cause a flow of bile; but bile would be eliminated by repeated efforts at vomiting. The disgorgement of the gall bladder, which was partially empty and shriveled, indicated an excessive flow of bile—the peculiar discoloration of the duodenum and jejunum—the very green appearance of the peritoneum immediately around the liver, and the appearance of the surface of the liver itself, all indicated an excessive flow of bile into the system. The excessive flow of bile, together with the acrid secretions, was what gave those peculiar colorations to the stomach and bowels. I mean the left fallopian tube was ten times too large by nature, from the mother's womb. I could insert my thumb in it—the body of which is usually the size of a quill. I don't think the enlargement could have been caused by disease. The fallopian tube has its peculiar anatomical structure, and which, under enlargement by disease, would be changed in its character. I opened this fallopian tube from end to end, and spread it out, and finding the mucious membrane natural, I could not believe it was congenital, and not from disease. It would be proper to say that the stomach sympathizes with the organs. Vomiting will be produced by sympathy with deranged organs. I have no means of determining absolutely whether the flaccidity of the heart was post mortem or ante mortem. It could not have been as flaccid as it was then before death, but there may have been such a tendency.—The heart, as soft as this was, could not possibly have performed its functions, and death would necessarily have ensued from it at once.

Flaccidity of the heart, before death, would have had something to do with palpitation of the heart—it would cause irregular action of the heart. Palpitation is sometimes an irregular action of the heart. I have never known a death from palpitation of the heart. Organic diseases of the heart is often accompanied by palpitation of the heart. Palpitation may and may not be a symptom of organic disease in the heart. Organic disease of the heart frequently results in sudden death. The external appearance of the stomach corresponded with the external appearance of the bowels. There were no appearances of arsenic1 poisoning that would justify any one to say unconditionally that arsenic had been taken. The appearance of the stomach and bowels in death from *gastro enteritis* is always the same, whatever may have been the cause of the disease. But there are other indications, such as I have mentioned, such as the gangrenous appearance, and yet no gangrene; the dryness of the bowels and peritoneum, and the inflammation being confined exclusively to the coats of the bowels. I made an autopsy of the body of a lady who had taken arsenic. I do not know of any author who draws the distinction between *gastro enteritis* caused by arsenical poison, or any other morbid force, as would be characteristic. The natural effect of long continued vomiting and purging would be to absorb the fluids from the body, without regard to the cause of the vomiting, provided there is a copious discharge by the vomiting and purging. The enlargement of the fallopian tube could not have been caused by interrupted menstruation in this case. If it is true that the menstrual fluid is secreted by the fallopian tube, and it should accidentally become closed at both ends, it would certainly dilate it. The symptoms of the distention of the fallopian tube during life would be the result of a disturbed physical and physiological action. First there would be pain, in the region of the fallopian tube, possibly other places, in the back—in the back of the head, possibly between the shoulders, or on top of the head, or through the whole head; sometimes pain in the limbs, most frequently simply on one side, pain and soreness through the abdomen; this all may be, or may not be; sometimes just under the ribs. The physiological symptoms would be such as a general impairment of health, possibly impaired digestion, maybe some disturbance of the heart in the form of palpitation, disturbance of respiration, laborious breathing, a general feeling of lassitude and want of energy, irritability of the nervous system in the form of fretfulness, or depression of spirits; certain forms of hysteria some times, constipation of the bowells and that general condition of system which indicates disturbed function. These might all be, or might not be, in connection with distended fallopian tube. You might not have any form of them. It might produce vomiting—not very likely to produce purging, more likely to produce constipation. If the end of fallopian tube next the womb was closed, and the other end open, after the menstrual fluid escaped from tube, into the peritoneum, it would not produce sore throat; it might produce inflammation of stomach indirectly. It might produce that kind of inflammation which attends peritoneal derangement. There is not an organ in the body which may not be affected by the escape of this fluid. It might affect only some of the organs. The escape of this fluid could not possibly have affected only the organs I found affected in this case, because if it escapes at all, and produces any effect, it will be in the peritoneum; because if there is any one thing established better than any thing else, it is this that a foreign element coming into the folds of the peritoneum will not remain passive. If this fluid were to escape into the peritoneum it would produce peritoneal inflammation. Peritoneal inflamation has such a marked character and features that its previous existence could not possibly escape the observation of a physician in any post mortem examination. Peritoneal inflamation would produce symptoms in death peculiar to themselves. If you have inflammation of the peritoneal memb rane, the walls of that membrane would adhere. The patient suffers excruciating pain in the region of the disease. The abdomen becomes enormously distended, always very sensitive to the touch, severe chillness followed by corespondingly high fever. This continues a longer or shorter time as the case may be. Gangrene or abscess occurs in the part diseased, and the patient dies of what is called pyemia. At this stage, instead of having a strong and full pulse, we get a quick and threadlike pulse—symptoms of nervousness, the temperature of the body very high or low—skin bathed with perspiration. I have made seven or eight post mortem examinations since I have been in practice. The enlargement of the fallopian tube would interfere with conception but not with menstruation.

