

# CONFIDENTIAL

Minutes of the Newark Initial Inquiry Committee  
Meeting on April 27, 2001, 8:30 am - 4:00 pm

**PRESENT:** Dr. Neil Cherniack (in part), Dr. Daniel Fine (in part), (Chair), Dr. Anthony Forrester, Ms. Teresa Marsico (by phone) and Dr. Elizabeth Raveché, and Office of Academic Affairs confidential staff: Dr. Karen Putterman, Vice President for Academic Affairs, Dr. Sheila Eder, Director of Institutional Research.

Dr. Raveché presided.

The Committee first interviewed Dr. Marek Lenarczyk who was introduced to the Committee. He explained how he came to work in Dr. Roger Howell's laboratory as a postdoctoral fellow.

Dr. Lenarczyk described the general nature of the experiments performed in the lab on the survival rates of cells exposed to radionucleides and of bystander cells. (A diagram of the experimental protocol, provided later by Dr. Howell, is attachment 1.) Dr. Lenarczyk stated that the experiments measuring cell survival rates cannot be validly completed if carried out with contaminated cell material. In the case of the experiment started by Dr. Bishayee on Monday, March 26, 2001, Dr. Lenarczyk believes that Dr. Bishayee had used contaminated cells.

Dr. Lenarczyk went on to state that by Friday, March 30, 2001, he was sure that the experiment was contaminated. Since he had no reason to check on Dr. Bishayee's cells before that, he couldn't say for certain that the experiment was begun with contaminated material. But on Friday, March 30, Dr. Lenarczyk observed that Dr. Bishayee's cells were still in helena tubes in the 10.5 degree incubator when, according to the protocol, they should have been taken out by that time.

The Committee questioned Dr. Lenarczyk as to how he knew that the experiment had been started on Monday, rather than Tuesday or Wednesday. Dr. Lenarczyk replied that the protocol for the experiment was more conveniently carried out by beginning on a Monday.

The Committee then asked Dr. Lenarczyk at what point in time he began to observe Dr. Bishayee's conduct of this experiment. Dr. Lenarczyk was not sure of the answer to this question.

Dr. Fine asked why Dr. Lenarczyk had put his own cells in the 37 degree incubator if the incubator was suspected as a source of contamination. Dr. Lenarczyk responded that there were only three places to propagate, and that he himself only put some of his cells in the 37 degree incubator shared with Dr. Bishayee.

Dr. Lenarczyk said that Dr. Bishayee had asked Dr. Lenarczyk for cells on Thursday, March 29, 2001, and that this aroused his suspicions because of the long-standing problem of contamination in the lab. He wondered why Dr. Bishayee was asking for cells on Thursday, when the cells for the experiment should be removed from the tubes on Friday. When the Committee asked whether Dr. Bishayee might not have been following a different protocol, Dr. Lenarczyk answered that he thought the fact that the cells were in helena tubes indicated that the experiment was looking for bystander effect and was using the same protocol.

Dr. Lenarczyk went on to say that when he went to the 10.5 degree incubator on Friday, March 30, 2001, to remove his own tubes, he observed Dr. Bishayee's tubes still there with one tube missing. He indicated that he counted the tubes to be sure he had the right number of tubes that were his own. He had seen earlier in the week that Dr. Bishayee had had seven tubes, the expected number, in the incubator.

Dr. Lenarczyk said he had seen Dr. Bishayee sitting in the hood on Friday morning at maybe 10 or 11. While he didn't check what Dr. Bishayee was doing, he assumed that he was processing cells. "My end point was to seed dishes and put them back into an incubator, which I did around maybe 4 or 5, and then I see his dishes in there. He had already plated cells which should have come from the tubes."

Dr. Lenarczyk explained that he double-checked that Dr. Bishayee's six helena tubes were still in the 10.5 degree incubator; he "couldn't understand" why Dr. Bishayee would take one tube when all the tubes should have been taken out for the experiment. Dr. Lenarczyk began to think that "something was going wrong" and took samples of the tubes belonging to Dr. Bishayee. Dr. Lenarczyk stated that he sampled the tubes on Friday because he believed Dr. Bishayee had already concluded the experiment when he saw him working in the hood on Friday morning.

