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# microBYTES™

A Hardy Diagnostics eNewsletter



August, 2015

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*Ever wonder what  
Hardy Diagnostics  
is all about?*



[View](#) our Company  
Profile here.

\* \* \*

*Pharmaceutical*

## *Micro Musings...*



*"I know it seems a little over the top, but Weston  
has never taken any sick time."*

## *Fungal creations...*

**Enjoy some  
of nature's art**

# Microbiology



Do you do sterility testing and membrane filtration? We have prepared a mini catalog just for you.

View on your computer.

Request a paper version.

Watch a short video demonstrating the filter membrane procedure.

\* \* \*

## The Petri Porter



Hardy's Petri Porter will conveniently transport up to 60



**What created this beautiful pattern?**  
**Find out about spalting.**

## Legionella Strikes Twice

*There have been two major outbreaks of Legionnaires' disease in August.*

At the beginning of August this year, New York City experienced the worst outbreak of Legionnaires disease in the city's history. More than 120 people were sickened and the lives of 12 were claimed by the *Legionella* bacteria.

*Legionella* bacteria is a common inhabitant of pond water, wells, rivers, hot tubs, and plumbing systems. The recent outbreak was caused by contaminated water generated by an air conditioning cooling tower at a hotel. *Legionella* is not spread by person-to-person contact. People were infected by breathing the mist emitted from the air conditioning vents.

Symptoms of Legionnaires' disease typically include high fever, chills and a cough, which can lead to a full blown case of pneumonia.

Consequently, the New York City Council passed



standard Petri plates to and from your incubator or refrigerator to the benchtop.

[Learn](#) more...

\* \* \*

## Brainteasers



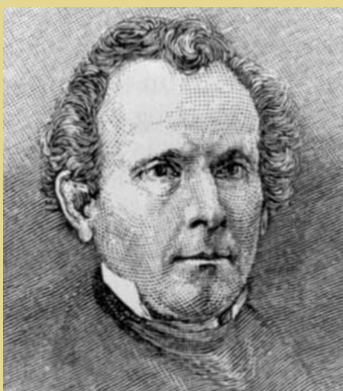
Cranial aerobics are good for you.

Feel the pain and get the gain [here](#).

## Phraseology

### "Graham Cracker"

The Reverend Sylvester Graham, a Presbyterian minister, was an avid promoter of veganism and healthy living.



In 1829, he invented graham bread, which was made from unsifted flour

legislation that would require building owners to conduct quarterly inspections of cooling towers, among other new measures. They had two weeks to comply.



Preliminary testing showed that 20 cooling towers out of more than 135 have been found to contain the *Legionella* bacteria.

Then, on the heels of the New York outbreak, it was reported that seven prison inmates at the San Quentin prison in California fell ill due to *Legionella* bacteria.

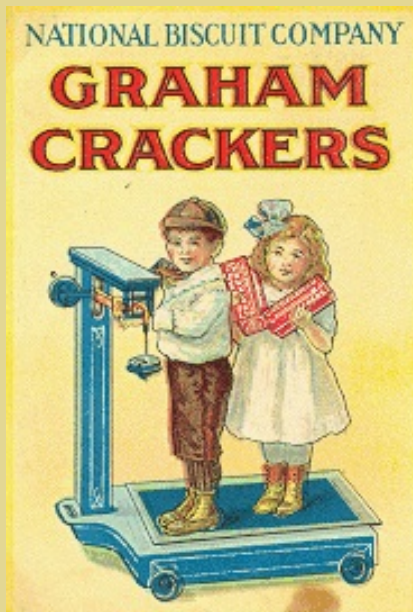


Prison officials immediately shut down the water system, brought in portable toilets, bottled water and large water tanks to serve thousands of inmates and employees. All cooking has ceased and the inmates are being served boxed meals. The investigation is ongoing.

Below are the products that Hardy Diagnostics offers for the detection and identification of *Legionella*.

and free from chemical additives such as alum and chlorine.

Graham argued that chemical additives in bread made it unwholesome. The use of additives by bakeries was a common practice during the Industrial Revolution to make bread whiter in color, and more commercially appealing.