MONDAY'S PROCEEDINGS.

Court convened Monday morning at 9 o'clock.

DR. KIEFFER, *re-called*—The absence of gases of decomposition was an additional reason, in addition to the absence of gangrene, for my belief that there was some preservative agency. In order to determine whether the fallopian tube had been distented, we must determine first its position, its relations, and its anatomical structure. The broad ligament is composed of several folds of the peritoneum, extending on either side from the body of the womb, to the smaller pelvis. This fallopian tube is four inches or four and a half in length, lies in the upper margin of the broad ligament, extends outward about two inches or two and a half, then turns backward, and hangs over the ovary with its open mouth, making an angle on itself. At the open end of the fallopian tube, there is a fibbrated structure, and the longest of those fingers attached to the ovary. If there had been any considerable distention of the fallopian tube, it must have changed its relations to the other parts, as well as its own structure, which we could not have failed to have discovered in the post-mortem examination. The fallopian tube is lined with a mucuous membrance, and the arrangement of this membrane in that tube is peculiar, being of a valvular or laminated structure; this valvular arrangement extending longitudinally instead of transversely. The fallopian tube, having been cut open from end to end, being unusually large, presented this anatomical structure perfectly; besides if there had been any considerable distention, at all recently, there must have been some change in the walls of the tube itself, either a thickening or a thinning, or discoloration, as the case might be. It had therefore never been distended; the folds lap over each other, somewhat like the shingles on the roof, or the plaits of a dress, and any distention would have destroyed their anatomical arrangement. It was the most beautiful exhibition of the structure of that organ I ever saw.

Cross Examined.—If there had been a rupture, and there had been any discharge, it would have been manifest in irregular action of the heart. Palpitation is sometimes an irregular action of the heart. I have never known a death from palpitation of the heart. Organic diseases of the heart is often accompanied by palpitation of the heart. Palpitation may and may not be a symptom of organic disease in the heart. Organic disease of the heart frequently results in sudden death. The external appearance of the stomach corresponded with the external appearance of the bowels. There were no appearances of arsenic1 poisoning that would justify any one to say unconditionally that arsenic had been taken. The appearance of the stomach and bowels in death from *gastro enteritis* is always the same, whatever may have been the cause of the disease. But there are other indications, such as I have mentioned, such as the gangrenous appearance, and yet no gangrene; the dryness of the bowels and peritoneum, and the inflammation being confined exclusively to the coats of the bowels. I made an autopsy of the body of a lady who had taken arsenic. I do not know of any author who draws the distinction between *gastro enteritis* caused by arsenical poison, or any other morbid force, as would be characteristic. The natural effect of long continued vomiting and purging would be to absorb the fluids from the body, without regard to the cause of the vomiting, provided there is a copious discharge by the vomiting and purging. The enlargement of the fallopian tube could not have been caused by interrupted menstruation in this case. If it is true that the menstrual fluid is secreted by the fallopian tube, and it should accidentally become closed at both ends, it would certainly dilate it. The symptoms of the distention of the fallopian tube during life would be the result of a disturbed physical and physiological action. First there would be pain, in the region of the fallopian tube, possibly other places, in the back—in the back of the head, possibly between the shoulders, or on top of the head, or through the whole head; sometimes pain in the limbs, most frequently simply on one side, pain and soreness through the abdomen; this all may be, or may not be; sometimes just under the ribs. The physiological symptoms would be such as a general impairment of health, possibly impaired digestion, maybe some disturbance of the heart in the form of palpitation, disturbance of respiration, laborious breathing, a general feeling of lassitude and want of energy, irritability of the nervous system in the form of fretfulness, or depression of spirits; certain forms of hysteria some times, constipation of the bowells and that general condition of system which indicates disturbed function. These might all be, or might not be, in connection with distended fallopian tube. You might not have any form of them. It might produce vomiting—not very likely to produce purging, more likely to produce constipation. If the end of fallopian tube next the womb was closed, and the other end open, after the menstrual fluid escaped from tube, into the peritoneum, it would not produce sore throat; it might produce inflammation of stomach indirectly. It might produce that kind of inflammation which attends peritoneal derangement. There is not an organ in the body which may not be affected by the escape of this fluid. It might affect only some of the organs. The escape of this fluid could not possibly have affected only the organs I found affected in this case, because if it escapes at all, and produces any effect, it will be in the peritoneum; because if there is any one thing established better than any thing else, it is this that a foreign element coming into the folds of the peritoneum will not remain passive. If this fluid were to escape into the peritoneum it would produce peritoneal inflammation. Peritoneal inflamation has such a marked character and features that its previous existence could not possibly escape the observation of a physician in any post mortem examination. Peritoneal inflamation would produce symptoms in death peculiar to themselves. If you have inflammation of the peritoneal memb rane, the walls of that membrane would adhere. The patient suffers excruciating pain in the region of the disease. The abdomen becomes enormously distended, always very sensitive to the touch, severe chillness followed by corespondingly high fever. This continues a longer or shorter time as the case may be. Gangrene or abscess occurs in the part diseased, and the patient dies of what is called pyemia. At this stage, instead of having a strong and full pulse, we get a quick and threadlike pulse—symptoms of nervousness, the temperature of the body very high or low—skin bathed with perspiration. I have made seven or eight post mortem examinations since I have been in practice. The enlargement of the fallopian tube would interfere with conception but not with menstruation.

