturally facilitates the proliferation of microorganisms, of course, what inevitably happens after only a few days the track is not usable because technically you see, in short, precisely and objectively, which most likely looking at this track we will not have any genetic result, precisely because the track has been altered, then a track ... I'm sorry to say.

PRESIDENT - (Unintelligible it off microphone), that has managed to attach the tracks recorded in the people means that conservation was correct?

ANSWER - Yes, conservation has been corrected to the point where the DNA is stored properly and so it was then possible to analyze precisely in the analytical laboratory and then we had the genetic profile of the respective sample.

Q. - Do you agree with this indication of the main technical issues to be addressed, ie the first is the finding, the second is the preservation and then there's the chain of custody, then a repeatability test ...

ANSWER - Repertoire of the problem ...

Q. - ... which are all essential elements for the success of a test?

ANSWER - The problem of degradation, is what I was just explaining now, chain of custody of the exhibit, test repeatability, is a guarantee, of course.

PRESIDENT - (Unintelligible it off microphone) the hearing on 22 May?

DEFENCE - Mr. Dalla Vedova - Today.

PRESIDENT - Yes, but it is a question that ... (unintelligible because the microphone off).

DEFENCE - Mr. Dalla Vedova - is one of my document I prepared to facilitate the defense and then we'll show as a summary.

PRESIDENT - (Unintelligible it off microphone).

ANSWER - No.

Q. - So back to her involvement she has received the specimen 36, can you tell us, has already said in the preliminary hearing, but briefly to the Court as it was received by her?

ANSWER - Yes, let's say you received a carton where it was introduced just after the knife seized from the Flying Squad in Perugia as a result of search activity in the home of Raffaele Sollecito, so it was not acquired from us but it has been acquired by this Office, it was packed with a box, say a carton containing presumably ... maybe an agenda, in short, a subtle something which was to take this one because it was just the opening we say high, and therefore been stored in this envelope and was delivered to us, precisely in the laboratory, where he was photographed and analyzed.

Q. - in the preliminary hearing she had spoken of a box of shirts.

ANSWER - No, not really ... that is too thin to be a shirt, I do not think that shirt.

Q. - But was not finding one of those vacuum bags that you used?

ANSWER - No, but the ones we have just us. The only ones we have.

Q. - He did not make even the Cabinet of Scientific Police in Perugia?

ANSWER - but should not be told why they have our bags, there is an envelope with the words I know Police Scientific Laboratory, we are always bags of Scientific Police Service who may be distributed if we have the chance to Toilets , and then in every case, the knives are always at least protected part of the blade with something a little 'more rigid, even if I find I would not just carelessly placed in an envelope, I did not know what , but I would maybe put in an envelope folded in short, I would protect the blade so as not to cause an accidental cut, because cutting a thin envelope ...

Q. - At this discourse was not even better to put an envelope inside the box, as you said that all the finds have ...

REPLY - But if they do not have a bag ... I'm sorry but the cardboard box ... now maybe they do not know, I knew, wish I knew how to say enough ... from absolutely clean, reliable, in short, is not that a box was found maybe in the trash, that's for sure, maybe it's a box ...

Q. - How can you be sure, excuse me, Doctor? It was a box of a shirt, now said it was a box of an agenda, like ...

ANSWER - No, look thin but it is a box, look at that we can also see, that is low, then we can go even a shirt I do not know, but it is a few inches low.

Q. - Yes, but it was sterilized according to you?

REPLY - But we have no findings sterilized attention. Even our ...

Q. - But the bag, yes.

ANSWER - No, sorry, no, no, wait, we do not act in infertility, but the findings are not sterile, for goodness sake! We sample the substances from floors, objects, sterile for me is something that has no microorganisms, we have nothing of sterile, even gloves, the gloves are in a package.

Q. - Do you remember the date on which it was received?

ANSWER - There is a record. No, the date ... it was November, but the exact date in November definitely not, should I watch the minutes of transmission, the transmission letter.

Q. - So you mean that there may have been a breakdown in the transmission of the findings from Perugia to Rome to issues of temperature, humidity and external factors that can ...

ANSWER - No, no, I can not be excluded but this would have affected the analysis in order to remove something.

Q. - In fact, now we get there.

ANSWER - Perhaps something has taken away ...