Darker wheat bread was considered the fare of the lower classes. White bread was a status symbol of the middle class because of its "purity and refinement" in its color and was purchased, rather than home-made.

Graham believed that firm bread made of coarsely ground whole-wheat flour was more nutritious and healthy.

Graham's doctrines found

- BCYE Agar, [G07](#)
- BCYE Selective Agar, [G08](#)
- BCYE Selective Agar for Environmental Use, [W169](#)
- BCYE Agar Contact Plate, [P251](#)
- Legionella Slide Agglutination Test Kit, [M45](#)
- Legionella Antisera by Denke Seiken - [See online catalog](#)
- Legionella Control Organisms, MBL - [See online catalog](#)
- Legionella Urine Detection Kit, NOW, [852000](#)
- Legionella DFA and Latex Kits by Prolab - [See online catalog](#)



*Legionella colonies on Hardy's BCYE Agar.*

[See our Instructions for Use for Legionella media.](#)

\* \* \*

*Optical oddities...*

later followers in the persons of Dr. John Harvey Kellogg and his brother Will Keith Kellogg. Their invention of corn flakes was a logical extension of the Grahamite (as Graham's followers were called) approach to nutrition.

\* \* \*

*Easy ID...*

## StrepPRO



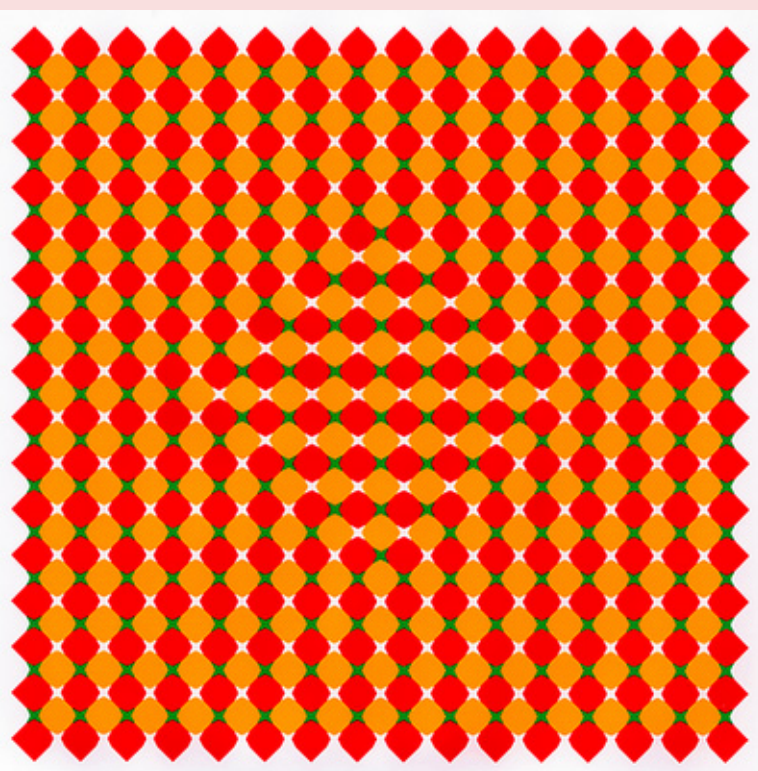
With StrepPRO you can easily identify Strep Groups A, B, C, D, F, and G within a few minutes. Easy to read results with no cross reactivity.

View a short video that explains how easy it is.

Order the kit. Components may also be ordered individually.

\* \* \*

*All formats available...*



## The Bouncing Tomatoes

To make them bounce, point your nose at the center and make some circles with your head. First, make sure no one is watching you!

*"Believe half of what you see  
and none of what you hear."  
~ Marvin Gaye ~*

## Monitoring Toilets and Cell Phones

*These two new  
unconventional surveillance methods  
are helping epidemiologists control  
global disease.*

Many infectious diseases such as influenza, rubella, and measles are driven by human population dynamics. Given that the human population is increasing, etiological agents of diseases are



# Control Organisms



Hardy offers a complete selection of microorganisms for your QC program. These MBL organisms are licensed derivatives from ATCC. They are available in the swab or pellet format; qualitative or quantitative. Order from Hardy for immediate service and delivery.

