

# ELMS PICNIC GONE BAD!

The picnic started at 6:00 pm on Tuesday evening at Rocky Neck Park. The administration and faculty of East Lyme Middle School organized the picnic as a relaxing event before the faculty meeting that would be held after dinner. Many people brought family members and a pot luck dish for the table.

Mrs. Haling and Ms. Wendelin arrived at 5:30 to set up. Mr. Anderson was next to arrive to set up the grill. He brought his grill from home and had to take a few minutes to clean it off because it had not been used since last summer.

Mr. Mathieu arrived next from the supermarket where he had picked up the hamburgers. After the charcoal was lit and aluminum foil was placed over the grills, Mr. Anderson began to cook.

At 5:55, Mrs. Haling realized there was only one serving spoon. She left to get some more spoons, returning about 30 minutes later. The other teachers waited for a while, but finally decided to start eating about 6:20.

When all of the food arrived there was a full menu that included baked beans, chicken, ham, green bean casserole, cherry pie, pudding, potato salad, macaroni salad, corn, and hamburgers. Drinks included soda, water, coffee and tea.

Mr. Mathieu was first through the line. He tried the green bean casserole, ham and a hamburger.

Mrs. Berchielli was next. She ate potato salad, ham, and a hamburger

The third person through the line was Mr. Bitgood. He ate some green bean casserole, potato salad and an hamburger.

Mrs. Danis was next in line. She sampled the potato salad, a hamburger, and the cherry pie.

Even during the meeting, some of the kids chased geese with their water guns. When they ran out of water they quickly refilled them from the nearby river.

Just about everyone at the picnic, except those who only came for the meeting, ended up wet. Since it was a hot day, the only time anyone seemed to mind the soaking was when one of the kids missed their intended target and almost put out the grill. After this incident, which happened about 6:10, the kids stayed away from the main gazebo, where the food was located, and turned their attention to the geese and the teachers walking around.

East Lyme officials were alarmed by the sicknesses and deaths that seemed to be associated with the event. They have promised a full investigation. Even the waste-water treatment plant just a few hundred yards up the river will have to submit a report on their procedures for water treatment. This is the first time anything like this has happened at the park and officials want to be sure that it does not happen again.

Park managers said that most of the symptoms, such as dehydration, stomach cramps, nausea, and vomiting, seem to indicate some type of food poisoning. However, at this point they can not be certain.

**You are part of a team of epidemiologists that have been called in to get to the bottom of this mystery.**

**You will need to identify the cause of the disease and prevent any further outbreaks. Time is of the essence.**

**The first thing you will want to do is meet with your team members and outline the information you have been given. East Lyme officials have promised complete cooperation in this matter.**

**Good luck!**

## **EAST LYME MIDDLE SCHOOL PICNIC MENU**

**BAKED BEANS:** Simply purchased two large cans of baked beans and heated them on a stove top to boiling.

**PUDDING:** Mixed four packets of chocolate pudding with four cups of milk. Heated it and then put it in the refrigerator until the afternoon of the picnic.

**CHICKEN:** Baked chicken legs for one hour.

**HAM:** Baked ham for 2 hours and 30 minutes until the thermometer read 150 degrees for 20 minutes.

**GREEN BEAN CASSEROLE:** Cracker crust covered with two cans of cream of mushroom soup and two jars of green beans. Topped with two cans of small onions. Baked for 15-20 minutes until warm.

**POTATO SALAD:** One jar of salad dressing, assorted diced vegetables, two tablespoons of sugar,  $\frac{1}{2}$  cup of mustard, 6 cups of diced and cooked potatoes.

**MACARONI SALAD:** One box elbow macaroni, 3 tablespoons of mustard, one jar of salad dressing, various diced vegetables.

**TUNA CASSEROLE:** Cracker crust, 3 cans of tuna, one can cream of mushroom soup, one can cream of chicken soup. Mixed and topped with parmesan cheese topping.