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post mortem examination. I don't know what diseases they died of. I do not remember the condition of the heart in those subjects I examined. From my experience I could not give any explanation of the condition of the heart. At some points near the gall bladder the vessels were very dark. I never told any persons that the spots I saw were gangrene. The outside appearance I think was gangrene still. We made a couple of sections in liver, and discovered no disease there. It looked extremely larger than we would suppose it to be naturally. Some parts of the liver were dark, greenish, but of other points it was the usual color—the darker points were about the gall bladder. We removed it and placed it in a vessel. We did not make any other examination of the mucous membrane of the small intestines, except at the point we took it out. I don't remember whether the liver had its usual solidity or not. There was no peculiar smell in any part of the body—a simple puff of gas from peritonium when we opened it. There was a little mucous and fluid in the bowels, but not much. The fluid was watery, with yellow tinge. The blood vessels of the coats of the stomach were inflamed. I do not know whether they were congested. I supposed the blood vessels of externy and internal coats of stomach were slightly congested. You can see the internal vessels through the outside coats. I supposed decomposition was commencing at the neck. There were the marks of decomposition we found. Vomiting might produce swelling of the liver, and yet the enlargement might not be from organic disease. It might not have been unnaturally large, for some persons have larger livers than others. Inflammation makes parts more active absorbents. I speak from just what I saw. I am not speaking from my notes.

Re-Ex. In Chief.—The stomach and bowels, in my opinion, were the seat of the disease which caused the death of Mrs. Kiehl. That disease was acute *gastro enteritis*.

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DAVID SMITH, Esq., *sworn.*—I reside in Carlisle, and am the Coroner of the county. On the 19th of May last, I was called on to hold an inquest on the body of Mrs. Sarah Kiehl, at Centreville, in this county. On morning of 20th, I went up to Centreville. I was informed she had been buried some four or five days. I had the body taken up, and held an inquest. A post mortem examination was made by Dr. Kieffer and Dr. Longsdorf. After they were through with their examination, Dr. Kieffer procured some jars and the parts taken from the body were put into those jars. They were closed up and handed over to me. I brought the jars home with me to my office, the same evening, sealed them up and put them in a case in the office. They remained there until Monday morning. I then took them and put them in this little front room in the Court House, and locked the door, and left them there until the following Friday. On Friday morning I left for Philadelphia, took the jars with me, and handed them over to Prof. Rand. They never were out of my possession until I delivered them to Dr. Rand. They remained sealed all the time; the seal I put on them was on them when I gave them to Dr. Rand. I delivered them to Dr. Rand on Friday, the 26th of May

