

one rubber boot fitted the one foot, and asked what I say about the possibility of trying to fit the boot to the foot of the cadaver, I should say that in the present condition of the foot any attempt at such a comparison would be valueless. If the boot fitted the foot very beautifully in its present condition, it is absolutely certain that it would fail to do so during life. As to what I say in regard to the evidence of Dr. Benbow where, at page 389, he said "There was absolutely no toe nail on the little toe and also the big toe nail was curved indicating ingrowing toenails at some time or other," the condition of the nails now is such that any reference to their ante mortem state would be purely speculative. In any case, of course, ingrowing toenails are very common and it is by no means uncommon to see a very small nail on the little toe. They are both extremely common features - ingrowing toenails, and a small nail on the little toe. I was in Court when Mrs Routledge gave her evidence. I paid particular attention to the right ear of Mrs. Routledge; that was the ear I had an opportunity of observing. There was no scolloping of the helix of Mrs Routledge's right ear. There was not the same prominent folding of the helix that one customarily sees, but there was no sign of any flattening, and no sign of any notching of the helix. As regards the lobe of the ear, it was, in my opinion, a very well formed lobe, slightly attached, not completely. The point that I was most interested in in connection with her ear was the interval between the tragus and the anti-tragus, the so-called incisura inter tragica. In Mrs. Routledge that was long and narrow, and corresponded almost exactly with the same region shown in one of the photographs of the right ear of Philomena Morgan. There is one photograph there with the hair coming down below the helix. It in no way corresponds with the ear of the deceased. There the incisura inter tragica is short and is widely open. It is correct that Dr. Benbow said that the parting of the hair falls naturally on the left hand side and that he demonstrated

that feature in Exhibit OO. I say that even on the photograph exhibit OO, and the demonstration that the parting is on the left is a very unconvincing one. I do not agree with Dr. Benbow's evidence on pages 376 and 377 where he made reference to the shape of Linda Agostini's teeth as disclosed in the photos of Exhibits 16, 17, 18 and 19, and said that those teeth shown in those portraits in no way resemble the teeth in the cadaver. The condition of the teeth in the corpse is consistent with that which is shown of the teeth in the photograph of Mrs Agostini. I would not agree with the statement on page 358 of the transcript where, in comparing the upper lips in Exhibits NN, and OO, the doctor said "They are lips that from a medical point of view, in my opinion, could not be confused at all because they are so distinctive." If you read the passage which states "I point out the right hand upper lip as it curves to the angle of that mouth; on the left hand side one has to come, in order to get coincidence, slightly lower. The corpse had an injury to this upper lip here and so caused a certain amount of drooping", and asked what I say about the lips on the photo Exhibit 20, I say that I do not agree with the reference to the upper lip. When it comes to comparing the lower lip, I believe that Philomena Morgan has a very characteristic lower lip. It takes her into a certain class. It is a full lower lip; it is everted, it is rolled outwards. In my opinion, that in no way corresponds with the lower lip of the corpse. There is no doubt that changes have modified the shape of both the upper and the lower lip in the corpse; but, again, in my opinion, despite those changes the type of lip which is represented in Philomena Morgan's photograph would still be retained in the corpse if they were one and the same person. I have been in Court and heard the whole of Dr. Benbow's evidence relating to the geometrical lines that he has drawn for comparison on the faces of various photographs. In my opinion the method is quite valueless. As to telling His<sup>W</sup> Worship why in my opinion that

contour of the skull. No anthropologist would attempt to establish any measurements on those tracings even though he had them in four planes. The procedure is, of course, to take all your measurements very carefully first and tabulate them, and following that to take your dioptrographic tracings and following that; you file your measurements with your dioptrographic tracings. That is the method that has been employed for close on 100 years and it is the method which is still employed. Dr. Benbow's photographs exhibits OO, and NN, fulfil none of the required conditions, and that alone is sufficient to condemn the method. The second point brings up the question of these land marks. Now, certain factors must be taken into consideration, - all other things being equal - before one attempts a comparison between two faces. Quite a number of factors combine to either alter or to distort a face. Take first the factor of age. The bony tissues of the face continue growing until approximately 25. Growth is very active from birth until about 18 in the female, when it slows down. In other words, the period 18 to 25, though it is still a period of growth, is a period of slow growth. In the period between birth and 18, there are the ages at which, of course there is an exacerbation of growth; <sup>that is,</sup> in which growth takes place more rapidly. It is not a constant acceleration. Now, in addition to the bony tissues altering the principal changes are brought about by the development of the sinuses, the maxillary air sinuses, in the development of the nasal cavities. There are changes in the soft tissues which take place. There is a marked change in the soft tissues as an individual becomes older. That is just an age factor. Then there is the change in the soft tissues which are determined by the health of the individual. There we can have soft tissues altering very rapidly, and very markedly. In this particular case, Dr. Benbow is attempting to compare the face of an adolescent of 16 with that of an adult of 25, or, as Dr. Benbow maintains, 23 - approximately 22 or 23. In any case, there