[View](#) the entire catalog online.

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*For growth promotion studies...*

infecting at a corresponding rate as well. In addition, the current method of disease surveillance relies heavily on reports produced by physicians or other health professionals who screen infected patients (Gibbons, 2014). These reports are of limited value regarding prevention, since they arrive long after infection has occurred.

Fortunately, research scientists are staying ahead of the curve by using what some may consider unconventional methods -- tracking cell phone global positioning (GPS) data and transportation toilet waste to predict disease patterns. While it may seem like studying cell phone data and screening toilet waste for beta-lactam resistant bacteria using regular surveillance methods are two very different things, the concept behind both methods is the same.

Both methods study an aspect of human population dynamics: human travel. For example, toilet waste on an airplane, train, or cruise ship can tell researchers a lot about what pathogenic bacteria human hosts are carrying and where they are transporting the bugs. Likewise, cell phones can show human mobility data on travel. When paralleled with the incidence of rubella in Kenya, cell phone tracking data matched patterns of rubella outbreaks (Wesolowski, 2015).

# EZ Accushot

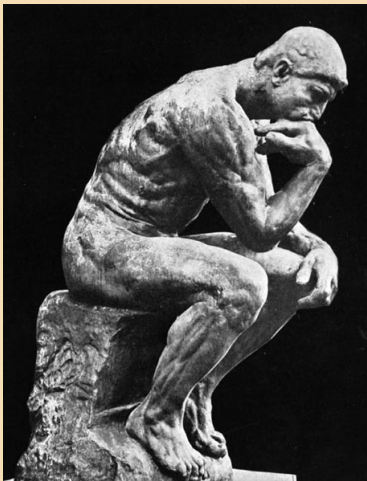


Do you perform growth promotion studies in your lab? If you do, you will want to try out MBL's EZ Accushot. It provides a known number of bacteria for your growth promotion verification at a reasonable price!

View a short video that explains the advantages.

See the brochure.

## *Think about it...*



\* Since light travels faster



Kenya was a good place to start since 93% of households own a cell phone. Researchers at Princeton and Harvard Universities compared datasets on rubella incidence in Kenya and cell phone data usage for over 15 million anonymous cell phone subscribers for one year, from June 2008 to June 2009. Tracking cell phones allowed researchers to record travel between different Kenyan provinces and view the daily location of each user.

Interestingly, seasonal human travel was highly correlated with seasonal patterns of rubella. University researchers concluded that rubella incidence more commonly occur when children begin to attend school at the end of summer and when children resume school after major holidays. The researchers of the study expressed confidence that tracking cell phone data usage will be a great tool for exploring wide-scale human travel within countries, and may lead to providing effective localized treatment (Wesolowski, 2015). Furthermore, the researchers at Princeton and Harvard hope to expand their study to other diseases driven by population dynamics, such as malaria and cholera.

In a similar fashion, airplane toilet waste is being

than sound, isn't that why some people appear bright until you hear them speak?

\* Why do banks charge you a "non-sufficient funds fee" on money they already know you don't have?

\* Why do you press harder on a remote control when you know the battery is dead?

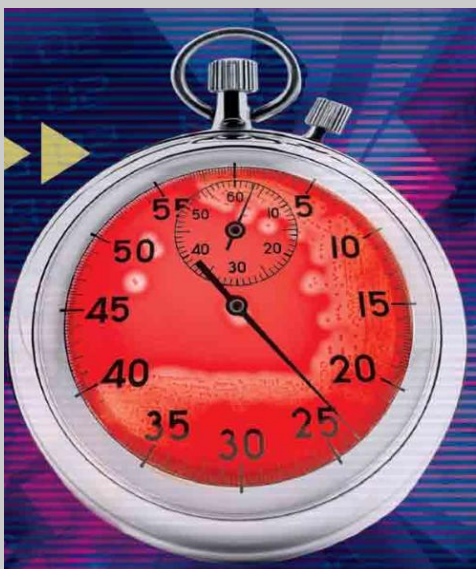
\* Should you trust a stockbroker who's married to a travel agent?