**HAMBURGERS:** Bought at the supermarket just before the picnic. Receipt showed the time was 12:25.

**CORN:** 2 large cans of corn heated to simmering.

**CHERRY PIE:** Mountain top cherry pie, baked 40 minutes, pre-made

# ELMS PICNIC GONE BAD!

Name	FOOD CONSUMED										
	Baked Beans	Pudding	Chicken	Ham	Green Bean Casserole	Tuna Casserole	Cherry Pie	Potato Salad	Macaroni Salad	Hamburger	Corn
<u>Mrs. Haling</u>											
<u>Ms. Wendelin</u>											
<u>Mr. Anderson</u>											
<u>Mr. Mathieu</u>											
<u>Mrs. Berchielli</u>											
<u>Mr. Bitgood</u>											
<u>Mrs. Danis</u>											
<u>Mrs. Stroebel</u>											
<u>Mrs. Bond</u>											
<u>Mr. Landry</u>											
<u>Mr. Dewell</u>											
<u>Ms. Emch</u>											
<u>Mr. Allen</u>											
<u>Mrs. Nastri</u>											
<u>Mrs. Bagley</u>											
<u>Mrs. Tukey</u>											
<u>Mrs. Frost</u>											
<u>Mrs. Witovich</u>											
<u>Mrs. Kelly</u>											
<u>Mrs. Beaudette</u>											
<u>Dr. Galasso</u>											
<u>Mrs. Anusewicz</u>											
<u>Mrs. Quagan</u>											

Other Notes:

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Name	FOOD CONSUMED										
	Baked Beans	Pudding	Chicken	Ham	Green Bean Casserole	Tuna Casserole	Cherry Pie	Potato Salad	Macaroni Salad	Hamburger	Corn
Mrs. Haling		X			X			X		X	
Ms. Wendelin	X	X								X	X
Mr. Anderson		X			X			X		X	
Mr. Mathen				X	X					X	
Mrs. Bechelt				X	X			X		X	
Mrs. Bligood					X			X		X	
Mrs. Davis							X	X		X	
Mrs. Stroebel	X								X	X	
Mrs. Bond		X	X		X				X	X	
Mr. Landry	X				X				X	X	
Mr. Dewell	X									X	X
Ms. Emch	X	X		X							
Mr. Allen	X								X	X	
Mrs. Nastri	X								X	X	
Mrs. Baglev	X	X		X							
Mrs. Tukey											
Mrs. Frost											
Mrs. Witovich											
Mrs. Kelly		X	X		X			X			
Mrs. Beaudette		X	X		X					X	
Dr. Calasso	X	X	X	X	X		X	X	X	X	X
Mrs. Antisewicz											
Mrs. Guggan	X	X	X	X	X	X	X	X	X	X	X

Other Notes:

STICK  
DUG

## **ELMS PICNIC GONE BAD! Information Cards**

### **Mrs. Kelly**

Brought plates and cups to the picnic

Had chicken, potato salad, pudding, green bean casserole

Became sick Tuesday evening

Symptoms included nausea, vomiting and dizziness

### **Mrs. Beaudette**

Recovering

Became ill Tuesday night and was rushed to the hospital by her husband

Her son enjoyed his water gun, spraying teachers with river water

She loved the burgers made by Mr. Anderson

She also tried some green bean casserole, chicken, and pudding

Her son did not become ill

### **Dr. Galasso**

Recovering

Had a great time except when she stepped in geese droppings, which seemed  
to be everywhere

She did not mind being soaked

She tried a little bit of everything to eat

### **Mrs. Anusewicz**

Arrived late, just in time to grab a burger and some green bean casserole

Most of the utensils and food were already put away

Became ill Wednesday morning and had to leave work around 8:30

Suffered from nausea, dizziness, and was so disoriented that she could not  
drive herself home

### **Ms. Wendelin**

Helped to set up for the picnic

Had a hamburger, baked beans, pudding, and corn

Spent her time sitting in one of the gazebos and watching the kids chase the  
geese

She is lactose intolerant

She became ill just a couple of hours after the picnic, suffering from severe  
stomach pains

She went to bed and felt fine in the morning.