method is valueless, there are two principal reasons; firstly, the plane of presentation of the two faces is not identical in the two cases, and, secondly, Dr. Benbow has relied almost exclusively on soft parts and soft landmarks for making his measurements. They are the most unreliable of all anatomical features. Anatomically and anthropologically no attempt is ever made to draw a metrical comparison between two heads unless both planes of presentation in the two are the same in every detail, and unless the measurements can be carried out in three dimensions. Anthropologists, of course, have come up against this particular problem in their efforts to establish the outlines of skulls. Now, if the photographic method - we are referring briefly now to photography - could have been applied, it would have been. I have brought along just one sample of the type of work of this nature that is done. It represents the diopetrographic tracings of 90 Australian aboriginal crania. This is a routine type of work carried out in anthropology. The skulls are measured in four planes. There is the facial view, the lateral view, the vertical view and the posterior view. They are called ✓ the norma facialis, the norma verticalis, the norma occipitalis, and the norma lateralis. An additional one is, of course, the norma basalis, which is frequently taken. It represents the basal aspect of the skull. All of these tracings must be taken out individually, and it is a considerable task getting them. I will hand this book to Your Worship just to give you an idea of the amount of work that is involved in obtaining diopetrographic tracings. Imagine how much easier it would be if one could set up the skull in the same plane and then photograph it. It takes many hours to obtain these tracings of one skull. They must be done extremely accurately, and, as I say, if the photographic method could be applied, it would have been long ago. Once those tracings have been obtained, even though they are in a number of planes, an anthropologist would never attempt to take measurements on or between bony points on that plane tracing. The tracing at best only gives him the outline or

is an attempt to compare the face of an adolescent in the period just when growth is at a fairly high peak - it is going to slow down shortly afterwards - in other words, the age at which a young adolescent is going to turn into a fully developed woman, with a mature ~~age~~ woman whose age we say is 25 as a minimum, or, as Dr. Benbow would maintain, not more than 23. The second factor which can alter or distort tissues is, of course, injury. ~~injury~~ In the case here we have the nose fractured - that has produced its quota of distortion, and ~~at~~ both ~~the~~ angles of the mouth we have laceration. That has produced its quota of distortion. Also the effect superimposed by embalming and post mortem changes. They are considerable in this case. One has only to compare the photographs of the corpse in the Albury Morgue with those taken at the Sydney University to appreciate the extreme degree of distortion which has taken place. That can be attributed to post mortem changes, but principally, I should say, to the method of embalming which has been used. I understand that at Albury embalming fluid was injected directly into the tissues by means of a syringe and, in my opinion, the findings in the body at the present time are consistent with such a procedure. So that there we have three important factors all combining to produce some alteration or distortion of the facial tissues - the age factor, the factor of injury, and the factor of post mortem changes and post mortem embalming. Once those changes have taken place there is nothing one can do to compensate for them. The best one can do, again, all things being equal, if a metrical comparison is to be attempted, is to utilise land marks which will not have been altered by any of the factors which I have outlined. The best land marks to use are, of course, bony land marks, but even there the factor of age will produce some alteration. However, if any comparison is to be attempted it must be on the basis of measurements between bony landmarks, and it is absolutely imperative that those land marks should be fixed on the body itself. Admittedly, Dr. Benbow has been unable to fix his land marks in that way on the photograph

of Philamona Morgan; but it appears that no attempt has been made to establish fixed anatomical bony landmarks on the face of the cadaver. The procedure should have been, first of all, to have fixed the bony points on the cadaver and then to have taken a photograph, not to have taken a photograph and then to have fixed the bony points. You cannot establish anatomical landmarks on photographs, they can be done only on the subject.

(PAGE 752 FOLLOWS.)