The Committee asked why Dr. Lenarczyk didn't ask Dr. Bishayee about what was going on. Dr. Lenarczyk replied that it was "his choice" not to speak to Dr. Bishayee, but to talk to Dr. Hill since he was living in her house.

At this point in the interview the Committee closely questioned Dr. Lenarczyk about the point during the week when he first spoke with Dr. Hill. Dr. Lenarczyk said that he had previously spoken to Dr. Hill about problems of contamination in the lab, and that Dr. Hill said, "we have to observe very carefully".

The Committee asked whether Dr. Hill had suggested taking samples from Dr. Bishayee's six tubes remaining in the incubator, and Dr. Lenarczyk answered, "probably, yes."

Dr. Lenarczyk then described how he removed samples from each of the tubes by popping the top of the tube, putting media into a clean 6-well petri dish, splitting the samples to measure radioactivity, and doing both radioactive count and contamination testing.

When prompted for more details, Dr. Lenarczyk said he sampled only 5 tubes, putting just media into the 6<sup>th</sup> well. He put a drop onto each dish, put the dishes into an incubator in a separate room, and after one day, he observed the 6 wells by holding them up to the light. One of the wells was still clear and the others were cloudy. He also put the dishes under a microscope and all 5 of the wells were contaminated.

The Committee asked Dr. Lenarczyk what he did with the wells but Dr. Lenarczyk did not reply to this question. He went on to say that he put another drop from the tubes into a small vial designed to measure radioactivity. Dr. Raveché pressed Dr. Lenarczyk on whether he had tested the supernatant or the cells for radioactivity. Dr. Lenarczyk seemed uncertain about (1) whether he had tested supernatant or cells, (2) the exact date when he had run the test for radioactivity, and (3) why he had felt the necessity to test for radioactive counts at all.

Dr. Raveché asked whether both he and Dr. Hill had gone through the trash looking for the 7<sup>th</sup> tube. Dr. Lenarczyk replied that they both looked through the trash on Saturday, March 31, 2001, and found a tube #7 in a non-radioactive trash can. The tube should have been radioactive, although Dr. Lenarczyk admits he did not test it for radioactivity.

Dr. Lenarczyk described checking his own plated cells on Saturday, March 31, 2001, and determining that they were OK. He also saw Dr. Bishayee's two sets of dishes (dyed/radioactive and undyed/bystander) marked A and B, and one of the sets was fully contaminated. Dr. Raveché asked what happened to the dishes, and Dr. Lenarczyk replied

that they had disappeared by Tuesday or Wednesday, April 2 or 3, 2001. He had looked for them in the trash but couldn't locate them.

The Committee asked Dr. Lenarczyk when it was that he started taking pictures. Dr. Lenarczyk responded that he didn't remember. After being prompted, Dr. Lenarczyk admitted taking pictures of helena tubes and stated that the date should be on the picture.

Dr. Fine reminded Dr. Lenarczyk that the first time he used the camera there was no date. The second time he used it there was a date. Dr. Lenarczyk said that the camera was new and he had to learn how to set it to record dates.

Dr. Raveché then asked Dr. Lenarczyk to look at the photographs P3310012 "Exhibit A", P4010005 "Exhibit B", P4010006 Exhibit C" (attachments 9, 10 and 11) and explain why the order in which the tubes appear in the rack differs from one photograph to the other. Dr. Lenarczyk stated that he had to take the tubes out of the rack because it was difficult to sample from them without doing so.

The Committee was concerned with inconsistencies in Dr. Lenarczyk's remarks. Dr. Raveché pressed Dr. Lenarczyk to explain the difference in tube order between photos P4010005 "Exhibit B" (attachment 10) and P4010006 "Exhibit C" (attachment 11) both dated April 1, 2001. Dr. Lenarczyk answered that he thought the pictures were in reverse order. Dr. Raveché reminded Dr. Lenarczyk that he had previously stated that he took the samples from the 6 tubes on Friday, March 30, 2001. Dr. Lenarczyk answered that he didn't want to disturb the cells so he took samples only once, "maybe Sunday". However when asked when he took the photograph labeled P1010009 "Exhibit D" (attachment 12), Dr. Lenarczyk answered that it "might have been Friday" because there were only 6 tubes in this photograph.