## **PATHOLOGY REPORT**

### **VICTIM...Mrs. Bond:**

Admitted to hospital suffering from abdominal pain and vomiting  
Began diagnostic tests but patient's condition deteriorated  
Death due to respiratory and heart failure  
Time of death: 3:30 am, Wednesday morning

### **VICTIM...Mr. Bitgood:**

Paramedic response to home  
Pronounced dead on arrival  
Attempts to revive failed  
Time of death: 11:30 pm Tuesday night

### **VICTIM...Mr. Mathieu**

Admitted to hospital suffering from abdominal pain, headache, and  
paralysis of extremities  
Lapsed into shock  
Pulmonary failure followed  
Time of death: 2:30 am, Wednesday morning

### **VICTIM...Mrs. Berchielli**

Admitted to hospital suffering paralysis  
Unable to communicate to hospital staff  
Died of heart and respiratory failure  
Time of death: 1:20 am, Wednesday, morning

## **NEW INFORMATION**

- #1: We have since learned that, luckily, there was only one burger on the grill when it was sprayed with water. Mr. Anderson decided to throw it away because he had to lift up the grill and add more charcoal. Many times he would walk away from the grill to talk to someone and return to some very well done burgers. No one seemed to mind, that's the way they wanted them.
- #2: We have also learned that the wastewater treatment plant performed several tests on the water coming from their plant. The effluent (water being pumped out) was virtually free of any bacteria. The plant was doing a good job. They also did tests on the water around the park and found no notable bacterial contamination.

**Mr. Landry**

Organized a game of volleyball set up by the gazebo

The players were a favorite target of the water guns

Mrs. Kelly stepped on a goose going after the ball

Mr. Landry became ill Tuesday evening.

He was treated and released from the hospital Wednesday morning.

**Mrs. Quagan**

Sampled a little bit of everything

Became ill Tuesday night and went to the hospital Wednesday morning

Complained of stomach cramps and nausea

Doctors quickly began an IV drip to help replenish lost fluids

Briefly went into a coma, then slowly recovered

**Mr. Anderson**

Took control of the grill...Mr. Mathieu soon showed up with the hamburger meat at started making the burgers

Had some potato salad, green bean casserole, a hamburger, and pudding

Became ill, suffering from numbness, disorientation, nausea and vomiting

Was treated and released after several days in the hospital

**Mrs. Haling**

Arrived early with her son and helped set up for the picnic

After many of the staff arrived she realized that there was only one serving spoon and went home to get more

Returned about 30 minutes later with spoons (after several faculty members had gone through the line) to find her son chasing geese with the water guns.

Both Mrs. Haling and her son became ill.

**Mrs. Danis**

Complained of stomach cramps early Tuesday night

Her condition continued to worsen until she finally had to be take to the hospital

She was given massive doses of antibiotics

Her condition became worse and her symptoms began to include vomiting and disorientation

She soon found that she could not remember much about the picnic

After some time her condition improved



# WANTED

**STAINED OR ALIVE**



**Foul Sal monella**  
**AKA: *Salmonella typhimurium***

**Gram Stain: Negative**  
**Shape: rod - bacillus**

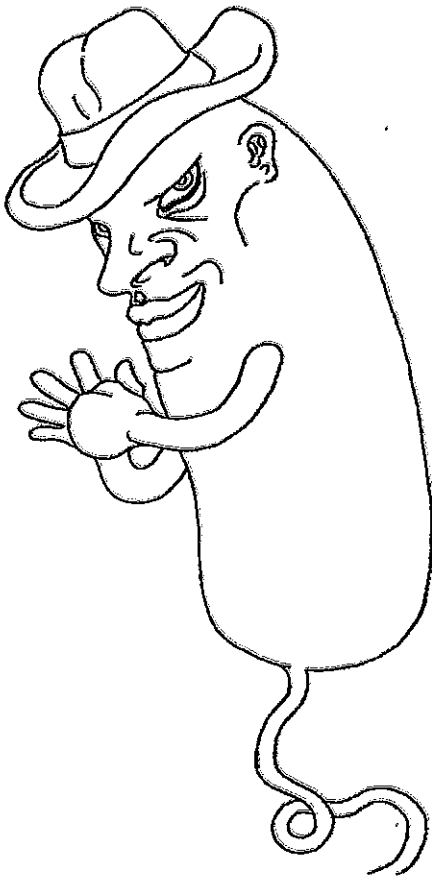
*This bacterium causes salmonella food poisoning. It is usually caused by eating undercooked fowl (such as chicken or turkey) but can also be contracted from a contaminated water supply. Symptoms include headache, chills, and stomach pain and are usually followed by nausea, vomiting, diarrhea, and fever. Symptoms usually last 3 to 4 days. After this time, an individual may become a carrier of the disease. Rarely fatal if treated quickly*