*[Handwritten signature]*

With regard to the base-line, taking firstly "C" in Exhibit 63, this base-line has been taken through the anterior nasal spine. The important point is that it takes two points to fix a line. Dr. Benbow, if I remember correctly, has stated that that line in addition also passes through the rocking centre. If I remember correctly, when he went into the box on Friday afternoon, after Professor Cherry had given evidence, ~~he explained~~ to explain the base line he mentioned the anterior nasal spine and the rocking centre. I have been very uncertain ~~as~~ to what he was referring, but the point is that on this photograph one point has been used to fix a line and that is the anterior nasal spine. You must have two points to fix a line. I do not know how Dr. Benbow has constructed that base line. It is purported to pass through the nasal spine. In photograph "C", in my opinion, that line is a good two centimetres above that anatomical landmark, that is, the nasal spine. It is not right down beneath the septal cartilage. In photograph "B" of Exhibit 63 the outlines are so indistinct that it is impossible to say what is the location of the nasal spine. So far as that base line is concerned, I would regard it as being of no value at all, firstly, because it is not correctly fixed, and, secondly, in one photograph, photograph "C" of 63, it does not pass through that landmark, and in photograph "B" of Exhibit 63 it is impossible for me to say exactly where it is passing. The next landmark is the point which for the sake of a better term I will refer to as the focal point; it is the point from which most of Dr. Benbow's lines radiate. It has been located on this base line midway between the margins of the face. It is the point which is just below the ~~Marial~~, the nasal margin on the left hand side. That land mark

SUNDERLAND.

If the point which is that below the margin, the  
on this page line midway between the margins of the page.  
most of Dr. Benbow's lines indicate. It has been located  
refer to as the local point: If the point from which  
the point which for the sake of a better term I will

has no anatomical importance. It actually has no anatomical existence. It is taken as the mid-point of the base line, but the margins of the face are ~~not~~ hypothetical, so that that mid-point is merely the mid-point on a line joining two hypothetical points. In my opinion, it is impossible to fix such a point. As I say, it has no anatomical existence. If you look at photographs "B" and "C" of Exhibit 63 you will find that the outer borders of his base line, the points where the vertical lines cross them, it is said to be the face line, are purely hypothetical points. As I will point out in a moment, they have no anatomical importance whatsoever, they cannot be accurately fixed and for that reason the point "O" cannot be accurately fixed. By point "O" I mean the centre. We will take these land marks in order from below and work around them. The angles of the mouth as shown in photograph "C" of Exhibit 63 have been badly lacerated, and again in my opinion it is impossible to say where the angles of the mouth would have been located in life. Coming to photograph "B" of Exhibit 63, the outlines of the mouth, that is to say, the angles, are so indistinct that once again in my opinion it is impossible to locate the angles with any precision whatever. The teeth are an excellent land mark, but if one compares photograph "C" of Exhibit 63 with photograph "B" of Exhibit 63, I think it is fair to say, as far as I can detect it with these calipers, that the width of the upper right central incisor in photograph "C" is wider than the upper right central incisor in photograph "B". The second point is that the lower margins or the cutting edges of the teeth in the photograph of Morgan, that is photograph "B" of Exhibit 63, are obscured to such an extent that the nicks shown in photograph "C" of Exhibit 63 would be covered and at the same time I am unable to identify the shadows which

Dr. Benbow states indicate the positions of those nicks in photograph "B" of Exhibit 63. Taking the next point in connection with the teeth as a landmark, in photograph "C" of Exhibit 63 the lowest point of the septum between the two <sup>upper</sup> ~~other~~ central incisors has been taken. That represents the apex of the triangle. On photograph "B" of Exhibit 63 the lip is obscuring the cutting edges of the teeth and consequently that so-called corresponding point is at a higher level on the septum. I draw attention to the line joining the angles of the mouth in photographs "C" and "B" of Exhibit 63. In photograph "C", that is the face of the corpse, that transverse line joining the two angles cuts the incisor teeth just above the cutting edge. In the photograph of Philomena Morgan, photograph "B" of Exhibit 63, that line cuts across the incisor teeth well towards their upper margin, up towards the upper lip. In other words, there is much more of the incisor teeth showing below that line on the photograph of Philomena Morgan than there is below the line on the photograph of the corpse. The teeth have not been utilised actually in any great detail on these photographs. I am excluding the 21 measurements that Dr. Benbow has mentioned. I do not know what they are, but in these photographs the teeth have been used to take three measurements. If we may go now to photograph "A" of Exhibit 63, the teeth have been used in that particular comparison between photographs "A" and "B" of Exhibit 63. So that altogether very few measurements on this ~~series~~ series have been taken from the teeth. <sup>The</sup> ~~by~~ measurements have been taken from the lower margin and from the nicks which in my opinion cannot be seen in Exhibit "B", the photograph of Philomena Morgan, in Exhibit 63. Moving to the region of the eye, the inner canthus of the right eye has been correctly placed in the photograph of the corpse in Exhibit 63, working on the