Q. - In fact, the degradation of what is involved, a doctor, usually?

ANSWER - The elimination of virtually physical parts of DNA.

Q. - But even the reduction?

ANSWER - Reduction in what sense?

Q. - A major difficulty in the assessment?

ANSWER - Because it is a consequence. The main difficulty in analyzing is a consequence of degradation, however, I repeat, as I mentioned before, maybe not quite stressed this point, the degradation does so only in trace explosive high humidity, so for example, one of the towels the victim's room, for example, was completely soaked with blood, and we find in our bag, of course, security was placed on the floor behind the towel, we analyzed a month after some ..., a couple of months, despite the fact that almost was soaked with blood, not having been able to do virtually dry because it was not possible to lay the towel, there was no possibility ...

Q. - Of course, this is clear.

ANSWER - Although it was kept in optimal conditions of cold, thus temperature-controlled, since it was not possible, however, the evaporation of the moisture we were not able to extract DNA, because obviously it was so wet that even the cold could not have time to stop the degradation, so ...

CHAIRMAN - And you were not able to extract DNA?

ANSWER - In this case, no, despite the fact that ...

CHAIRMAN - So is this degradation, which prevents ...

ANSWER - Yes, prevents, for behold, your shred microorganisms, in this sense, from the chemical point of view and then chopping the DNA can no longer find him to make those famous PCR analysis on those specific points, though there ' it integrates the chain is not possible to analyze them.

Q. - Look I am now 36 instead analyze the findings. She also has a color slide we see perhaps the best.

ANSWER - Yes, I've got say that the slide-depth, yes.

Q. - A clarification, the knife was kept alone or with others had knives?

ANSWER - No, it was packed.

Q. - And you have other knives that were analyzed together or individually they were?

ANSWER - No, I always find, stored individually.

PRESIDENT - I'm sorry, Attorney, what was the question?

DEFENSE - Attorney From Widow - The question was this: the knife, finding 36 wanted to know if he had arrived separately and then I asked the other knives, because there are knives ...

PRESIDENT - Another knife.

ANSWER - There are two.

DEFENSE - Attorney From Widow - Three.

ANSWER - Three? Two.

DEFENSE - Attorney From Widow - Three came because I was also me, doctor.

ANSWER - Three then, well ...

PRESIDENT - (Unintelligible it off microphone).

ANSWER - Yes, however, are those where there have been some interesting results say ...

Q. - Do you know you got a box of the knife 36 in the first or the first day immediacies with three knives in a box with three plastic bags, remember him?

ANSWER - Separate? We can look at the pictures.

Q. - No, not separate, in separate plastic bags, but in the same container.

ANSWER - Yes, you can separate plastic bags, we can watch the repeat ...

Q. - So it is possible that many items have been packed with the boxes and then sent to his office?

ANSWER - Yes, that is, if ...

Q. - That is, all together in the same box?

REPLY - But they are individually sealed.

Q. - Individually sealed, thanks.

ANSWER - Yes, you can. Individual envelopes and then put them all in a container in a box that collects them.

PRESIDENT - But in individual envelopes?

ANSWER - Yes, in separate envelopes, this box to be ...

Q. - In particular, finding the knife 36 and you get to his office the first activity you do what?

ANSWER - That cataloging, so this finding is associated with an identification number, 36.

Q. - That number we saw today.

ANSWER - Here, with the bar code that links to the file and then taking pictures as shown here.

Q. - This bar code goes into an archive?

ANSWER - Yes, the archive information of the LIMS, of course.

Q. - And you in your lab have a record of activities every day of every artifact and the activity?

RESPONSE - In a sense, yes, I do not understand the question.

Q. - Let me explain. The find 36 ... maybe it's better if we go step by step, then when we get to the point am referring it to him this question. So this finding visually analyzed.

ANSWER - Yes.

Q. - And ICTU oculi seemed something about this knife?

ANSWER - Yes.

Q. - For eye?

ANSWER - For eyes, yes, only on the blade, the point ...

Q. - You have also used a microscope?

ANSWER - No.

PRESIDENT - I'm sorry to eye had already said this morning ...

ANSWER - For Part B was in the eye this morning say that row of streaks in a deeper, more engraved say.

Q. - But that streak can be seen from the photograph?

REPLY - Oh, no!