**For more information on this and other disease-causing microbes, check out the following sites:**

[www.cdc.gov/ncidod/dbmd/diseaseinfo/](http://www.cdc.gov/ncidod/dbmd/diseaseinfo/)  
[www.cfsan.fda.gov/~mow/chap1.html](http://www.cfsan.fda.gov/~mow/chap1.html)

# WANTED

**STAINED OR ALIVE**



**Butch Botch**

**AKA: *Clostridium botulinum***

**Gram Stain: Positive**

**Shape: rod - bacillus**

*This bacterium causes botulism. Botulism is actually caused by the toxins produced by the bacteria and not the presence of the bacteria itself. This organism reproduces by forming spores, which can be found in soil and therefore on vegetation. The bacteria are often found in meats and improperly canned foods. Infected individuals initially suffer from nausea, vomiting, and diarrhea. If enough toxin is ingested or produced, death can result from a general breakdown of the nervous system. Individuals may become paralyzed and death usually occurs as a result of respiratory paralysis.*

**For more information on this and other disease-causing microbes, check out the following sites:**

[www.cdc.gov/ncidod/dbmd/diseaseinfo/](http://www.cdc.gov/ncidod/dbmd/diseaseinfo/)

[www.cfsan.fda.gov/~mow/chap2.html](http://www.cfsan.fda.gov/~mow/chap2.html)

# WANTED

**STAINED OR ALIVE**



## **Boss Streptococ**

**AKA:** *Streptococcus pyogenes*

**Gram Stain:** Positive

**Shape:** round - coccus

**This bacterium is widely distributed among humans. Infected individuals may spread this pathogen through respiratory droplets. This organism can cause sharp outbreaks of sore throats and scarlet fever. High fever and skin lesions characterize infection by this pathogen. Individuals with known infection should be isolated.**

**For more information on this and other disease-causing microbes, check out the following sites:**

[www.cdc.gov/ncidod/dbmd/diseaseinfo/](http://www.cdc.gov/ncidod/dbmd/diseaseinfo/)

[www.cfsan.fda.gov/~mow/chap21.html](http://www.cfsan.fda.gov/~mow/chap21.html)

# WANTED

**STAINED OR ALIVE**



**Gassy Gastro**

**AKA: *Clostridium perfringens***

**Gram Stain: Positive**

**Shape: rod - bacillus**

*This bacterium causes gas gangrene. The condition can lead to a build up of gases in the muscles of the body rendering them useless. Infection also causes stomach pain and cramping (gastroenteritis). Disease is usually caused by eating meat that has been stewed or boiled and then set aside before reheating and serving.*

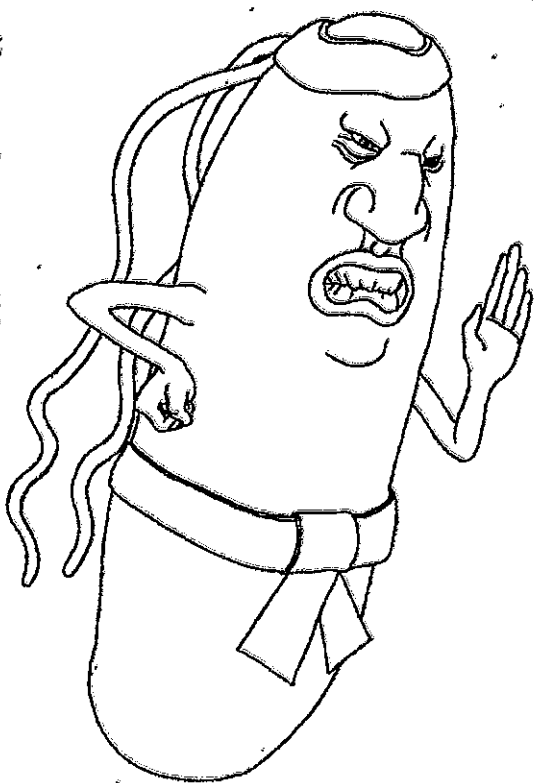
**For more information on this and other disease-causing microbes, check out the following sites:**

