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microBYTES™

A Hardy Diagnostics eNewsletter



August, 2018

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Micro Musings...



For the detection
of Group B Strep...

Carrot Broth One-Step



*Stool cultures with no
interference from Proteus!*

HardyCHROM SS NoPRO





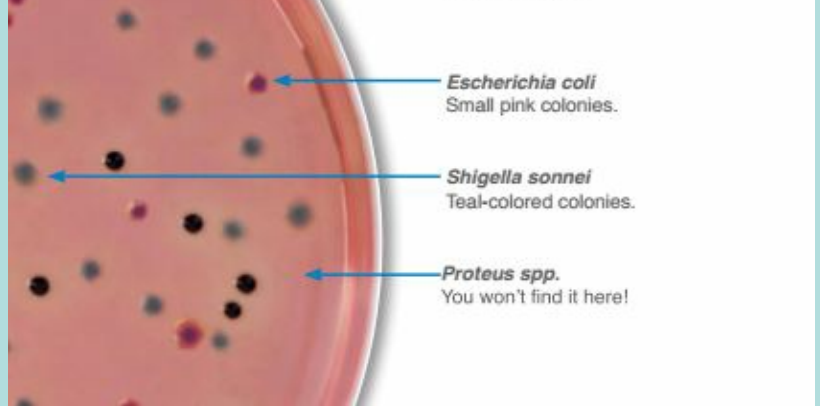
- Improved...No tile addition needed!
- Detects hemolytic Group B Strep from the initial broth culture
- Provides results in as little as sixteen hours
- Found to be 100% sensitive and up to 100% specific in a recent study

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* * *



NOTE: New study shows **50% less in colony work-ups**, for an overall **cost saving of 80% !**
[Find out how you can save also...](#)

- Reduces costly false-positive work-ups, due to *Proteus* spp.!
- Less colony picking, subculturing, and identifications
- No need for TSI, LIA, or KIA tubes
- Reduces use of expensive ID cards
- Reduces the number of plates for primary stool setup
- Increased specificity
- Easy Identification by patented chromogenic reaction
- The only chromogenic media that will detect both *Salmonella* and *Shigella*

[Learn more about HardyCHROM SS NoPRO](#)

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* * * * *

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No Stress!
No Inconsistencies!



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Antibiotic Resistance in Vietnam

Antibiotic resistance is of widespread concern and is particularly critical in developing countries, like Vietnam, where there is a higher burden of infectious disease. In these countries, the cost of new and improved antibiotics can be insurmountable, leading to the use of outdated and ineffective antibiotics. Furthermore, self-diagnosis and self-treatment can lead to antibiotic resistance and an increase in the prevalence of infectious disease. In concert, these effects have undoubtedly changed the health-care landscape.

Did you know that Hardy was the first company to introduce Chromogenic media to America in 1996? Hardy has been the leader in the field of easy identification by color ever since.



HardyCHROM MRSA, Cat no. G307

[See](#) our complete Chromogenic product offering.

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* * * * *

Trio Bas Air Samplers



Two heads are better than one!

These efforts have undoubtedly changed the health care landscape of Vietnam.



A worrisome issue in Vietnam is the economic situation pertaining to the development, sale, and purchase of antibiotics. In 2013, the average per capita income was \$1,910 per year and 8.4% of the roughly 91.7 million people living in Vietnam were living below the national poverty line. These poor economic conditions have led to patients, physicians, clinics, hospitals, and retailers becoming more concerned with saving money or making a profit rather than considering the negative impacts of their antibiotic use on others.

As a result, about 80% of antibiotics used in Vietnam are sold without a prescription which has led to a widespread problem of misuse of antibiotics.

Even though prescriptions are legally required, the lack of enforcement allows consumers to purchase a plethora of antibiotics at pharmacies or drug outlets without a prescription.

Vietnamese citizens commonly self-diagnose illness with low accuracy, and then self-treat with over-the-counter antibiotics. Individuals are engaging in this practice because it is much cheaper and faster than seeing a professional. The self-treatment of illnesses is especially dangerous because using an ineffective or partially effective antibiotic can apply a strong selective pressure for antibiotic-resistant bacteria. Although clinicians on occasion may misprescribe their patients, they are much more informed and must control antibiotic dosing regimens to reverse this resistance trend.