Dr. Raveché then asked about the photograph labeled 040701-2 "Exhibit K" (attachment 19) which is dated April 7, 2001. She pointed out that the picture was taken a full 9 days after the sample was cultured, and that **the plate should be solidified by that time if contaminated.** However it was not solidified in the picture. She asked Dr. Lenarczyk if he was certain that the picture was taken on April 7, 2001, and he replied "yes".

The Committee was also concerned that actions by Dr. Hill and Dr. Lenarczyk may have interfered with Dr. Bishayee's experiment. If cultures from the sampled 6 tubes were allowed

to grow for a day, then the samples must have been drawn on Thursday, March 29. If so, this seems like it would have interfered with Dr. Bishayee's experiment. Dr. Lenarczyk replied that he might have taken samples on Thursday.

The Committee asked whether it's possible to get results that did not appear to be unusual using contaminated cells in the experiment, and Dr. Lenarczyk said that "you couldn't get any results". Dr. Raveché asked whether flow cytometry might remove contaminants in the process of sorting. She also asked if Dr. Lenarczyk had experience with contaminated cells; Dr. Lenarczyk said he had no experience of this.

Dr. Raveché wondered whether there could have been scientific misconduct if Dr. Bishayee used contaminated cells but reported in his lab book that half of the petri dishes were contaminated and half were not. The petri dishes are in the Committee's possession and demonstrate the pattern of contamination reported. She asked Dr. Lenarczyk if he was aware of Dr. Bishayee's results, and he responded that he never saw the results. Dr. Fine suggested that the dishes plated on Friday, March 30, 2001, could have been from a different experiment.

Dr. Lenarczyk was asked whether Dr. Hill came to him with suspicions or whether Dr. Lenarczyk went to Dr. Hill. He responded that he went to Dr. Hill first. Dr. Lenarczyk went on to say that he never heard from Dr. Bishayee that there was a problem with contamination. He, Dr. Lenarczyk, only had contamination problems when working in the radioactivity-restricted area of the lab; when he worked in other areas, there was no contamination.

Dr. Fine asked who makes up the media, and Dr. Lenarczyk replied that he makes his own.

Dr. Cherniack asked if he had ever told Dr. Howell about his problems, and he responded that "of course" he had told Dr. Howell. Dr. Cherniack followed up by asking why he had not told Dr. Howell about his suspicions regarding the March 26, 2001 experiment. Dr. Lenarczyk replied that he had only talked to Dr. Hill, and admitted that that may have been a mistake, but that Dr. Hill told him it was better for her to tell Dr. Howell. Dr. Lenarczyk explained that, as the junior person in the lab, he felt at a disadvantage in bringing forward to Dr. Howell a complaint of this nature.

The Committee asked Dr. Lenarczyk whether he had anything further to say, and he replied that he did not. Dr. Raveché asked if Dr. Lenarczyk felt unhampered in making any comments to the Committee or whether he feared reprisals. Dr. Lenarczyk answered that he had not been coerced into doing anything. Dr. Lenarczyk was then informed that he could contact Dr. Raveché if he had any further comments.

The interview with Dr. Lenarczyk was concluded, and Dr. Bishayee was called in to the meeting. Dr. Bishayee presented a written statement to the Committee (attachment 20).

Dr. Raveché began by asking Dr. Bishayee to explain how he got the data in the experiment of March 26, 2001, described on page 27 of his lab book (attachment 21).

Dr. Bishayee answered that the basic data results depend on the radiation dose, and that he lost half the data from contamination. The experiment wasn't perfect; one part was bad, one part was good.

Dr. Raveché asked Dr. Bishayee to describe the entire course of the experiment.

Dr. Bishayee said that he harvested cells from two full T175 flasks and replated the cells. The Committee asked whether the cells were in good condition, and Dr. Bishayee replied that they were. He admitted that there was a previous experience with contamination, and that he was trying to figure out the source of the contamination. He had lost a primary cell stock some time ago.

Dr. Bishayee continued that on Monday, March 26, 2001, he put 2½ million cells into each tube for a total of 14 tubes and rolled the tubes. He started at 4 p.m. and after 3 hours added radionuclide to the first set, #s 3 through 7, adding media to level each tube. The process finished at 7:30 p.m.