Cross Examined.—I first tried to seal the bottles up with sealing wax; but I couldn't succeed in that. I then went to Mr. Saxton's and got some cement, and sealed them up with that. There was a stopper in the mouth of the jar, a paper and a stopper put on top of the jar. There was a tin cap over the mouth of jar, and I put the cement over the cap. The cement covered the entire surface of the cap. I put the cement on Saturday evening, when I came home. I kept them in my office until Monday morning. I had a little box made for the bottles, and had it in my possession all the time. We went from carriage to Dr. Rand's in Philadelphia. The jars were kind of a greenish glass, ordinary fruit jars, such as are kept in country stores. The jars were not washed out, to my knowledge. I did not see the Doctor wash the jars out. I was with him when he purchased them at the store, and went with him to where the body was.

W. H. LONGSDORF, *recalled.*—I was with Dr. Kieffer, at the store, when he purchased the jars. They were brought down off the shelf, and after examining them, he said they would answer, and asked them for some water, and they brought him some in a bucket or a pan.—He washed them there. I think while the Coroner was paying the bill for the jars, and for their dinners. We took them down to my office, and placed the articles we had in the vessels into them. It required a little draining to get all the water out of the bottles, so they would be perfectly dry. Since giving my evidence, and referring to my notes, I have a note taken of liver of natural size. I now swear that was the case. I did swear the other way, but I would rather trust a note taken at the time, than my memory for two or three months. I examined my notes after I left the stand; I saw all the jars washed we purchased at the store. I think they were a little out of them for sands. I don't know they had candy in them; that was my impression. That jar would hold half a gallon; I'd at know that we used soap, in washing the jars. *The doctor inserted his hand; I think he had a rag.* If he had used a rag, it was one they furnished, and one that they probably had about the store. After washing them he rinsed them out. I am not positive whether that was the larger jar. We put the stomach and liver in the same jars, I think we did not put stomach and liver in the same jar. He didn't rinse them out in the same water they were washed with. The water put in the pan we took out of the pitcher. The pitcher held about a gallon. I could not swear whether we purchased three or four jars. The pan was kept in the store for washing, it was an earthen vessel.