In 1986, Vietnam imposed "doi moi" reforms, which were a series of economic reforms with the goal of creating a "socialist-oriented market economy." These reforms have helped increase family income and life expectancy while decreasing childhood mortality rates and improving access to health care. Although these reforms seem beneficial at first, upon closer examination there are some faults. With increased access to health care comes an increased access to antibiotics, which in turn can lead to an increase in resistance to antibiotics when misused. Vietnam has a troubling prevalence of penicillin-resistant (71.4% of isolates) and erythromycin-resistant (92.1% of isolates)

Streptococcus pneumoniae, a common agent of respiratory infections. Between the early and late 1990s, penicillin-resistance in *S. pneumoniae* isolates increased by over 45%. Due to such high resistance rates, recommended treatment regimens are likely to be ineffective and jeopardize the overall success of antibiotic treatment.

Now with Bluetooth capability!

Trio Bas from Orum International has a robust impact air sampler for every type of use. Single, double, or triple heads are available from Hardy Diagnostics.

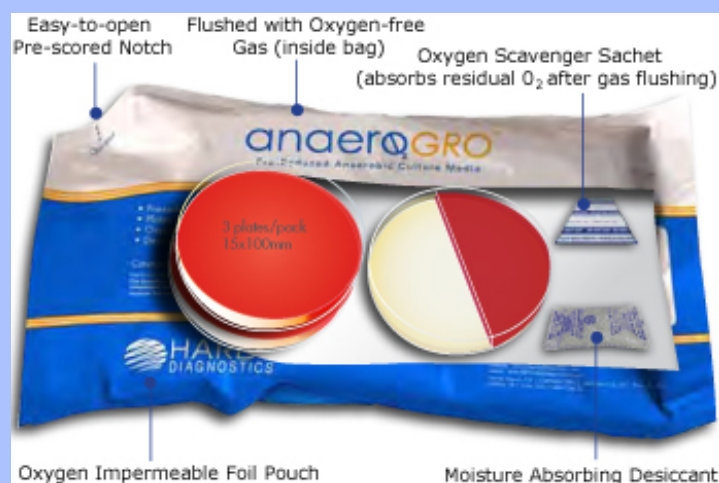
- [Watch a short video](#) that will explain why the Trio Bas is the best choice for your clean room.
- [See the complete Trio Bas catalog.](#)
- [Please have a sales rep contact me about air samplers.](#)

Testimonial from a Pharmaceutical Lab worker...

"The two heads of TRIO BAS DUO air sampler was one of the best investments during the last two years. The laboratory staff responsible of the bacteriological sampling is able to double the number of environmental microbial cycles per day. This means more efficiency and lower cost, together with the possibility to increase in the future the number of sampling in other areas of the premises."

For the reliable recovery of anaerobes...

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Pre-Reduced Anaerobic Culture Media



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[View](#) the anaerobic bacteriology catalog.

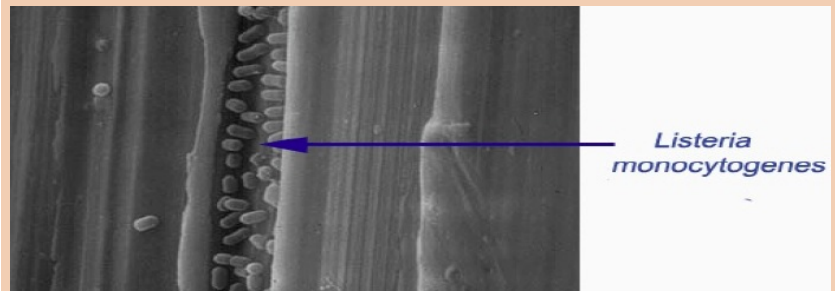
[Request](#) samples of anaeroGRO.

* * * * *

Can Ordinary Cooking Oil Prevent Food-borne Illness?

Vegetable oils were found to prevent biofilm formation on cooking utensils.

Scientists at the University of Toronto have developed a simple method for prevent pathogenic bacteria from thriving on the surface of cooking utensils.



Electron micrograph showing how dangerous bacterial biofilms can form within the rough surfaces of stainless steel cooking equipment.