Dr. Bishayee left his tubes in the roller until the next day, Tuesday, March 27. He then removed supernatant to measure radioactivity, washed the tubes, treated the first set with dye, and resuspended the material. He did the same thing with the second set but without adding dye. Dr. Bishayee transferred cells from the second set into the first set so that there were about 5 million in each tube, half of which were dyed. Tubes 1 and 2 were not radioactive, tubes 3 through 7 were half radioactive and dyed. The material was then transferred into helena tubes and put into the 10.5 degree incubator for 3 days.

The Committee asked Dr. Bishayee how the tubes were lined up in the rack. He replied that there were 5 in the first row and 2 in the back. There was no special reason for this arrangement. The Committee asked if he put his name on the tray, and he replied that he didn't but that he knew his own cells from the markings on the tubes which were either black or green.

The Committee asked if there was anything else in the 10.5 degree incubator, and Dr. Bishayee answered that there were some other racks, empty racks. When asked which shelf in the incubator he had used, Dr. Bishayee replied that he placed the rack on the middle shelf, for easy access. Dr. Bishayee explained that there are only 4 people in the lab and most of the time only he and Dr. Lenarczyk use the 10.5 degree incubator, so there was no need for him to have his own space.

The Committee then asked him at what time did he remove the cells from the 10.5 degree incubator on Friday, March 30, 2001, and Dr. Bishayee answered that it was 12:45 p.m. When asked if his rack had been moved, or if he noticed anything unusual, Dr. Bishayee said no.

The Committee asked Dr. Bishayee if he had been in the lab before 12:45 p.m. on Friday, March 30, 2001. Dr. Bishayee replied that he had no recollection of what he was doing before that; he might have been preparing medium. When he did process the cells later in the day, they looked fine, just "a little pink".

Dr. Fine asked at what stage of the experiment would one be concerned about contamination occurring. Dr. Bishayee answered that the experiment has several different stages, so it's hard to tell the time of contamination. It's easier to tell when the experiment is started because you can get contamination during washing. The greatest fear is during sorting. Other people had told him that you can get contamination 6 out of 10 times you sort.

Dr. Bishayee continued that he removed the cells and put them into other tubes. He then threw away the helena tubes.

Dr. Raveché asked Dr. Bishayee whether he had any other tubes in the incubator. He answered that he did, for the purpose of testing a new cell line, that is observing its growth

and cluster size characteristics prior to beginning experimenting with them. When asked for details of this experiment, Dr. Bishayee indicated that he put these tubes in the incubator **some time between Monday and Friday, March 26-30, 2001**, but the tubes weren't labeled and **he couldn't precisely remember how many tubes there were**. Dr. Bishayee also confirmed that there was **no notation in his lab book about the test of the new cell line**.

The Committee asked how Dr. Bishayee distinguished the experimental set of helena tubes from the other testing the new cell line, and he answered that one rack had the symbol for radioactivity on the side and the other did not. When again questioned about the test of the new cell line not being in his notes, Dr. Bishayee said that **he was just preparing them for freezing but got contamination**.

Dr. Raveché asked when that happened. Dr. Bishayee consulted the notes he had brought with him. He first replied **after April 5, 2001**; then he said **the Monday after**, and finally **April 9, 2001**. Dr. Raveché asked, when did he have extra cells in the incubator. Dr. Bishayee responded **between April 3 and April 6**. When the Committee indicated that they had thought the extra cells were in the incubator during the experiment of the week of March 26, Dr. Bishayee corrected his statement to **between March 27 and March 30**.

Dr. Raveché asked why he had not frozen the new cell line, and Dr. Bishayee replied that he was **busy getting ready to go to the scientific meeting in Puerto Rico**. The Committee asked whether Dr. Bishayee checked the cluster size of the cells, the purpose of his incubation of the new cell line. Dr. Bishayee said that **he just looked at them and then threw them away**.