Q. - But you have not taken the photograph of the streak?

ANSWER - It was not looking, we tried but the metal reflects, this was the problem. The metal reflecting and reflected in the way ... because the streak is visible not so simply by placing the specimen under illumination say ... to say that the conventional reprovit that the tool we use for photography, it was possible to detect it only by putting it under a spot of bright light and say, turning so as to change the angles with respect to the incident light, only in this way are highlighted at the sight of these streaks, so even if you have ... we tried to take pictures but reflected much, that is, the blinded ... could not see anything, they were virtually white spots of light, so do not ... But, of course, the streak being something like say ... absolutely resistant to any sampling is still present.

Q. - But that streak is not on the investigation by your analysis?

ANSWER - Why can not it?

Q. - It is never written that there is a streak on the knife.

ANSWER - No, it does not say ... But let's say for uniform sampling we do not indicate the appearance of the track, because otherwise we should describe all the tracks, so ...

Q. - But if he had found that there was a streak ...

PRESIDENT - Lawyer, however, let me finish ...

Q. - Yes, sorry.

ANSWER - That is not true about the relationship I described in a tip, but then again being in this particular case an inherent characteristic of, say indestructible at this point, unless you want to destroy limandola say, the part that has this streak is completely intact because they do not ...

Q. - The knife where he is now, Doctor?

RESPONSE - In our offices, still preserved ...

Q. - So it would be possible to examine it?

ANSWER - It is in our office, not personal property.

Q. - So you can examine it if necessary?

ANSWER - Yes.

Q. - Look always going on what were the investigations that have carried on ... and the diagnosis of the nature of activities and above all see that there are points A, B, C, or as you decide you have found those tracks?

ANSWER - As I said this morning the sample A, this, and sample B had say a logical sense, logical, and also an induction because the repertoire at this point rather than another, a little ', in fact, with regard to B visually emerged from what, precisely this streak, so there is no trace apparent emerging, that was obvious, no biological trace of this was apparent on the blade and handle, I trusted this address to sample, try to sample in these streaks because it could be an interesting point for some reason, say a streak that could be had then, indeed, some genetic response, while at point A on the handle as I said this morning the sample was taken, as is usually done more or less in all the knives of this type, where there is a tang, that is, this ...

Q. - Yes.

ANSWER - The point here is that almost looks better, it stops moving the hand when a person wielding a knife and strikes a blow, of course, having the knife ...

Q. - But excuse me, excuse me ... this doctor was a kitchen knife.

ANSWER - Yes.

QUESTION: - Found at Sollecito's house.

ANSWER - Yes.

Q. - Why are you associating it with ...

ANSWER - I do not associate with anything but if I brought ...

Q. - Why is contesting the same feature ...

PRESIDENT - (Unintelligible it off microphone).

ANSWER - I do not associate with being nothing but a knife of that size, so not a knife, meal, and since the victim was stabbed, that he at least say that the wounds were still thinking of a sharp object ...

Q. - Yes, but with a knife like this ...

PRESIDENT - (Unintelligible it off microphone).

ANSWER - I'm sorry, I analyze a knife because otherwise it would not make sense to send me a knife like this, certainly in a shoot that I carry a knife say I find it quite bizarre, so you might say ... I do not ask such questions because my role is not you ask me why I have sent this finding, I have to analyze it objectively, then I analyze what it is that you commonly use a knife ... as we say in the field say homicidal, not in the kitchen, and a knife serves to hurt ...

Q. - But when one cuts the bread, according to her as he takes the knife, not holding in the same way?

ANSWER - No, not holding in the same way.

Q. - Why? Do not take it on the tang?

ANSWER - The bread, I'm sorry, I do not stab you, the ...

Q. - The Cut.

ANSWER - So lets say that this is a knife ...

Q. - Does he have a knife, a professor? Meat, what it is.

ANSWER - No, just look at the meat ... maybe even a piece of meat. But, behold, I would like to stress this, this track, the A, has not been found here, was not found here at the point D ...

Q. - Where, however, have made any investigation?

ANSWER - How we did the investigation ...

PRESIDENT - I'm sorry only to acknowledge, she is showing ...

REPLY - Of the several points ...

PRESIDENT - (Unintelligible it off microphone) wood?