assumption, of course, that there has been no distortion. I am just naming anatomical points as I see them on the photographs. In the photograph of Philomena Morgan, "B" of Exhibit 63, again it is my opinion that it is impossible to fix the position of the inner canthus of the eye because of the indistinctness of the outlines. There is a black area in there and I think it is impossible to fix the inner canthus with precision. Coming out upon the lower lid, the next point was the lachrymal punctum. The lachrymal punctum is placed too far laterally on the photograph of the corpse in Exhibit 63; it is far too far laterally. On this photograph it is at least four millimetres too far laterally. The same applies in the case of the photograph of Philomena Morgan, although the outline is a little indistinct there, but the point is definitely too far out on the point of the lower lid to correspond to the lachrymal punctum. Coming next to the outer canthus of the eye, the external canthus. In the photograph of the body, still referring to photograph "C" of Exhibit 63, the external canthus, being the point where the upper and the lower lids meet, is correctly placed. On the photograph of Philomena Morgan, "B" of Exhibit 63, the external canthus is located too far medially; it in no way corresponds to the external canthus. Along those points on the photograph of the body, the inner canthus is at the <sup>site</sup> ~~side~~ of the inner canthus, the lachrymal punctum is too far laterally, the external canthus is correctly shown. On the photograph of Philomena Morgan, the outlines of the eye are really too indistinct to permit of any establishment of anatomical landmarks. You cannot place with precision the inner canthus, the lachrymal punctum is located too far laterally, and the external canthus is placed too far medially. As regards the markings of the

supra-orbital ridge, the supra-orbital ridge is a raised prominence above the sharp supra-orbital margin of the bony orbit, and it varies considerably in the degree of its development. In most white skulls it is usual to see only a very ill-defined supra-orbital ridge, but it does vary in size. In more primitive races it is better defined. Since in any case it is a ridge of bone, it is very difficult to pin-point its location accurately; you may be on the summit of the ridge or you may be on one slope of it or on the other slope of it. It is not a sharp line. I do not know how Dr. Benbow establishes the position of the supra-orbital ridge. It would appear it has not been done on the corpse. It appears that the line which has been established on the photograph, that is "C" of Exhibit 63, has been established on the photograph. There is only one way to establish it on Philomena Morgan, and that is by drawing it on the photograph. But there is nothing to prove that those two lines correspond~~ent~~ to the same bony points. Actually, if one takes as a comparison the hair line, and that by the way is not a good comparison, the supra-orbital line in my opinion is below the hair line in the photograph of the corpse and it is well above the hair line in the photograph of Philomena Morgan. But once again the supra-orbital ridge there is so ill-defined~~d~~ that it is impossible to use it in any way as an accurate bony land mark, once again referring to the photograph. By the "hair line" I mean of the eye-brow. With regard to the lateral margin of the nose, Dr. Benbow in his evidence said, "That measurement is very approximate. I am not considering it dead accurate. What it comes to is this: that I am drawing it to a shadow which I think would probably be the line of the nose, but it does serve to show that the face is approximately the same width at