Dr. B. H. RAND, *sworn.*—My name is B. H. Rand, M. D., aged 41, residence Philadelphia, am Physician and Professor of Chemistry in Jefferson Medical College. I received a wooden box with the lid screwed on. On being opened it was found to contain four jars—three of which are ordinarily known as specie jars—that is, glass jars with a loose fitting stopper in lid and one small self-sealing jar. The lids of the specie jars were sealed with plaster. One of the specie jars contained the stomach and a piece of intestine about three inches long. The second the liver with the gall bladder attached. The third the unopened heart, and in the fourth jar the urinary bladder, which had been opened and lost its contents. I examined all of these organs, and found arsenic in all except the heart. I received the box containing the jars from Mr. Maglaughlin and David Smith who was represented to me as the Coroner of this county. The organs were all submitted separately to the action of dilute pure muriatic acid. The stomach and liver were cut up and put into four parts, in case of accident to any one of the four. The test used to determine the presence of arsenic was the Marsh test. It is the same as that known as Reinsch's. This test is a very simple one, and free from fallacy if properly applied. To dilute pure muriatic acid, pure muriatic acid is added. A slip of bright copper foil manufactured in muriatic acid does not tarnish, but becomes rather brighter, leaving the tarnish or oxide being dissolved off. If now a solution suspected to contain arsenic, whether free from organic matter or not, be added, after the liquid has reached the boiling point, the copper acquires a steel-grey coating. (The chemist here illustrated his by experimenting before the jury.) This coating is a compound of arsenic and copper. The coating is peculiar to arsenic and no other metals. Arsenic is the only one which, when heated in a tube, at a gentle heat of a spirit lamp, will yield a ring of characteristic crystals to the naked eye appear sparkling like diamonds, and which under the microscope appear as regular octahedrons. The steel-grey coating deposited, is to the experienced eye characteristic. (He then exhibited to the jury the kind of tubes used) In treating the stomach I obtained the several specimens which I hold in my hand, and from which I obtained the results which I now exhibit. The bottles containing specimens are a marked—two for stomach, three for liver. In the paper handed to me, I found no copper foil, coated by immersion in distilled water and dilute pure muriatic acid a portion of the stomach and contents being present.—The tube contains a ring of crystals similarly obtained from a piece of copper similarly treated. I have also specimens derived from the liver treated in the same way. Third two fourteen pieces of copper foil obtained from the examination of the liver. They were taken from all the months set apart, but they do not represent the total amount of arsenic in the liver. I have here also a tube containing a ring of crystals obtained from a piece of copper foil which had been coated as before related. Here is a deposit from the bladder, and a deposit from the intestine. The stomach is marked 1, liver 3, bladder 5, and intestines 6. I moreover made a determination of the quantity in the stomach. This was done by destroying the organic matter, by means of pure hydro chloric acid and chlorate of Potash, and then separating the arsenic by sulphuretted hydrogen, dissolving the precipitated sulphide of arsenic in cold weak ammonia. The ammonia solution was evaporated to dryness in a light counterpoised glass vessel. The amount of sulphide of arsenic obtained was two grains and seven-tenths, which, assuming the sulphide to be pentia sulphide arsenic, would be equal to one and seven-tenths grains of white arsenic, or arsenous acid. The quantity in the liver, intestines and bladder was not determined by the balance. The organs which usually contain arsenic, when it is found in the liver, are the spleen, lungs, bowel and pancreas, were not submitted to me for examination. Q.—Does the quantity of arsenic found in the stomach and bowels bear any direct relation to the quantity swallowed? A.—It does not. Arsenic when taken into the stomach, produces in a great majority of cases, violent vomiting and purging, by which a large portion of that swallowed is thrown out of the body. A portion is also absorbed into the system, and passes out through the various natural channels for absorbed bodies. A man may die from arsenic, and not a trace be found in the body. Q.—What inference have you drawn from your examination of the remains submitted to you and analyzed, as to the amount of arsenic taken by the person whose remains they were? A.—An amount sufficient to cause death had been taken. It is impossible to say the quantity of arsenic by weight the person might have taken. I practice medicine whenever I have a patient. In my early professional career I paid as many as forty visits a day. I now devote most of my time to my chair of Chemistry, but occasionally see patients at my office or at their houses. The smallest fatal dose of arsenic is considered at two grains. I later from the remains submitted to me and analyzed, *that a fatal dose had been* taken by the person whose remains they were. It must have been taken shortly before death; I should say within five or six days or a week more probably the shorter than the longer period. I received a box from Mr. Sadler. It was a round box, resembling the one shown witness, about the same size. On opening it, it appeared to have been scraped out. There was a small quantity of powder, sticking between the sides and bottom of the box at the seam. As I could not detach enough powder to make the test satisfactorily, I cut the box to pieces, boiled it up in pure muriatic acid, and obtained a deposit upon copper foil, from which I obtained the sulphuret in this tube. I found arsenic in the box. (The chemist then submitted a number of photographs, taken with the aid of a microscope, of the various sublimates.) No. 1 is a sublimate obtained from a sample of known arsenic No. 2 is from the stomach, No. 3 is from the liver, No. 4 is from the box. (The micro-photographs were then handed to the jury.) These are magnified about forty diameters. I have never seen a case of arsenical poisoning, and therefore derive my knowledge from books, and I have heard in other cases. After the symptoms have fairly set in, there is a feeling as if some one were grasping the throat, with retching. 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Cross Examined.—I first tried to seal the bottles up with sealing wax; but I couldn't succeed in that. I then went to Mr. Saxton's and got some cement, and sealed them up with that. There was a stopper in the mouth of the jar, a paper and a stopper put on top of the jar. There was a tin cap over the mouth of jar, and I put the cement over the cap. The cement covered the entire surface of the cap. I put the cement on Saturday evening, when I came home. I kept them in my office until Monday morning. I had a little box made for the bottles, and had it in my possession all the time. We went from carriage to Dr. Rand's in Philadelphia. The jars were kind of a greenish glass, ordinary fruit jars, such as are kept in country stores. The jars were not washed out, to my knowledge. I did not see the Doctor wash the jars out. I was with him when he purchased them at the store, and went with him to where the body was.