ANSWER - No, plastic, black plastic. So the profile of DNA, or genetic, however this result was not found at a point as to say in line or at a central point of the handle, here is the central point,

here indicated by the letter F, can possibly be the typical track I may seem, I can be detected by normal use of a knife, that I love, then hold it in the middle of the handle and cut, that's me so I use a knife.

Q. - Let's ...

ANSWER - I'm sorry I have to say because then the A is different. On the other hand is different, because I do not have anyone at this point because in my normal use of the knife and rub ... even going as before because I do not have any resistance when I cut in front of which there is not another loaf of bread that stops me running, so if I find here is because I want to try to find a use that is not to cut the town, which is then use to impale a piece of meat, a potato, I do not know, something, then that indicates there more than a spear cut.

PRESIDENT - That is the point there ... (inaudible off mic it).

ANSWER - Why is the point where I finished the race and I inevitably end up if I have an obstacle in front of the tip.

PRESIDENT - It is there that is?

ANSWER - That's where I find the genetic profile, then how ...

PRESIDENT - The genetic profile?

ANSWER - By Amanda Knox. Then why has been used or because there is the track is not for me to say ...

INTERVENTION - But she is well expressed ...

Q. - But you can not exclude that ...

PRESIDENT - I'm sorry, but we do questions ...

ANSWER - I'm sorry. No, Lawyer ...

Overlapping voices

PRESIDENT - Lawyer, is conducting the review, the same defense, but not ...

ANSWER - I can point out?

INTERVENTION - not for her to say ...

PRESIDENT - I'm sorry, sorry, we do ... (unintelligible because the microphone off).

INTERVENTION - We avoid, yes.

PRESIDENT - Face to ask the question, but not ... (unintelligible because the microphone off).

INTERVENTION - The question I dare not, but she said "not for me to establish this," I say that is rather well expressed.

ANSWER - No, but I'm sorry but stab ... I did not say who or what.

PRESIDENT - I'm sorry, please consultant, the witness is highlighting the reason why ... (unintelligible because the microphone off) the point marked with the letter A to this.Please, go on then.

QUESTION - The question is: what is the reason why she chose the point D and point F, and also the point ... the other word, the G?

ANSWER - Yes. Then the G-spot and the point C are on the blade.

Q. - And this is clear.

REPLY - The point D and point F are other samples on the handle, because, having already had two results, because these samples, the A, B and C are prior to the other four, were made at two different times, having had positive finding in terms of DNA just wanted to deepen the analysis of this finding and see if I could have other genetic results, that's all, then in different parts of Campania.

Q. - But she also said that I did not see anything?

ANSWER - No, it does not see anything.

Q. - So that deciding where to look on the samples was done as a prerequisite?

ANSWER - So on the assumption ...

Q. - What B said, but the others?

ANSWER - I'm saying. B and F for the use that can be done with a knife ...

PRESIDENT - (Unintelligible it off microphone).

ANSWER - also because the voice is going.

PRESIDENT - On the blade the expressed, others are following. Please, Lawyer.

Q. - In conclusion, many of these investigations have given a result? If he can repeat.

ANSWER - Only two, only the sample A and sample B to have given a positive result with regard to the extrapolation of a genetic profile, so this track and this track on the scratch.

PRESIDENT - On the scratch ...

ANSWER - That the furrow, scratch what we have said before that it was visible to the intense illumination.

QUESTION - Listen to the track, the first track, called B on the blade you can exclude that there were also other foreign material?

RESPONSE - In addition to what I have sampled?

Q. - Yes.

ANSWER - Well, I can not be excluded, I think I did a sampling rather than cured, however, say ...

Q. - But if you had used a (inc.) and a microscope, or she did the shoot with a macro could see something?

ANSWER - I do not know, I've never done this type of analysis.

PRESIDENT - Excuse me, attorney, regardless of means to see from the analysis of DNA?

DEFENCE - Mr. Dalla Vedova - That's right, or over the same time in order to ensure ...

ANSWER - There are tests that we use in our laboratories, so ...

Q. - The microscope is used to determine ...

ANSWER - Yes, of course, but to ascertain what? The presence of ...

Q. - As a track.

REPLY - But the track if you do not see color I have to see it, that I have to color the cellular material may be present because if we do not doubt that cell is visible.

Q. - But you said that he saw nothing on the knife?

ANSWER - Yes, I did not see anything.