that point as the other." I say that again would be a very unreliable landmark. It is very difficult indeed to say what exactly is the lateral line of the nose. It is an anatomical line which is never used; it has no anatomical existence as a landmark, and here it is defined as a shadow which is of course quite indistinct. With regard to the hair line, in my opinion Dr. Benbow obtained that point on the photograph of the corpse by calculation from the photograph of Philomena Morgan - that is, that upper point on the hair line. I think there is a reference to that and since it is obtained by calculation on one photograph for inserting on the other photograph with which you are drawing a comparison, I do not think it has any validity as an anatomical point. With regard to the face line, in my opinion it is impossible to base anything on that. In the first place, one should not utilise the face line, particularly on a photograph, as an anatomical landmark because you cannot pick up that face line, particularly as it is shown in photograph "C" of Exhibit 63, the photograph of the corpse. The face line there could be settled by the whims and fancies of the observer. It is not an anatomical landmark of any value at all. Dealing with those face lines you have the difficulty of a three-dimensional object. I mentioned that there were two points to be kept in mind, firstly, that the planes of presentation were not the same and the examination was not carried out three-dimensionally, and, secondly, that the anatomical landmarks which he had employed were unreliable. They were predominantly, almost exclusively, soft tissues and I explained the manner in which those soft tissues and even bony tissues can be modified during growth and subsequent to injury and by changes consequent on embalming. The fact is that Dr. Benbow has been working <sup>in terms of</sup> ~~inconstant~~ ~~with~~ two different planes, and that deprives <sup>his</sup> ~~the~~ method of any

value whatsoever. For that reason it is futile to attempt any comparison in the manner he has contemplated. I recall that Dr. Benbow also drew lines on photographs of hands. The same matter of planes and of anatomical landmarks would apply to the photographs of the hands. The only <sup>point</sup> ~~reason~~ I want to mention specifically in connection with the hand is the so called ulnar margin. In the photograph of the hand of the corpse evaporation has led to a withering and a shrinkage and distortion of that region, whereas the same region in the photograph of Philomena Morgan shows a full healthy ulnar margin of the hand. On that basis alone it is not possible to compare them. The same observations with regard to the three-dimensional and the anatomical points would apply to the hand. Having gone in some detail into this comparison of photographs of a body with photographs of a unknown person, for the purpose of establishing identity, I say in my opinion there is no ~~basis~~ basis in that. I do not think for one moment one could seriously consider this as a method of establishing identification. However, where a comparison is possible it is a non-metrical comparison; I would say that the evidence negatives the possibility of the body of the victim being that of Philomena Morgan. I would base that opinion firstly on the age and secondly on the teeth. I believe that the tooth showing in the photograph of Philomena Morgan is the canine and that an incisor is missing - the upper left lateral. Then there is the hair and the shape of the ear. One of the photographs of Philomena Morgan gives the impression that the neck was very long. They are the photographs which Mr. Hobley handed in - four daylight prints, I think. The neck of the victim is short. I do not find anything in the evidence of the description of Linda Agostini that is inconsistent

from an anatomical point of view with the body that is lying dead here. In my opinion, where a comparison of the features of the body is possible with those shown in the photographs represented to me as being those of Mrs. Agostini and stated by witnesses in evidence, that comparison leads me to believe that the body is that of Mrs. Agostini. In arriving at that conclusion, I would draw special attention to the age, the teeth, the three pigmented areas on the left arm, the hair, the midline frontal peak, the parting on the right hand side, the colour, the ears, the hands, the abnormally large hands, and finally the build.

TO MR. BARRY: I was appointed Professor of Anatomy at the Melbourne University in 1938. In 1935 I qualified to practice as a Medical Practitioner. I graduated at the Melbourne University. I have had two years experience abroad at ~~the~~ various anatomical centres. I have had experience in England. I was on the staff of the Department of Human Anatomy at Oxford for a year and one term. My experience did not take in the point <sup>whether</sup> ~~where~~ ~~the~~ vaccination marks are the rule rather than the exception on females in England who may be taken to have been 29 in 1934. I have no idea what the legal requirements are in England as to vaccination. Although I do not know the regulations, I should say that most people are strongly recommended to be vaccinated. I could not express an opinion as to whether or not it is more usual to find people vaccinated than not vaccinated in England. I am a Batchelor of Medicine and Batchelor of Surgery at the University of Melbourne, and Fellow of the Royal Australasian College of Physicians. I became a Fellow of the R.A.C.P. in 1943 or 1942. I think it was 1942. I have never been in general practice. My experience has been confined to the University or similar teaching institutions. I was invited to make my services available in the Pyjama Girl case on Friday, the Friday

