



MARIA'S TRAVELS

(Waterman & Stanley. 1998.)
(Revised: Winch 2008)

Synopsis:

An epidemic caused by a fungus has begun in the U.S with potentially devastating effects on the corn crop. Derrick Hernandez and Maria Santini are graduate students studying the epidemic and crop improvement. An important resource in their studies is wild corn, teosinte, which may be resistant to the fungus. Maria, a geneticist, and Derrick, an ecologist, are headed south for their first field season.

PART 1

While enroute to Durango from Mexico City, Maria was delayed several days by storms. Worse, she contracted diarrhea, which she began treating right away. After a day's rest in Durango, she made the steep and difficult hike to the research site where she soon collapsed. Her symptoms were abdominal and leg cramping, disorientation, and rapid shallow breathing. Alerted by radio, Dr. Federico Stegnaro in Durango advised giving her small amounts of saline during the night. The next day she made her way down the mountain on a pack mule and with Derrick's help (he was feeling poorly himself) to see the doctor.

At the clinic, Dr. Stegnaro took Maria's blood samples and did a variety of procedures to test out several possibilities. Thin and thick blood slides showed no evidence of malaria, but her blood chemistry was more revealing. Her hematocrit was abnormally high, blood pH lower than normal and K⁺ very low. He also noted what might be one or two unusual red blood cells. He started rehydration therapy and sent her by ambulance jeep to Mazatlan Hospital.

PART 2

Dr. Luna said, "I wanted to talk with you about some of the findings. The doctor in Durango reported one or two odd erythrocytes. I did not find these. But I did do a special electrophoresis test on a sample of your blood. Senora Santini, are you aware that you have sickle cell trait?" Maria, stunned, said, "What? What? I have sickle cell disease?"

"No, Senora Santini, you have sickle cell trait, not the disease. You will live normally with no restrictions."

"How could I have this? I'm Italian!"

"Most people think that only individuals with African ancestry can have sickle cell," the doctor replied, "but that is not true."

Maria turned to Marcus and quietly asked "Marcus, doesn't your cousin Leland have sickle cell?"

