May 31. /34

Inspector Vance/

Would you be kind enough to read over this copy of my story and let me know as soon as it is convenient if the story is suitable for publication. Thanking you for all your kindness,

Gar Macpherson

Macpherson

"I'm disappointed," said a casual acquaintance to me the other morning as we stepped out of Magistrate W. M. McKay's Vancouver Police Court after listening to one of Inspector J. F. C. B. Vance's scientific cases.

"Why?" I inquired.

"Well, at least, I expected to hear the man talk and tell how he arrived at his conclusions. Instead, I'll bet he never said more than two dozen words while he was on the stand. I claim that's not giving the public a break. I wanted to hear all the mysterious processes he used to convict those two men and send them to prison where they belong."

With a look of disillusionment on his face my acquaintance moved toward the stairway.

Up the stairs I went to Vance's bureau of science laboratory on the top floor of police headquarters.

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The silence of that big laboratory was something tangible. I could feel it when I stepped through the door.

From another room Inspector Vance came to meet me, his ever ready, friendly smile twisting his lips. I told him that I had wanted to convince myself that he was not just bluffing the judge and jury when he stepped into the witness box. In other words I wanted to look over his shoulder while he carried out his business of solving mysteries.

A few seconds later Vance walked to a long marble-topped table. He picked up a man's shirt on the front of which were large brownish blotches.

"Blood stains?" I asked.

"I believe so," replied the inspector."However, we'll find out within an hour or so. Come along."

He led the way down the long laboratory into a room fillied with tables and cupboards loaded with strange instruments, some of which I recognized and other which might have scared me half to death had I been left alone in the room.

After gazing through the eyepiece of the microscope for several minutes, Vance finally removed the stained shirt with the remark:

"It resembles blood."

He talked like a man who had been given a puzzle to solve - a man who knew something but was going to prove his own conclusions before believing them himself.

A few seconds later he was busy cutting one of the stained sections from the shirt. This piece of cloth he cut into three parts, one for each of three phases of the blood test, he explained.

He snapped up a bottle of liquid that laid before him on the table; poured out a small quantity into a sterilized dish and into the solution placed one of the section of cloth.

Having ascertained the approximate age of the stain bythe degree of oxidation, Vance had used the best solution for that particular stage to dissolve out the liquid which caused the stain on the shirt.

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With the blue shirt dangling from one hand, Vance advanced on one of his battery of microscopes. He lifted off the bell jar that protected the fine instrument from dust and adjusted the shirt on the stage in such a fashion that one of the brownish stains were direc ly under the lenses.

He explained that this was the first step in a blood test. From this microscopic examination he would be able to tell the degree of oxidization of the stain and thus its approximate age.

Also from this examination, he would get some idea as to the direction from which the liquid which caused the stain had come, could ascertain the albuminous content should the stain resemble blood and whether or not the stain had been absorbed from inside or out.

"There can be little doubt that this particular stain is blood," declared the inspector. "But for my evidence in court, I must be able to prove that it is blood. And there is a great difference between knowing and proving."

He allowed the fragment of cloth to soak some time before removing it from the solution. When he did so he took the brownish-colored liquid which remained to the high power microscope.

A drop of this liquid was placed on a glass slip which was fitted under the clips on the microscope stage. While gazing into the eyepiece he counted the corpscules; alos he noted any bacteriological condition of what was now assumed to be blood that would indicate any pathogenic disease in the veins of the former owner.

Having completed this examination, Vance went to work with his test tubes and removed any foreign substance from his specimen which might later interfere with its later identification as blood.

Next he took the purified specimen to his spectroscope and clipped the test tube between one end of the instrument and a sodium flame. Then he looked into the eyepiece. A moment later he looked up.

"Well," he stated, "I can now tell how long that blood has been on the shirt and identify it by the spectrum bands."

Vance snapped another bottles from the marble-topped table.

"A haematin solution to obtain blood crystals," he explained.

Another short wait and he had placed the specimen under the microscope again. This time when he looked through the eyepiece, he saw blood crystals. These crystals were dissolved and a portion of the solution was put through a number of chemical tests while another portion went back to the spectroscope.

"Merely to confirm my first findings that it was blood, " explained Vance while I marvelled at the patience a man must have, as well as knowledge, to hold down the job of a scientific detective.

"You know," continued the inspector, " a great many things resemble blood. For instance, sputum or perspiration will give similar results when submitted to many blood tests. Consequently it is essential that every care in be exercised in making these tests. A man's life might be at stake."

After obtaining this confirmation Vance took a second of the three little pieces of cloth he had cut from the stained shirt.

By several chemical processes he removed the dirt from the specimen and dissolved out the blood as he had done in the first instance. He picked up a small tub and placed in it a drop of the specimen blood. Then he picked up a bottle.

Vance then went through an involved process which he explained separates out the fibrin or solid matter in the blood, leaving the liquid material which is called serum.

Next he placed a small drop of the serum from the specimen blood into another small sterilized tube and picked up another bottle.

"Antisera," he explained indicating the bloottle in his hand. There is an antisera to determine each individual kind of blood, whether animal or human.

"We get the antisera from rabbits," said Vance as he prepared the solution. "Rabbits are innoculated with human blood serum, dog blood serum or any other kind of blood serum for which you want to obtain an antisera. -- mor

"This is ~~xxxxx~~ allowed to circulate through the rabbits veins for a period of eight days. Then the animal's kneck is shaved and the juglar vein cut and the rabbit bled. When the fibrin is removed from the rabbit blood we have a blood serum for our precipitation tests. All that is left is to standardize the antiserum. We do this ourselves."

As he concluded his explanation Vance, placed a drop of his specimen blood serum into a small tube. He followed this with a drop of the antisera, then held the tube at eye level in good light. As the drop of antisera met the drop of blood serum in the tub there was a slight precipitate; absolute and infallible proof that the stains on the shirt were human blood.

"This test is the most delicate known to science," said Vance, "and it must be undertaken with the greatest of care and accuracy. Otherwise, an innocent man may lose his life."

There is only one more test in the identification of blood. That is called the agglutinin test - to find the blood group of the former owner of the blood that made the stains on that shirt.

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All persons find that their blood falls into one of four groups numbered 1, 2, 3, and 4. Group 1 will comprise 4.8 per cent; group 2, 41 per cent; group 3, 12.9 per cent and group four, 41 per cent of all persons.

Thus it becomes a point in the scientific investigation of a murder to ascertain in which group falls the blood stains, blood of the victim and blood of the accused.

Should the victim, the blood stains and the suspect all fall into the same group - which is highly probable, inasmuch as groups 2 and 4 comprise 82 per cent of all living persons - the test is valueless, but necessary from Vance's scientific point of view.

Hence, the two most important facts to be gleaned from blood tests of stains on clothing, wood, earth, metal or, in fact, any other substances are to be found in the precipitation test and the bacteriological condition of the blood. No blood is absolutely pure, according to science. There is always a certain amount of bacteria, most of which is of a malignant nature, to be found in blood.

In the case of Vance's blood test, it is possible to isolate this bacteriological condition and compare it with the condition of the victim's and the suspect's blood, thus furnishing another point of identification.

I wondered as I left the laboratory if my disappointed friend realized the amount of work necessary to permit Vance to step into a witness box in any court in the land and state ~~him~~ in less than two dozen words as many facts that would send a man to his death on the gallows or to freedom which his innocence deserved.

I know that I did.

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