Q. - So there was no need to use a microscope to see better?

ANSWER - Yes, but a microscope would have highlighted ...

PRESIDENT - Excuse me a moment ... (unintelligible because the microphone off).

DEFENCE - Mr. Dalla Vedova - I, the President, I realize that many hours have passed, I realize that perhaps is a very technical and can bore, but I do I have to go ...

PROSECUTOR - Dr. Comfortable - No, Lawyer, but it was the noise ...

DEFENCE - Mr. Dalla Vedova - If there is any dissatisfaction ... I do not do anything but go forward.

PRESIDENT - The dissatisfaction was disturbed by the buzz that the defender who is conducting the examination and cross examination, then came to meet a need for defense, not to other needs, the argument is absolutely nothing like you said, even .

Q. - Look in the coincidence of the scratch was examined for the presence of human blood?

ANSWER - Yes.

Q. - And what was the outcome?

ANSWER - Negative.

Q. - But it was found ...

PRESIDENT - Lawyer, I did not understand, that human blood was found?

ANSWER - No, the outcome was negative.

CHAIRMAN - It has not been found?

ANSWER - No.

Q. - And instead they found a track called sample B.

ANSWER - Yes.

Q. - What volume had this track, you remember? That speak volumes of magnitude in a simple way to say it was a great track, a small track?

ANSWER - I did not see visually, I can describe it to him that the scratch, it is roughly 2 cm long ...

Q. - The extraction of DNA that she found what she meant?

ANSWER - I mean the DNA that is extracted from this track ...

Q. - What was not blood?

ANSWER - That did not come from blood, or rather, say, the test is negative, but since then the response of the DNA that I had very, very small quantities in any case can not be excluded that there might be blood but it was not in quantities sufficient to be detected even with a very sensitive, what is the witness that we normally use, so no blood is certain as to why there is no blood can not be excluded that a false negative due to the amount, even because I mean, this track has been finding a length of roughly an inch along this streak ...

Q. - What we can not see, however, that tells you but we have never seen.

ANSWER - I know, but the knife ...

PRESIDENT - (Unintelligible it off microphone).

Q. - Absolutely, but it would have been appropriate ...

REPLY - But you can not photograph.

PRESIDENT - But we are the statements of the witness.

ANSWER - That can not be photographed.

PRESIDENT - Excuse me, doctor. Please, go on then.

ANSWER - The streak had so roughly that I remember this extension, the sampling for DNA analysis was carried out on a good hand, then the entire length, on almost a good part of this length, so it was past, been rubbed roughly at precisely the point B in the direction of the head - tail almost in the direction of the tip - the tail was rubbed this buffer, we use the rails Woobie just for sampling, not seeing anything to the naked eye, so there is no apparent trace of course it was expected that at most we could get something small or another we had the chance result of zero, almost, because there was nothing that we did think of a possible result.The specificity for the blood test was taken by force of circumstances on a small portion of that streak, because otherwise the test itself having to spend another tamponino, a stick of plastic we almost passed it across the streak Remove any genetic material that could no longer be used for the genetic test, because the examination of the species, say the nature of blood is no longer possible to keep the same material and use for genetic analysis, so we try to analyze the present analysis of the type of

track we sacrifice a small part of the track, in general this, so if we cut a track blood a little bit, as small as possible, and try to have precisely the diagnosis of blood or saliva or ...

PRESIDENT - An alleged blood trail?

ANSWER - A suspected blood traces and then, in fact, confirmed by the test or not. In this case we could not cut something because it was a blade, so the only thing you could do is to say this stick, then rub this stick that is part of a diagnostic test for blood on a very small portion of that streak, because otherwise I'd definitely stick with the dragged away any genetic material that here I could wait and then throw it, so maybe I was diagnosed with blood, eventually, I am not saying this would happen, but the eventual diagnosis of blood but I could not longer use that sample to analyze for the purpose because the genetic analysis are different, so I sacrificed a small portion, here is an attempt to diagnose of blood, of course, as we said could not, then I still went ahead and I championship with the rest of this swab streak, because this was the main purpose of genetic analysis in general, to establish a genetic profile, then the origin of the track will be sacrificed for the sake of identification that you can have with the examination DNA, because they know that it's blood but do not know who it belongs to has very little to know the genetic profile and vice versa does not know what nature is much more informative, because I know for a fact that the DNA comes from any source that belongs person and not just a blood, saliva or semen, then we say that the policy is to give ... in general, this genetic analysis is to give priority to the possibility of extracting DNA and DNA analysis , then obviously if you can determine the nature the better we say, is a more complete information, however, the main data is to have identification by DNA, which is why you can not safely be blood but I would not rule out that The same sampling procedures and the fact that it was still carried out on only part of the streak is not what we say may have given too small a quantity, this can not be excluded.