before Thursday, March 23rd. I would place it round about March 18th. It was on a Friday morning; I can remember it quite clearly. I was not then aware of any police theories in connection with the case. I had read a newspaper statement. I knew that a man named Agostini had been arrested and charged with the murder of his wife, who, it was said, was the Pyjama Girl. I had never seen the body of the Pyjama Girl before I viewed it in Melbourne. I had taken no interest whatsoever in the matter. When I was interviewed on Friday before the 23rd of March I had at that time no impression in connection with the case at all, other than ~~those~~ <sup>that</sup> I had drawn from reading the newspaper statement. From reading the newspaper reports I drew the conclusion that the police view was that the body was that of Linda Agostini. I was not supplied by the police with information designed to show that it was the body of Linda Agostini. When I was interviewed by the police I was not given information designed to show that it was the body of Linda Agostini. I would not say I was given information calculated to show that. I was provided with information. I was provided with whatever information I requested. At the first interview I was provided with no information whatsoever. I was already aware that a Sydney doctor named Benbow was advancing a theory that the body was that of Philomena Morgan. I got that from the newspapers. When I was first seen I was aware that the identity of the body as that of Linda Agostini was the subject of challenge. Professor Burkitt's report was given to me; I am not quite sure of the exact date, but it would be within the last ten days. I concluded that the body was the body of Linda Agostini following my anatomical examinations, that would be between March 26th when my last examination was conducted and March 30th when my report was finalised. I have not

concluded that the body is that of Linda Agostini. The evidence which I can find leads me to believe that the body is that of Linda Agostini. In my opinion, the body is the body of Linda Agostini. I did not know Linda Agostini in life. I feel I am in a position to form an opinion that the body is the body of Linda Agostini. The question of the colouration of the eyes first became of importance in my view right from the day I commenced my examination. I do not know whether Linda Agostini ever had brown eyes. The witnesses have stated that she had brown eyes. I was never informed, other than from the evidence given here by witnesses, that Linda Agostini in fact had brown eyes. That is the only source of my information. I was never furnished with an official description of Linda Agostini. I have no note of a description of Linda Agostini. I do not know of the existence of any description of Linda Agostini other than has been given in the course of the evidence before the Coroner. So far as I know, there is no description of Linda Agostini of the kind, for example, that you find on a passport. There is no such description that I know of giving, height - so much, / age - so and so, eyes - such and such a colour. I have never had the assistance of any such description. I have attended almost constantly through this inquest. It is correct that I am on loan to the Police Department. I became on loan to the Police Department within a day or so of being approached by the Police Department. I had not at that stage formed any opinion as to whether the body was that of Linda Agostini. I did not have any impression. I was lent to the Police Department at a stage when I had no opinion one way or the other about the matter. I assail Dr. Benbow's theories at every point. Asked if I have said that I realised that the colour of the eyes of the body was important from the



beginning of my investigations, I say that in conducting an anatomical examination every point is of importance. I did not infer that it was of importance from the point of view of this case, but from the point of view of completing an anatomical examination. I would conclude very early in my examination that the colour of the eyes was important in this case; it would be the week following the day on which the police approached me. That was not after I heard Linda Agostini described as having had brown eyes. I realise that unless some explanation can be given it is an obstacle to finding that this body is Linda Agostini's if in fact it can be proved conclusively that Linda Agostini had brown eyes in life and the body has a blue eye. It does not necessarily follow that if Linda Agostini had brown eyes and this body at all relative times has had a blue eye that the body is not that of Linda Agostini. You must first prove conclusively that that eye in the body is a blue eye. On the hypothesis that Linda Agostini had brown eyes in life and secondly that this body has a blue eye, I agree that this body cannot be the body of Linda Agostini. I realise that some of my findings are not consistent with those of Professor Burkitt. I could not express an opinion as to whether the body was in better <sup>state</sup> ~~case~~ for examination on 19th October, 1934, than it was at the time when I first undertook examination of it. I do not agree that would necessarily follow. If it is suggested that in October 1934, a month or so after the finding of the body, the body would be better material for an anatomist's examination than it would be after being immersed in formalin for ten years or so and then exposed to the air as it has been in the morgue here, I agree it would be from the point of view of the examination of some tissues, and from the point of view <sup>of others</sup> it would not. With regard to Professor Burkitt's report which reads, "The determination

SIXTEENTH DAY

RESUMED INQUEST

held at

THE CITY MORGUE - MELBOURNE

on

WEDNESDAY, 19TH APRIL, 1944.