The Committee asked **how many helena tubes of the new cell line Dr. Bishayee had in the 10.5 degree incubator on Friday, March 30, 2001**. He stated that **he had 7 tubes**. He was **sure it was 7 because he had 3 million cells in the first 2 tubes, 4 million cells in the second 2 and 5 million cells in the last 3 tubes**. Dr. Raveché pointed out that both sets of tubes from the experiments were numbered 1 through 7 and that the only difference was the radioactive symbol on the rack.

The Committee asked **where Dr. Bishayee threw out the tubes with the new cell line**. He replied, **"in the trash"**. Dr. Fine asked **if there was any contamination, and Dr. Bishayee replied that he didn't check them for contamination**. Dr. Raveché asked why he had put the new cell line in the incubator. Dr. Bishayee said he was going to count the cell clusters but



was too busy preparing for the next experiment. Because they have contamination some of the time leading to inconsistent results, he wanted to run another experiment to check.

Dr. Bishayee had two sets of 7 tubes each in the 10.5 degree incubator on Thursday, March 29, 2001. The Committee asked at what time on Friday, March 30, 2001 he had zero tubes left in the incubator. Dr. Bishayee replied that he was not sure, possibly mid-day.

Dr. Raveché asked if he was sure he had 7 tubes with the new cell line. Dr. Bishayee answered, "for the other study...I probably used 5."

The Committee asked if Dr. Bishayee had previously tested the new cell line, and he answered that he had tested it about a month earlier and that he had made a record of that experiment in his lab binder #9, which binder is available to the Committee.

Dr. Bishayee was asked why he had thrown out the tubes with the new cell line without even recording the results. He answered that he wanted to do other things, and that it wasn't a crucial experiment.

When asked what he had done with the tubes from the original March 26, 2001, experiment, Dr. Bishayee said that he threw them out. In the discussion that followed, Dr. Bishayee was confused about which tubes were placed in the regular waste container and which ones were placed in the radioactive waste container.

In a discussion with the Committee about what time he had gone to the cell sorter, Dr. Bishayee replied 2:00 or 2:30 p.m. on Friday, March 30, 2001. Dr. Bishayee explained that the sorting takes 4 hours and that he stayed around in case he needed to clean the machine or get clean tubes.

Dr. Raveché asked Dr. Bishayee whether he had looked at the new cell line before or after going to the cell sorter, and he replied that it was probably before that. She asked Dr. Bishayee what he did after the sorting. Dr. Bishayee answered that he processed the cells by plating them onto petri dishes and putting the dishes in the 37 degree incubator. The dishes went into the incubator between 7:00 and 8:00 p.m. on Friday, March 30, 2001.

The Committee asked if anything else was in the 37 degree incubator, and Dr. Bishayee stated that there were "other things" on the top. He believed that Dr. Lenarczyk was running

an experiment, but he didn't recall who left the lab first. When asked, Dr. Bishayee indicated that he did not come to the lab on Saturday, March 31 or Sunday, April 1, 2001.

Dr. Bishayee stated that when he came to the lab on Monday, April 2, 2001, he started another experiment with 7 tubes. When asked if there was anything else in the incubator, Dr. Bishayee answered that he wasn't sure.

The Committee asked when did Dr. Bishayee look at his plates from the March 26 experiment. He answered that it takes 7 days, until April 6. Dr. Bishayee said that he checked the cells under the supervision of Dr. Howell because Dr. Howell wanted to make sure that everything was OK.

When asked what he found from the plates, Dr. Bishayee explained that when he sorted the cells there were 7 tubes. These 7 tubes get separated into 14 tubes. From these tubes, he made 21 plates from the dyed cells and 21 plates from the undyed. **All of the dyed plates were contaminated while the undyed plates were not contaminated.** The Committee asked Dr. Bishayee how one set could be contaminated and not the other set. Dr. Bishayee said he was "not sure". There was then a discussion of the dye used in the experiment, and some explanation of the theory of the experiment.