Food-borne illnesses can be very dangerous especially for those who are immuno-suppressed such as children and the elderly. The CDC estimates that in the United States 48 million people get sick, 128,000 are hospitalized, and 3,000 die each year from food-borne illnesses. One of the many causes of food-borne illnesses is cross-contamination during food processing. This type of contamination is due to biofilm formation on food-processing equipment and it is a growing concern for large industrial food-processing facilities. It is not uncommon to have food-borne illness outbreaks and recalls due to contamination from bacteria such as *Salmonella* spp., *E. coli* and *Listeria* spp. What is most interesting is how biofilm formation takes place on food-processing surfaces.

Food processing and handling equipment are commonly made from stainless steel. Over time, minute indentations

Many organizations are aiming to enact regulations and procedures for controlling this issue of antibiotic resistance including the Global Antibiotic Resistance Partnership (GARP) in Vietnam, the American Society for Microbiology (ASM) and Vietnam's Antimicrobial Resistance (AMR) National Action Plan. Some proposed policy options include enforcing the current law that antibiotics must be offered by prescription use only, establishing infection-control committees in hospitals, developing national testing centers to track antibiotic resistance, monitoring antibiotic use in hospitals, properly teaching and training professionals on antibiotic resistance and appropriate antibiotic use, and developing standardized treatment guidelines.

What can you do to help? **Spread the word:** antibiotic resistance isn't just a threat to developing countries, it affects all of us. **Educate yourself:** following microbial resistance news and outbreaks is extremely beneficial to maintaining knowledge on this issue. **Support research:** The Community for Open Antimicrobial Drug Discovery (CO-ADD) accepts donations to aid in the discovery of new antibiotics used to combat the organisms resistant to current antibiotics. The Antibiotic Resistance Action Center (ARAC) at the Milken Institute of Public Health at George Washington University accepts donations to fund research, foster strategic communications, and impose policies pertaining to solutions for fighting antibiotic resistance. There's no denying that antibiotic resistance is an ominous threat to mankind. A global effort is vital in order to preserve human prosperity. Do what you can to get involved in this fight against super-bugs!

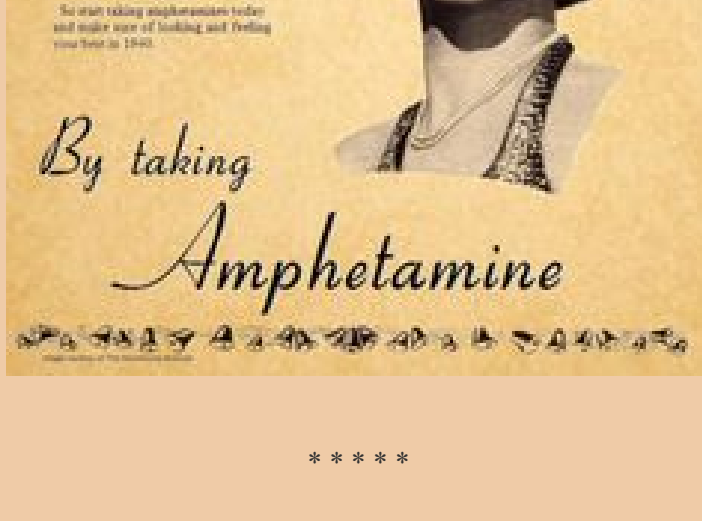
by Dylan Campbell
R&D Microbiologist
HARDY DIAGNOSTICS

Reference [1](#), [2](#), [3](#)

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Strange ads from the past...

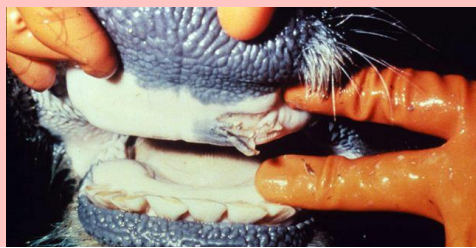




Phraseology...

"Foot in Mouth"

This phrase, which dates from the 1870s, is probably a reference to foot-and-mouth disease, a potentially deadly RNA virus (picornavirus) found in cattle and other cloven hoofed animals, which causes blisters to form in the mouth and on the feet. Farmers will usually sacrifice the animal in order to prevent the spread of the virus to others. Humans are rarely afflicted. The name of the disease was then applied metaphorically to refer to humans whose verbal utterances got them in trouble.