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UPON THE BODY OF A WOMAN FOUND NEAR ALBURY ON 1/9/34.  
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19<sup>th</sup> April

SYDNEY SUNDERLAND, recalled:

TO MR. BARRY: I have not seen the eye of the body removed from the body yet. I do not know whether it has been removed. Coming to the structure of the eye, there is a narrow dark fringe lining the pupillary margin. The stroma of the iris consists, in addition to other structures, of numerous vessels running in a radial direction from the peripheral margin to the pupillary margin. I would not agree that the essential characteristic of the stroma is the vessels which run in a radial direction from the peripheral to the pupillary margin; I would say it was one of the essential structures of the stroma. The vessels which run in a radial direction from the peripheral to the pupillary margin are enclosed in an adventitia, but I would not regard it as being a very thick adventitia. That adventitia is the supporting framework of the vessels, not of the stroma, of the iris. The vessels in the stroma are enclosed in that adventitia. They are surrounded by a loose network of branched but not necessarily pigmented cells. Those branch cells fill up the inter-spaces mostly, but there are some muscle fibres in addition. But those cells do occupy the stroma. The vessels together with that meshwork through the stroma of the iris constitute a loose spongy sort of tissue not only close to the pupillary margin but extending out over the entire limits of the iris; it extends from the pupillary margin to the external margin of the iris. The name of the muscle which closes the pupil is sphincter iridis, and that sphincter iridis is embedded in the stroma. It is a flat band about one millimetre broad lying close to the back surface of the iris. The back surface of the iris is covered by a layer of pigment which we call the pars retinae iridis, sometimes also referred to as the uvea. It is the continuation of the pigmented layer of the iris

around the ~~anterior~~ ciliary folds on to the posterior layer of the iris. I know Fuch's textbook. That is a leading textbook on the structure of the eye. If it is suggested that in that textbook a passage appears that the back surface of the iris is covered by a layer of pigment known as the retinal pigment layer, I should imagine that Fuch's would say it is covered by a layer of pigmented epithelium. The pigment is contained in cells. You cannot have pigment in space. The pigment is contained in cells and those cells form the posterior layer of the iris. Embryologically the pigment is present in the retina and is developed from it. This layer of pigment extends to the pupillary margin and just around it on to its ventral surface. That pigment causes the black ring or the dark ring at the ~~pupillary~~ <sup>pupillary</sup> margin. If Fuch's contains the passage "This pigment layer (that is the layer on the back surface of the iris) has its origin in the retina, hence its name, viz. retinal pigment layer of iris", I would not be surprised; that ~~was~~ is the retinal pigment layer of cells. I agree with the statement that the color of the iris is either light (blue or grey) or dark (brown) and is caused by the iridic pigment, except that I would not confine it necessarily to blue, grey and brown. There can be a shade of green. The color is due to the iridic pigment. If it is suggested it is true to say that the color of the iris is either light or dark and is caused by the iridic pigment, I say the iridic pigment plus additional structures. One must also take into consideration the presence of the iris as a membrane itself. For instance, in an albino, when this pigment is absent, the iris still has a color. It is a reddish color and that color is dependent on the blood in the blood vessels which are located in the iris, so that obviously these blood vessels must play some role in establishing the color of the iris. If it is stated

In Fuch's book "The color of the iris is either light or dark and is caused by the iridic pigment", I agree that is a fair statement. If it is stated "There are two kinds of pigment in the iris; one lies in the branch cells of the stroma and hence is called the stroma pigment, and the other fills up the epithelial cells of the retinal pigment layer", I would agree with that but qualify it by saying that the pigment is of the same nature in both cases.

With regard to the passage "There are two kinds of pigment in the iris: one lies in the branch cells and hence is called the stroma pigment, the other fills up the epithelial cells of the retinal pigment layer and is called the retinal pigment", the only criticism I would offer is that one may infer there are two different types of pigment. The pigment in each case is melanin. That is derived from a Greek word meaning black. I would agree with the statement that upon the proportion between the amount of pigment deposited in these two, that is the stroma and the epithelial cells of the retinal pigment layer, the color of the iris depends. I agree that the retinal layer of the iris always abounds in pigment except in the case of albinos. Albinos have an absence of stroma pigment ~~as well~~ as well as an absence of retinal pigment. The amount of the stroma pigment varies greatly. If it is stated that when the stroma contains little pigment the retinal pigment shows through the thin iris and appears blue, I would say that the blue appearance is due to the fact that the pigment in the epithelium on the posterior surface imparts that opaque appearance to the iris and that you get the blue appearance when you look at the inner chamber of the eye which is black in the pupil through the opaque membrane. I do not think one can state dogmatically that the blue appearance is due exclusively to the presence of the pigment in the epithelial layer.