In response to Dr. Raveché's question, Dr. Bishayee stated that he didn't look at his tubes from Tuesday, March 27, 2001, to Friday, March 30, 2001. **Nor did he look at his tubes with the new cell line.**

Dr. Raveché showed Dr. Bishayee a set of photographs taken by Dr. Hill and Lenarczyk. Pointing to the pictures labeled P3310012 "Exhibit A" (attachment 9), P401005 "Exhibit B" (attachment 10), P401006 "Exhibit C" (attachment 11), P1010009 "Exhibit D" (attachment 12), 040301-1 "Exhibit E" (attachment 13), 040301-2 "Exhibit F" (attachment 14), and 040501-2 "Exhibit G" (attachment 15), she asked Dr. Bishayee if he recognized the rack of tubes. Dr. Bishayee indicated that the rack in the picture was his, and acknowledged that it contained 6 tubes. He could not say when the picture could have been taken, nor could he explain the apparent change in location of the rack from one incubator shelf to another between photographs, nor the loss of one tube.

The Committee asked Dr. Bishayee **what happened to the 7<sup>th</sup> tube, and he answered "no idea"**. The Committee asked Dr. Bishayee if he ever had occasion to take one tube out of

the rack and leave the others and he answered "no". Dr. Bishayee said that there should have been 7 tubes according to the protocol.

The issue was raised of when, in the course of the experiment, it was possible to tell whether cells were contaminated. Dr. Raveché stated that contamination would not be visible in the helena tubes. Dr. Raveché asked Dr. Bishayee if he would continue an experiment with contaminated cells. He replied that he would not.

Dr. Fine asked if he would ever ask a colleague for cells. Dr. Bishayee answered that he had asked Dr. Lenarczyk for cells.

The Committee then remarked that Dr. Lenarczyk had said he had given Dr. Bishayee cells on Thursday March 29, 2001, and asked what those cells were for. Dr. Raveché reminded Dr. Bishayee that since he had said previously that he had two refed T175 flasks, it was unclear why Dr. Bishayee would need cells from Dr. Lenarczyk. Dr. Bishayee responded that although he got the cells on March 29, he was not sure why. Dr. Bishayee said he didn't know.

The Committee asked if Dr. Bishayee could have taken the cells he received from Dr. Lenarczyk on Thursday, March 29, and used them in the sorting experiment on Friday, March 30. Dr. Bishayee answered, no; why should he use different cells?

Dr. Raveché then stated, "You cannot explain why there are 6 tubes in the incubator and your results reflect the experiment as you described it. Do you feel pressure to produce in Dr. Howell's lab?" Dr. Bishayee answered, "No. He gives me freedom. I have problems when the experiment doesn't go, but he's OK about that".

Dr. Raveché pointed out that in the previous experiment of March 19, 2001, the colony count was not possible because of contamination. She then asked if there was any indication of T175 contamination in that experiment? Dr. Bishayee answered no. Dr. Howell was telling him to think very carefully as to what happened, what he did wrong. But he wasn't upset.

When asked if he had a final statement to make, Dr. Bishayee indicated that he felt that he was the victim of a conspiracy, and he went on to state that he has had problems with Dr. Hill over the last 2 years. Dr. Bishayee stated his belief that the origin of the problems with Dr. Hill is that Dr. Howell did not want to incorporate Dr. Hill's work into the grant. Dr.

Bishayee added that he had fought with Dr. Lenarczyk who he believes has a conflict of interest due to Dr. Lenarczyk's living in Dr. Hill's house.

Dr. Bishayee was excused, and Dr. Roger Howell, the Principal Investigator on the grant in question, was called to meet with the Committee.

Dr. Howell began by stating that there were certain details of the experiment that neither Drs. Hill nor Lenarczyk would have known. According to Dr. Howell, Drs. Hill and Lenarczyk believe that contamination existed with the two populations of cells at the point of plating. However, **this would be hard to tell until the 7 days of growth were complete.** In fact, while the plated petri dishes of dyed cells were found to be contaminated after 7 days and couldn't be counted, the undyed plated cells grew and were able to be counted in Dr. Howell's presence.

The Committee asked where the cells plated in the petri dishes came from, could something improper have been done to get the results. Dr. Howell responded that it's possible, but if someone were going to fudge, one wouldn't fudge the wrong population of cells. He went on to explain that each experiment focuses on either the radioactive dyed cells or the bystander undyed cells. The amount of radioactivity used varies according to the focus of the experiment. The experiment in question focused on the radioactive cells which was different from previous experiments and of which Drs. Hill and Lenarczyk were unaware. **It would make no sense for Dr. Bishayee to substitute cells for the non-radioactive cells because they were not the focus of the experiment.**

The Committee asked Dr. Howell to comment on the same set of photographs reviewed by Dr. Bishayee (attachments 9, 10, 11, 12, 13, 14 and 15), and to respond to the observations made by Drs. Hill and Lenarczyk about Dr. Bishayee's experiment. Dr. Howell had no explanation for the photographs.