W. H. LONGSDORF, *recalled.*—I was with Dr. Kieffer, at the store, when he purchased the jars. They were brought down off the shelf, and after examining them, he said they would answer, and asked them for some water, and they brought him some in a bucket or a pan.—He washed them there. I think while the Coroner was paying the bill for the jars, and for their dinners. We took them down to my office, and placed the articles we had in the vessels into them. It required a little draining to get all the water out of the bottles, so they would be perfectly dry. Since giving my evidence, and referring to my notes, I have a note taken of liver of natural size. I now swear that was the case. I did swear the other way, but I would rather trust a note taken at the time, than my memory for two or three months. I examined my notes after I left the stand; I saw all the jars washed we purchased at the store. I think they were a little out of them for sands. I don't know they had candy in them; that was my impression. That jar would hold half a gallon; I'd at know that we used soap, in washing the jars. *The doctor inserted his hand; I think he had a rag.* If he had used a rag, it was one they furnished, and one that they probably had about the store. After washing them he rinsed them out. I am not positive whether that was the larger jar. We put the stomach and liver in the same jars, I think we did not put stomach and liver in the same jar. He didn't rinse them out in the same water they were washed with. The water put in the pan we took out of the pitcher. The pitcher held about a gallon. I could not swear whether we purchased three or four jars. The pan was kept in the store for washing, it was an earthen vessel.

Dr. B. H. RAND, *sworn.*—My name is B. H. Rand, M. D., aged 41, residence Philadelphia, am Physician and Professor of Chemistry in Jefferson Medical College. I received a wooden box with the lid screwed on. On being opened it was found to contain four jars—three of which are ordinarily known as specie jars—that is, glass jars with a loose fitting stopper in lid and one small self-sealing jar. The lids of the specie jars were sealed with plaster. One of the specie jars contained the stomach and a piece of intestine about three inches long. The second the liver with the gall bladder attached. The third the unopened heart, and in the fourth jar the urinary bladder, which had been opened and lost its contents. I examined all of these organs, and found arsenic in all except the heart. I received the box containing the jars from Mr. Maglaughlin and David Smith who was represented to me as the Coroner of this county. The organs were all submitted separately to the action of dilute pure muriatic acid. The stomach and liver were cut up and put into four parts, in case of accident to any one of the four. The test used to determine the presence of arsenic was the Marsh test. It is the same as that known as Reinsch's. This test is a very simple one, and free from fallacy if properly applied. To dilute pure muriatic acid, pure muriatic acid is added. A slip of bright copper foil manufactured in muriatic acid does not tarnish, but becomes rather brighter, leaving the tarnish or oxide being dissolved off. If now a solution suspected to contain arsenic, whether free from organic matter or not, be added, after the liquid has reached the boiling point, the copper acquires a steel-grey coating. (The chemist here illustrated his by experimenting before the jury.) This coating is a compound of arsenic and copper. The coating is peculiar to arsenic and no other metals. Arsenic is the only one which, when heated in a tube, at a gentle heat of a spirit lamp, will yield a ring of characteristic crystals to the naked eye appear sparkling like diamonds, and which under the microscope appear as regular octahedrons. The steel-grey coating deposited, is to the experienced eye characteristic. (He then exhibited to the jury the kind of tubes used) In treating the stomach I obtained the several specimens which I hold in my hand, and from which I obtained the results which I now exhibit. The bottles containing specimens are a marked—two for stomach, three for liver. In the paper handed to me, I found no copper foil, coated by immersion in distilled water and dilute pure muriatic acid a portion of the stomach and contents being present.—The tube contains a ring of crystals similarly obtained from a piece of copper similarly treated. I have also specimens derived from the liver treated in the same way. Third two fourteen pieces of copper foil obtained from the examination of the liver. They were taken from all the months set apart, but they do not represent the total amount of arsenic in the liver. I have here also a tube containing a ring of crystals obtained from a piece of copper foil which had been coated as before related. Here is a deposit from the bladder, and a deposit from the intestine. The stomach is marked 1, liver 3, bladder 5, and intestines 6. I moreover made a determination of the quantity in the stomach. This was done by destroying the organic matter, by means of pure hydro chloric acid and chlorate of Potash, and then separating the arsenic by sulphuretted hydrogen, dissolving the precipitated sulphide of arsenic in cold weak ammonia. The ammonia solution was evaporated to dryness in a light counterpoised glass vessel. The amount of sulphide of arsenic obtained was two grains and seven-tenths, which, assuming the sulphide to be pentia sulphide arsenic, would be equal to one and seven-tenths grains of white arsenic, or arsenous acid. The quantity in the liver, intestines and bladder was not determined by the balance. The organs which usually contain arsenic, when it is found in the liver, are the spleen, lungs, bowel and pancreas, were not submitted to me for examination. Q.—Does the quantity of arsenic found in the stomach and bowels bear any direct relation to the quantity swallowed? A.—It does not. Arsenic when taken into the stomach, produces in a great majority of cases, violent vomiting and purging, by which a large portion of that swallowed is thrown out of the body. A portion is also absorbed into the system, and passes out through the various natural channels for absorbed bodies. A man may die from arsenic, and not a trace be found in the body. Q.—What inference have you drawn from your examination of the remains submitted to you and analyzed, as to the amount of arsenic taken by the person whose remains they were? A.—An amount sufficient to cause death had been taken. It is impossible to say the quantity of arsenic by weight the person might have taken. I practice medicine whenever I have a patient. In my early professional career I paid as many as forty visits a day. I now devote most of my time to my chair of Chemistry, but occasionally see patients at my office or at their houses. The smallest fatal dose of arsenic is considered at two grains. I later from the remains submitted to me and analyzed, *that a fatal dose had been* taken by the person whose remains they were. It must have been taken shortly before death; I should say within five or six days or a week more probably the shorter than the longer period. I received a box from Mr. Sadler. It was a round box, resembling the one shown witness, about the same size. On opening it, it appeared to have been scraped out. There was a small quantity of powder, sticking between the sides and bottom of the box at the seam. As I could not detach enough powder to make the test satisfactorily, I cut the box to pieces, boiled it up in pure muriatic acid, and obtained a deposit upon copper foil, from which I obtained the sulphuret in this tube. I found arsenic in the box. (The chemist then submitted a number of photographs, taken with the aid of a microscope, of the various sublimates.) No. 1 is a sublimate obtained from a sample of known arsenic No. 2 is from the stomach, No. 3 is from the liver, No. 4 is from the box. (The micro-photographs were then handed to the jury.) These are magnified about forty diameters. I have never seen a case of arsenical poisoning, and therefore derive my knowledge from books, and