Q. - When you talk about just talking about small amounts classified as low copy number, we can better explain what is it?

ANSWER - We say this is a deduction that you are looking at the genetic profile, you can not know in advance, so a small amount of DNA is an amount that does not allow me to have a

complete genetic profile in all its parts, then all the genetic loci that we first have seen, the gene 16 points, and will not let me say that you have adequate height of the peaks, so high that it is always roughly above the 50 RFU.

Q. - And in this case the height How long has she found?

ANSWER - The height to see why we can still be found here ... in here it is, magnify it, the height is quite small say. Okay, so these are the loci and this is the electropherogram, this scale is the RFU, and this is of course also at the bottom, I do not know if you can see it, maybe a little ', the lower part of t the designation of alleles RFU in height, so for example in the first locus, the D8, we have the allele 13: 41 el'allele 16: 28, the locus of the first color, for example, the allele 18 are respectively 14 el'allele 47 and 32 and so on, we do not know of peaks 99 and 36 ...

Q. - But, doctor, are all 41 or 47 highest peaks ...

ANSWER - No, someone is 51, 75, depends a little 'from the gene locus.

Q. - What?

ANSWER - This, the D18 is 75 and 39, as I know, the D5 is 113 and 36, so let's say I'm not really well balanced and in particular, many are low-level RFU.

Q. - Here, low RFU?

ANSWER - Yes.

QUESTION: - Ensured that what else have you done? She proceeded to do other activities?

ANSWER - No, because it is used up in a single say genetic analysis, because I had precisely the result of low amounts of DNA I have decided to ...

Q. - You talk, I'm sorry, DNA extraction?

ANSWER - Yes, low amounts of DNA extracted, I tried ... I normally say, if the extracted DNA extraction is a good, say a good amount of DNA can also do more analysis on the same sample, then maybe I can repeat the process of PCR also two, three, ten times, perhaps in the salivary buffers can be repeated many times because the DNA is very abundant, but in this case the volume of extraction, which was 50 microliters, was almost entirely used to conduct this analysis precisely the DNA, so this amplification, amplification repeated because we say so small a

quantity of DNA would surely have resulted in the production of data is not the first attempt and is the second attempt, that is, if I split it in half the amount of DNA possibly afford to repeat the analysis then surely I would not get any results because below a certain amount of DNA by PCR does not work, fails to amplify, so you can amplify only one allele virtually a single copy of DNA , our systems have a limit, however, so do not have infinite resolution ... how to say, they have a limit to the amount below which you can not go precisely to obtain a genetic profile, since every amplification I throw away the material I use, I can not reuse time I tried one solution, then analyze all that c'avevo, which was still small, and got this result.

Q. - But you extract what he called a volume equal to 20 to 22 microliters ...

ANSWER - First of 50 then I concentrated.

Q. - Then the extract was concentrated in 10 microliters.

ANSWER - Yes, yes, then we say that is just the final value, the maximum volume that should be used in the reaction mix, PCR using predetermined volumes of reagents, among them is the predetermined volume of DNA can not be in excess of 10 microliters, a microliter is one millionth of a liter, then 10 microliters are the maximum that I can put in the mix for the amplification, so it was concentrated, water was removed.

Q. - You did not think at the time of dividing into two parts so you can repeat it?

ANSWER - I just said. No, definitely not because I felt I had nothing neither the first nor the second time because ...

Q. - But not one of substantive requirements that we mentioned earlier, the repeatability of the test to be sure of the test itself?

ANSWER - No, the word was different, however, say it was not a sine qua non, that was ...

Q. - Repeatability of the test as a guarantee.

ANSWER - Yes, it was suggested that they may become more confident in their own as this can be repeated, but if the analysis is conducted, however, with all its controls, control positive, negative, that the goodness of the analytical result was in relation to checks carried out on the same reaction for me is still reliable, because otherwise I should investigate any track the two

times we did not analyze any track twice, unless you have needs to improve maybe a locus, a spike, one thing, otherwise amplification analysis is done for all else ...

