

## Your Story

You are a molecular biologist attending an international meeting of your peers. The week has been entertaining enough, with no help, though, from the inhospitable surroundings. Few people visit this country, and now you know why. You find the ancient host city drab and chilling, and you'll be relieved to be on the plane headed for home.

In fact, you've had enough. You're up to the brim with fascinating results and breakthroughs and decide to skip the last few talks. Better to find someplace away from the crowd where you can sit down and write a letter. Shouldn't be difficult, since besides the meeting, there seems to be little going on this summer in the university where the meeting is being held. In a few minutes, you've walked away from the main lecture hall, away from the poster room, up the stairs, and into a deserted hallway. Bare walls, no tables or other furniture, but the floor is good enough for your purposes.

You're about to plop yourself down and let the ferment of your mind subside, when you hear a rapid tap-tap-tap growing in intensity, coming from around the corner. In a moment, an old man appears pumping his arms and running as fast as he can towards you. It is Dr. S-, the main organizer of the meeting and one of the fathers of molecular biology. He is not a person easily imagined in any form of exertion, and judging by his size, speed, and current facial color, it is not an accustomed activity. Although only thirty or forty feet away, he has not noticed you, his concentration clearly inward.

The polished linoleum proves too much. One step fails to grip and Dr. S- sprawls to the floor. His right hand, which you now realize had been clutching some object like a baton, loosens its grasp on contact with the hard surface, and a tube skitters along the floor towards you. You pick it up and offer it to him. His cheek is to the floor and he is breathing laboriously. At first he looks blankly at the tube and at you, and then his eyes widen with remembrance. He snatches the tube away and pulls himself up, all in one motion.

At that moment there is a faint commotion in the distance. You can barely hear it but it has a galvanic effect on Dr. S-. He jerks his head over his shoulder seeing in terror what you do not. Then slowly his muscles relax, and calm for the first time, he turns his attention to you, looking deeply into your eyes. He speaks your name -- you're amazed the great man knows it -- and thrusts the tube into your hand, saying in low accented tones, "You will understand." Looking no further at the tube or at you, he scabbles to his feet and continues his mad dash down the hallway, a relay runner now without his baton.

The noise comes closer, and three uniformed men appear from around the corner. One of them raises what looks like a rifle and aims it at the old man. You hear a soft whooshing sound. Dr. S- whirls, clutching his chest, and falls a second time to the floor.

This time he does not move. Two of the men run to him -- you flatten yourself against the wall as the clatter passes -- but one walks slowly over, only a notebook's width away from you. "Too bad..." He gestures to the scientist. "Weak heart."

In few moments, you will your feet to walk down the empty hallway, but your heart does not stop pounding until you have thrown your suitcase together, passed customs, and are flying home. You permit yourself a moment to take the tube out from its hiding place and examine it. It is a standard laboratory test tube containing several milliliters of a liquid that looks no different from water.

You have a million things to catch up on when you've returned to your own lab -- sleep being high on the list -- but your mind cannot put aside thoughts of the test tube. You perform a few simple chemical tests and reach the conclusion that the tube contains a nearly pure solution of DNA. Gel electrophoresis shows that the DNA is homogeneous, consisting of single fragment. You can think of nothing more to do regarding this mystery except to send the DNA out to be sequenced. Having done this, you try to put the matter out of your mind.

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In a few days you will receive by e-mail the results from the sequencing lab. You will attempt to deduce whatever you can that might shed light on recent events. At minimum, you should identify every part of the sequenced fragment and its relevant features. From this, you may investigate more deeply any clues you have picked up.

You sense that some grave danger is imminent and have set for yourself a deadline of February 15, 2006 to reach the bottom of this mystery and, if necessary, present your findings to the proper authorities. You should have a written report, consisting of the sequence annotated with all of the features you've identified, and a brief narrative of how you reached your conclusions and what you think the sequence might signify. You should also be prepared to give a brief oral presentation, with diagrams as appropriate.