post mortem examination. I don't know what diseases they died of. I do not remember the condition of the heart in those subjects I examined. From my experience I could not give any explanation of the condition of the heart. At some points near the gall bladder the vessels were very dark. I never told any persons that the spots I saw were gangrene. The outside appearance I think was gangrene still. We made a couple of sections in liver, and discovered no disease there. It looked extremely larger than we would suppose it to be naturally. Some parts of the liver were dark, greenish, but at other points it was the usual color—the darker points were about the gall bladder. We removed it and placed it in a vessel. We did not make any other examination of the mucous membrane of the small intestines, except at the point we took it out. I don't remember whether the liver had its usual solidity or not. There was no peculiar smell in any part of the body—a simple puff of gas from peritonium when we opened it. There was a little mucous and fluid in the bowels, but not much. The fluid was watery, with yellow tinge. The blood vessels of the coats of the stomach were inflamed. I do not know whether they were congested. I supposed the blood vessels of externy and internal coats of stomach were slightly congested. You can see the internal vessels through the outside coats. I supposed decomposition was commencing at the neck. There were the marks of decomposition we found. Vomiting might produce swelling of the liver, and yet the enlargement might not be from organic disease. It might not have been unnaturally large, for some persons have larger livers than others. Inflammation makes parts more active absorbents. I speak from just what I saw. I am not speaking from my notes.

Re-Ex. In Chief.—The stomach and bowels, in my opinion, were the seat of the disease which caused the death of Mrs. Kiehl. That disease was acute *gastro enteritis*.

Cross-Examined.—Q.—If neither you nor Dr. Kieffer can account for the flaccid condition of the heart, how can you undertake to say that she did not die from some cause existing in her heart? A.—Because, after making post mortem examination we found evidence of disease in the stomach and bowels, sufficient to produce death, and in my opinion it would have been impossible to live. Not knowing having detected in the heart, we came to the conclusion that she died from disease of the stomach and bowels, and not from any supposable cause in the heart, that we could not detect. I didn't profess to account for the unnatural condition of the heart. I didn't consider sticking our fingers into the heart a thorough examination.

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