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It is a combination of factors. What one really has is an opaque membrane and much of that opacity is due to the pigment which is located in the posterior layer. I do not agree with the proposition that the retinal pigment shows through the thin iris and appears blue when the stroma contains little pigment; I think that if that pigment alone, which is melanin, showed through, one has an additional factor in that we have a rather blackish, brownish pigment on the posterior surface of the iris. Imagine my hand so, now in front of that we have the stroma with its vessels and anterior to that another layer of epithelium which is reflected from the posterior surface of the cornea. You are still looking at that pigmented layer through an opaque membrane and that gives you the blue appearance. You cannot actually see the pigment granules when you look at the iris from the anterior aspect because they are hidden by the general opacity of the iris itself, by the stroma with its contained blood vessels and ~~the~~ connective tissue cells, and the anterior epithelial layer which is on the front of the iris. I have not been able to find the rough notes of my observations which were referred to yesterday. I must assume they have gone altogether. I made a good search for them last night. I did not look at Dr. Mollison's book in regard to the necessity of preserving rough notes. I agree that if the stroma is deficient in pigment and pretty thick and compact, the iris appears grey. I agree that the greater <sup>the</sup> amount of brown stroma pigment that the iris contains, the more that pigment becomes visible and makes the iris appear its own brown color. With regard to the statement "If the stroma is deficient in pigment, but pretty thick and compact, the iris appears grey, and finally the greater the amount of brown stroma pigment that the iris contains the more this pigment becomes visible and makes the iris appear its own

brown color, while the retinal pigment layer which lies behind is more and more concealed by the stroma pigment and hidden from view", I would agree with that statement. I would agree with the statement that not infrequently in an iris that is but slightly pigmented as a whole, and therefore blue or blue-grey in color, one or two isolated accumulations of pigment may be found in the stroma.

I agree that under those circumstances you have a positive pigment in an eye that otherwise appears blue or blue-grey. If it is suggested that accordingly a section which happened to catch one of those accumulations of pigment would not be effective to tell you the color of the eye, I say the section would involve such a particle in only one portion of the section. In your field you would see your clear stroma and then you would come to a certain portion of the field which contained brown pigment and then you would pass across again into a clear area. One would not under those conditions state that the iris was brown during life. For the eye to be brown during life, the pigment would have to be evenly dispersed over the stroma, though it is important to remember that you can get different shades of brown in the same eye. When I said evenly dispersed, I meant not in the same density; it would have to exist right through the stroma, but naturally in some areas the stroma would be loaded with more pigment than in others., A section taken from any one part of the stroma might therefore give a misleading result. On one section alone it would not be acceptable scientifically. I do not agree that the color of <sup>eyes</sup> ~~xxxxix~~ is necessarily always proportionately to the rest of the pigmentation of the body. If one works it out in terms of races, there are many more people of the dark races than of the fair, and they, of course, have dark eyes, so in that proportion one would say yes. So far as the eye in this body is concerned, I agree that in order for

it to be a brown eye there must be the presence of pigment within the stroma. It need not necessarily be evenly distributed; it could be a little denser in one portion than in another. It would need to be distributed over the whole of the stroma, within reason. One sees eyes which are almost three-quarters brown and they contain one flare or segment which is blue in color. I agree that is not common, and that it is the kind of thing that people notice. If Linda Agostini had that in life I should imagine that any ordinary observer would notice it. If a person has a blue eye and a brown eye, it is usually an obvious feature if there is any marked alteration in the color. Because I did not wish in any way to disturb the eyelids on the left hand side I did not make a detailed examination to see whether the left eye was still in the body. However, I would not be surprised if at the post-mortem examination an eye were found well back in the orbit on that side. I do not know what fluid was used in the embalming. I understand it was injected directly into the tissues. I do not know the exact date when that injection was carried out. If it is suggested that I would not expect the cornea of the eye to become hazy within four days, I say I have seen the cornea become hazy within 24 hours. If it is suggested that is in unusual cases where there has been illness, I say I can only speak of the material which I have examined which comes to my particular department. A full medical report does not come with them. If a person, particularly an aged person, dies of a long illness, the degenerative processes may well have set in before life is extinct. If it is suggested that that also applies to any person who has suffered an illness over a period of time, I say it depends on the length of time. I am unable to answer the question of whether I would expect to find, in the case of a person who is killed by sudden violence