Dr. Raveché reviewed for Dr. Howell the evidence presented by Dr. Hill about Dr. Bishayee's experiment of March 26, 2001. She told Dr. Howell that Dr. Hill had said that Dr. Bishayee's experiment was contaminated and that Dr. Bishayee knew that already on Friday, March 30, 2001. **Dr. Howell responded that Dr. Bishayee would have no way of knowing that just from observing the helena tubes; the only way would have been if he had plated the cells at the beginning of the experiment.**

Dr. Howell was asked for his comments about the sampling of the tubes by Dr. Lenarczyk during Dr. Bishayee's experiment. Dr. Howell responded that he didn't understand why Drs. Hill and Lenarczyk didn't confront Dr. Bishayee directly.

In response to the comment from the Committee that Drs. Hill and Lenarczyk said that Dr. Bishayee took tube #7 out of the incubator to complete the experiment and then threw out the tube, Dr. Howell said that if the cells were contaminated, he didn't know how well they would take up radioactivity. But contaminated cells would not grow colonies. He continued that it's much more difficult to draw material for the experiment from one tube, rather than taking some material from each tube.

Dr. Howell was asked why Dr. Bishayee would have left the tubes in the incubator. Dr. Howell responded that he had no explanation.

In an attempt to account for there being only 6 tubes in the 10.5 degree incubator, Dr. Howell stated that they could have been the new cell line tubes. The Committee reminded Dr. Howell that the tubes in the rack shown in the photographs had a radioactive label and that Dr. Bishayee had been very adamant that that's the way he could tell the racks apart. It was pointed out that the tubes were full. Dr. Howell responded that the tubes would have had to be taken out of the trash and filled with medium.

Dr. Forrester then asked Dr. Howell to comment on interpersonal relationships in the lab. Dr. Howell stated that Dr. Bishayee has a good record of producing work. Dr. Hill has not produced original research in years, and Dr. Lenarczyk has been non-productive in his 9 months as a postdoc.

Dr. Raveché asked Dr. Howell for his reaction to Dr. Lenarczyk's lack of productivity. Dr. Howell noted that the experimental protocol is very difficult. There are a number of steps that are prone to contamination. Dr. Bishayee had "one complete, two failed and one half-contaminated" experiment. There is pressure to publish. Dr. Lenarczyk has produced no reasonable data and his position is guaranteed for only one year.

The Committee asked Dr. Howell if he had any explanation for the pictures. He replied that he couldn't come up with one.

Dr. Raveché asked if Dr. Howell could explain the surprising fact that only half the experimental tubes were contaminated. Dr. Howell stated that it could have something to do with the dye. He knew that the dye was sterile but the phosphate buffer used with the dye could have been contaminated. After 30 minutes in the dye, the cells are washed, mixed with the unlabeled cells and then chilled. The bacteria would remain dormant and not infect the unlabeled cells.

After further discussion of the color and placement of objects in the photographs, Dr. Raveché asked Dr. Howell if he could tell from the colony counts whether cells had been removed (as when Dr. Lenarczyk sampled the tubes for radioactivity). Dr. Howell believed that if cells had been removed, he would be able to see that in the counts. The results on page 32 of the Bishayee lab book (attachment 21) reasonable (as though no cells had been removed), although the count from tube #7 was the lowest.

The interview with Dr. Howell was then concluded.

The Committee briefly discussed the three interviews. There was no explanation apparent to the Committee to account for the photographs if they were taken as and when stated by Dr. Hill and if Dr. Bishayee's testimony about his conduct of the experiment was truthful. No other evidence was available to either prove or disprove Dr. Bishayee's statements or confirm the validity of the photographs.

The Committee decided to hold another meeting to decide whether or not to recommend an investigation.

The meeting was adjourned.