[www.cdc.gov/ncidod/dbmd/diseaseinfo/](http://www.cdc.gov/ncidod/dbmd/diseaseinfo/)

[www.cfsan.fda.gov/~mow/chap11.html](http://www.cfsan.fda.gov/~mow/chap11.html)

# WANTED

**STAINED OR ALIVE**



**Nim Rod**  
**AKA: *Bacillus cereus***

**Gram Stain: Positive**  
**Shape: rod - bacillus**

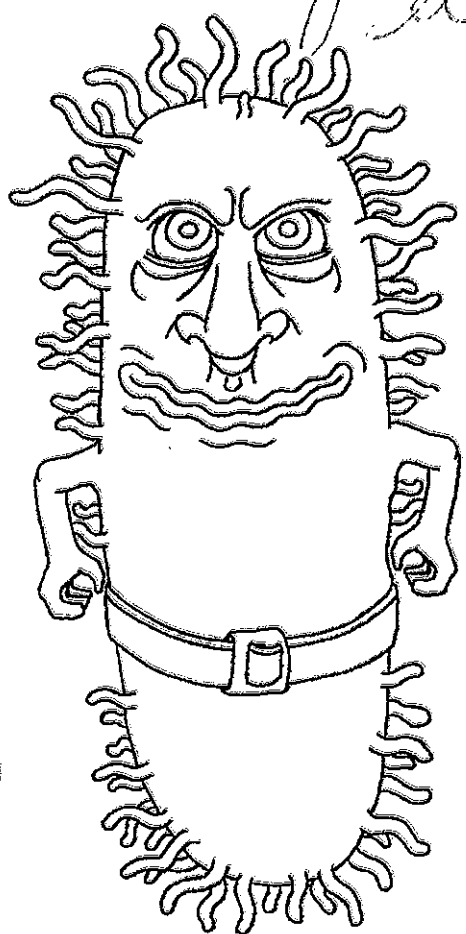
*Bacillus cereus* is one of the many types of bacteria that cause food poisoning. General symptoms of stomach cramps, dizziness, and vomiting can be attributed to the bacteria but the infection is rarely fatal. The illnesses caused by this unsightly intestinal intruder are actually caused by toxins it produces.

**For more information on this and other disease-causing microbes, check out the following sites:**

[www.cdc.gov/ncidod/dbmd/diseaseinfo/](http://www.cdc.gov/ncidod/dbmd/diseaseinfo/)  
[www.cfsan.fda.gov/~mow/chap12.html](http://www.cfsan.fda.gov/~mow/chap12.html)

# WANTED

**STAINED OR ALIVE**



*E. the kid coli*  
**AKA: *Escherichia coli***  
**Gram Stain: Negative**  
**Shape: rod - bacillus**

*E. coli* bacteria are found in the intestines of healthy animals, including humans. There are many different strains or types of this bacterium and most are harmless to humans. However, some strains have been known to cause *E. coli* food poisoning. People can become infected by eating undercooked meat products (especially ground meat) that have been contaminated with animal feces. *E. coli* also can be contracted by ingesting other types of food, water, or anything else that has been contaminated with human or animal waste. Upon infection, the bacteria multiply and produce toxins. Victims usually suffer severe, bloody diarrhea and stomach cramps. Some suffer vomiting. Infection can be fatal, especially for the elderly and the young since their immune systems are not as strong as those in other age groups. Death can result from dehydration due to the loss of body fluid, or damage to the red blood cells and kidneys.