\* Do married people live longer than single people, or does it just SEEM longer?

\* \* \*

Save time and money...

## Rapid Test Kits



Want to learn how to speed

used as a method of disease surveillance.

Researchers at the National Food Institute, Technical University of Denmark, and DTU Systems Biology conducted a study using septic tanks from 18 aircrafts used for international travel.



Using meta-genomic analysis, the group of researchers generated data using all known antibiotic resistance genes. Moreover, it was found that genes for resistance to beta-lactams, tetracycline, and macrolides were the most common in all the septic tank samples tested (Peterson, 2014).

Furthermore, the study discovered geographical differences in the samples. For example, samples from South Asia and North Asia showed variation in resistance genes detected when compared to one another and when compared to North America. North America showed the greatest abundance of *Clostridium difficile*. Additionally, the composition of particular microorganisms also varied between continents. For example, South Asia had the least amount of *Clostridium* species when compared to both North Asia and North America, yet it had the highest incidence of *Salmonella enterica* (Peterson, 2014). While cell phone data may provide information about disease in a particular country, toilet waste can reveal information about



up your identifications?

Hardy offers a 17 page booklet on how to identify bacteria using rapid test methods.

[View](#) the booklet online.

[Request](#) a paper version.

disease transmission on a global scale.

In the near future, these new, and perhaps unconventional, methods of disease surveillance may bring advantages to predicting disease and antibiotic resistance patterns when combined with traditional culture based methods.

*By Nasim Delavari*  
*R&D Microbiologist at Hardy Diagnostics*

*Wisdom to ponder...*



## Lao Tzu

*Chinese philosopher and poet  
from the 5th or 6th century  
B.C.*

"The journey of a thousand  
miles begins with one step."

"If you do not change direction,  
you may end up where you are  
heading."

"Mastering others is strength.  
Mastering yourself is true  
power."

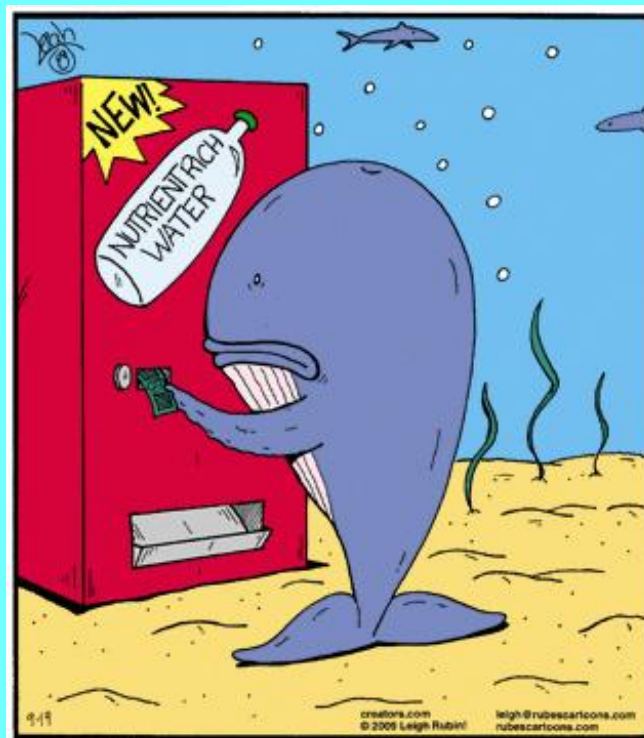
"To the mind that is still, the  
whole universe surrenders."

### References:

Gibbons, C. L., et al. Burden of Communicable diseases in Europe (BCoDE) consortium. Measuring underreporting and under-ascertainment in infectious disease datasets: a comparison of methods. BMC Public Health 2014; 14: 147 (2014).  
Wesolowski, A., et al. Proceedings of the National Academy of Sciences. Quantifying seasonal population fluxes driving rubella transmission dynamics using mobile phone data. (2015).  
Peterson, T.N. et al. Scientific Reports. Meta-genomic analysis of toilet waste from long distance flights; a step towards global surveillance of infectious diseases and antimicrobial resistance. 5: 11444 (2015)

\* \* \*

## RUBES



If whales were as gullible as people

"Anticipate the difficult by managing the easy."