PRESIDENT - is made of one?

ANSWER - Then the PCR is usually done only once for all tracks, even if we have a kilo of DNA to say, because it is not economically possible, from the point of view of both the economic times that we say exactly cheap money, commitment Economic, would not make any sense to repeat it twice, the analysis is reliable when it is conducted according to criteria established by the company say the kit and a good idea laboratory, say a genetics laboratory.

Q. - So I wonder if an item classified as small, ie, the low copy number, there are no entries in this special case, because the amount is so little you're forced to repeat it to get a better guarantee?In your opinion in a case of this kind would not be necessary to repeat it?

ANSWER - If I had another aliquotina like this would have made sure, that is a dog chasing its tail, is too small, I have to analyze for strength once to have groped a result, I can not divide because otherwise I would definitely 100% the result, so ... that there is no escape from this ... I mean you quit. I agree with you that it would be desirable to repeat this analysis.

REQUEST - The concentration recommended by the international protocol in the case of low copy number, ie a hypothesis of very small amounts?

ANSWER - Concentration of what?

Q. - You have 10 microliters concentrated in what was 20 to 22 microliters, then do the amplification.

ANSWER - The amplification, of course.

Q. - Then I ask this concentration is a standard practice when it comes to amount of small, low-copy number?

ANSWER - Yes, precisely because I have to bring my whole entire sample, so I concentrate for maximum ability to use ... because I can not use more than 10 microliters, this is my limit, I'll impose the kit, I for these 10 microliters them I must return to that volume, that is, if I started with 100 microliters I was supposed to bring the sample in 10, nothing happens to concentrate the

sample or not the DNA itself, because we do not use one that does not use ... a mixture of salts in which the DNA is dissolved, I mean, normally when the DNA is extracted can have two fates, say, one is dissolved, so to speak, in water, like our case, so we have a molecule of DNA which remains dissolved in distilled water, sterile, okay?The other possibility is that this DNA can be preserved, then extracted in a buffer, so it is said, for example TE, Tris / EDTA, the salts are, then we say that buffer has the advantage perhaps of more long-term preservation DNA, but beyond that has no other special benefits, if I concentrate I can not modify the volume concentration because there is nothing but water and DNA, so I can bring one liter to 10 microliters, and I did not change anything in my tube, there are salts that are concentrated and which may affect the subsequent analysis that I mean, so the fact that he ...

Q. - But exactly how did the extraction with a tampon?

ANSWER - By ...

Q. - Absorbent?

ANSWER - No, by bio - AND Zeta 1 of Kiagen robots so it's a system ...

Q. - You can tell it's a tampon?

ANSWER - A tampon? Sampling.

Q. - The sampling was achieved by an absorbent pad.

ANSWER - An oral swob, yes, a tampon, it's called oral swob, that is, a buffer that is used for salivary samples.

Q. - So the procedure was not made with mineral salts that she said?

ANSWER - No, it's another thing. No lawyer, no. Then ...

Q. - Then why did you refer?

ANSWER - Then the procedure is to sample buffer, that I pass something, rub something on the blade which is called ... is a pressed paper very end, this is the buffer that I used, that is, to withdraw, this buffer is was then subject to extraction, because I DNA, any DNA as do I download it from the blade? I have to have on a support, this support is the buffer.

Q. - You checked it out, then concentrated and then amplified?

ANSWER - That's right.

Q. - You had said at the hearing before the GUP was not sure of the result because the amount was small.

ANSWER - say the result was uncertain.

Q. - You have just used the expression "Either all or nothing".

ANSWER - Yes, exactly.

PRESIDENT - (Unintelligible it off microphone).

ANSWER - We have had the genetic profile, so we say is not very high in the peaks but there is a complete genetic profile in nearly all its parts.

PRESIDENT - Perhaps we can also ...

DEFENCE - Mr. Dalla Vedova - I, the President, if he wants to suspend because I realize from nine and a half now ... perhaps because I have not done so unfortunately I do not foresee.

PRESIDENT - We'll spend the day tomorrow to use up the exam. Tomorrow we will try to exhaust the examination and cross examination of the witness Stefanoni, for the other texts we will be a subsequent hearing.

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