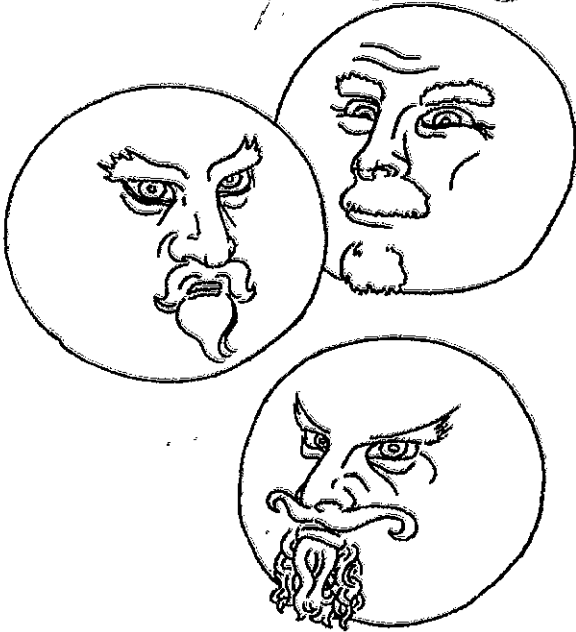
**For more information on this and other disease-causing microbes, check out the following sites:**

[www.cdc.gov/ncidod/dbmd/diseaseinfo/](http://www.cdc.gov/ncidod/dbmd/diseaseinfo/)

[www.cfsan.fda.gov/~mow/chap15.html](http://www.cfsan.fda.gov/~mow/chap15.html)

# WANTED

**STAINED OR ALIVE**



## **Cocci Convicts**

**AKA:** *Staphylococcus aureus*

**Gram Stain:** Positive

**Shape:** round - coccus

*Staph* bacteria are very common on the skin of most animals including humans. The bacteria can, in rare instances, be very dangerous when ingested. Food poisoning can result of the bacteria were allowed to multiply and produce toxins on handled food before eating. Foods commonly contaminated in the United States include turkey, ham, processed meats, chicken salad, pastries, and ice cream in which *Staph* has grown. Infection is characterized by sudden nausea, vomiting, diarrhea, and often shock within a few hours of eating contaminated food. Usually other bacteria in the body help to keep *staph* at bay, but if something happens to upset this balance, such as the introduction of massive doses of antibiotics, infection can occur with fatal results.

**For more information on this and other disease-causing microbes, check out the following sites:**

[www.cdc.gov/ncidod/dbmd/diseaseinfo/](http://www.cdc.gov/ncidod/dbmd/diseaseinfo/)

[www.cfsan.fda.gov/~mow/chap3.html](http://www.cfsan.fda.gov/~mow/chap3.html)

## Poisoned Picnic Explanation

The culprit in this epidemic is actually a contaminated food item, the Green Bean Casserole. The contaminant is *Clostridium botulinum*. The toxin produced by this organism is one of the most toxic substances known. It is, however, easily destroyed by heating. In order for students to identify the correct food item and identify the correct toxin, they must piece together clues from a variety of sources.

The opening information states that there was only one serving spoon when the teachers began going through the line. Also, the first person through the line had green bean casserole. That person was one of the four fatalities. The next person through the line was also a fatality. This person did not eat green bean casserole. But the toxin was on the serving spoon after being used for the casserole and then for the potato salad. The second person through the line got it from the spoon! After this, the other serving spoons arrived and the cross contamination soon ended.

Students should realize that everyone that had the green bean casserole contracted the illness. Two people became ill, one of whom died, and did not have the green bean casserole. The second person through the line, as stated above, contracted the disease from the serving spoon. The other person was lactose intolerant and became ill because of the pudding, which was made with milk.

Students should also use the wanted posters to link the symptoms of the disease to botulism. From this and other research, students should see that botulism can come from improperly canned vegetables. The menu states that the green bean casserole was made using canned green beans. Botulism is easily destroyed by high heat. However, the menu also states that the casserole was only heated to warm. This would not have provided enough heat to destroy the toxin.

In addition to identifying the cause of the disease, students were also to outline a strategy to prevent future outbreaks of the disease. Since this outbreak was due to food poisoning, students should attempt to educate the public about proper food handling techniques. For this specific contaminant, information should include inspection of canned foods for bulges (a result of gas buildup from growth of the bacteria) and also stress the importance of sufficient heat to destroy the toxin.

Other general information should include cleanliness in food preparation areas, washing of hands, and the use of clean utensils in food preparation. This information could be presented in the form of a brochure or a skit that would be broadcast on local television or radio stations.

Correct identification of the organism and food source along with a logical and appropriate strategy for prevention of food poisoning should result in a maximum score in evaluation of student work.