"An ant on the move does more than a dozing ox."

"He who knows, does not speak. He who speaks, does not know."

"Violence, even well intentioned, always rebounds upon oneself."

"He who obtains has little. He who scatters has much."

"If you would take, you must first give, this is the beginning of intelligence."

"Great indeed is the sublimity of the Creative, to which all beings owe their beginning and which permeates all heaven."

\* \* \* \*

**I hate Russian dolls**



**They are so full of themselves.**

[Find more](#)

of Leigh Rubin's cartoon humor.

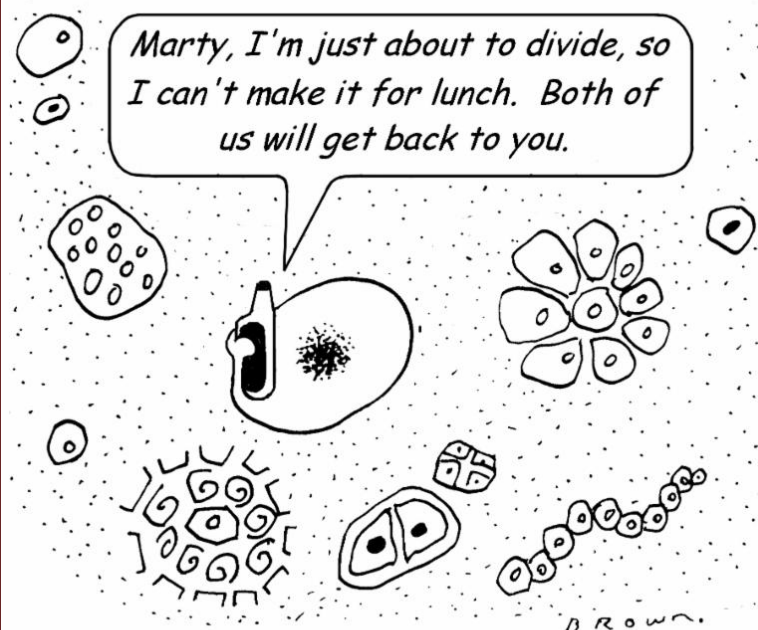
Want to [book Leigh](#) as a speaker at your next event?

*You can't take it with you...*



*There is no trailer hitch on a hearse.*

## Mitotic Lunch Dates



**THE CELLULAR PHONE**

Want to receive the MicroBytes  
Newsletter at home?

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Want to view past issues  
of MicroBytes?

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## Did you know?



## Hardy Diagnostics...

- Manufactures over 2,700 microbiology products for you to choose from.
- Stocks over 13,000 laboratory products to increase your selection.
- Is celebrating its 35th year of serving microbiologists.
- Maintains nine distribution centers in the U.S. for faster turn around time to your lab.
- Is ISO 13485 certified for the manufacture of medical devices to give you confidence in our products.

Warning:

# Pun Zone Ahead



- A Local Area Network in Australia is the LAN down under.
- Did you hear about the short fortune teller who escaped from prison? He was a small medium at large.
- When a clock is hungry it goes back four seconds.
- A chicken crossing the road is poultry in motion.
- A backwards poet writes inverse.

*"I'm happy when it rains..."*



- Offers you detailed technical inserts, comprised of over 4,500 pages of information regarding microbiology.
- Services over 10,000 labs and maintains a worldwide network of over 65 distributors.
- Is an Employee-Owned company. *"If we act like we own the place...it's because we do!"*

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*because when I'm sad  
it rains anyway."*

*Do you perform plate counts?*

## Compact Dry



*If you do plate counts  
you won't want to miss  
this short video!*

Watch a short video to  
find out how easy it is...

See the brochure.

*Online Ordering Made Easy!*



Watch a short video  
to learn how easy it is  
to order from Hardy on-line!

*Pick. Click. You're Done!*

\* \* \*