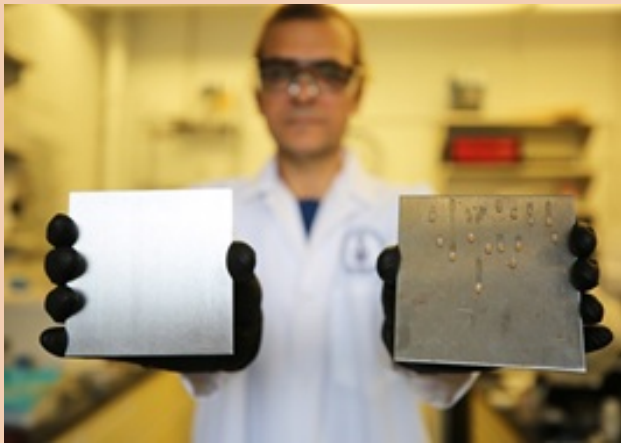


In addition to the expression "put one's foot in one's mouth," other variations of

made from stainless steel. Over time, minute indentations, scratches and pits form on stainless steel surfaces which lead to an increase in surface roughness and surface area. These microscopic cavities are perfect hiding places for bacteria. During food processing, the adherence of food residue on stainless steel surfaces enable bacterial attachment and biofilm formation. It can be very challenging to clean and disinfect surfaces that have high surface roughness as biofilms can be well protected from the reach of cleaning agents. Furthermore, some chemical-based cleaning agents can cause corrosion of stainless steel which can actually lead to an increase in bacterial adherence. Because cleaning food-processing surfaces can be quite challenging, prevention of biofilm formation is a worthwhile endeavor.

A team of researchers at the University of Toronto developed a simple, economical, and food safe treatment for stainless steel surfaces called Food-safe Oil-based Slippery Coatings

(FOSCs). This method involves coating stainless steel surfaces with cooking oil (such as olive, corn or canola) which reduces surface roughness and surface area by trapping the cooking oil in the microscopic cavities. The hydrophobic layer repels bacterial adherence and thus prevents biofilm formation. The FOSCs method resulted in a 1,000X reduction in bacterial levels. Another advantage of FOSCs was the easy removal of bacterial cells with conventional detergent cleaning. Even after washing, the anti-biofilm activity continued as residual oil in the cavity defects continued to block biofilm formation. The photo below shows a stainless steel surface treated to trap cooking oil on the left and an uncoated surface which has the potential to grow foodborne pathogens on the right.



The FOSCs approach is based on the Slippery Liquid-Infused Porous Surfaces (SLIPS) principle that was developed at Harvard to create slippery and non-adhesive surfaces by trapping lubricants on the surface of the material. However, FOSCs is still novel as it is the first example of food-safe SLIPS for food-processing surfaces.



A ruptured oral blister in a diseased cow.

the phrase include "every time he opens his mouth, he puts his foot in it" and "to put one's foot in it." The term "foot-and-mouth disease" can also be used to refer to someone who is especially gaffe-prone, and says things that are later regretted.

* * * * *

What is Hardy all about?

[View a short video to find out...](#)



* * *

The FOSCS method shows great promise to be a simple and low-cost option for increasing sanitation of food-processing equipment. Furthermore, it is a safe approach as it uses cooking oils instead of harsh chemicals. Although more work is still needed before this can be implemented on a large scale, it would be a great benefit for everyone, both in developed and developing countries, as it has the potential to decrease the risk of cross-contamination consequently reducing the chance of food-borne illnesses.

The researchers at the University of Toronto will continue to test more food-safe oils with varying viscosity ratios in order to achieve greater performance against biofilm formations on food-processing surfaces. It is amazing when a simple and nontoxic ingredient such as cooking oil can be so effective at preventing the dangerous consequences of bacterial pathogens.

By Sonia Martinez
Technical Support representative
HARDY DIAGNOSTICS

Reference [1](#), [2](#), [3](#), [4](#)

* * * * *

Brainteasers



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Learn about all the innovative
Hardy products
to help you save time and money!

Optical oddities...



Looks like a spiral?
Look again

Look again.

"Believe half of what you see
and none of what you hear."
~ Benjamin Franklin ~

YouTube

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Plazomicin now available!

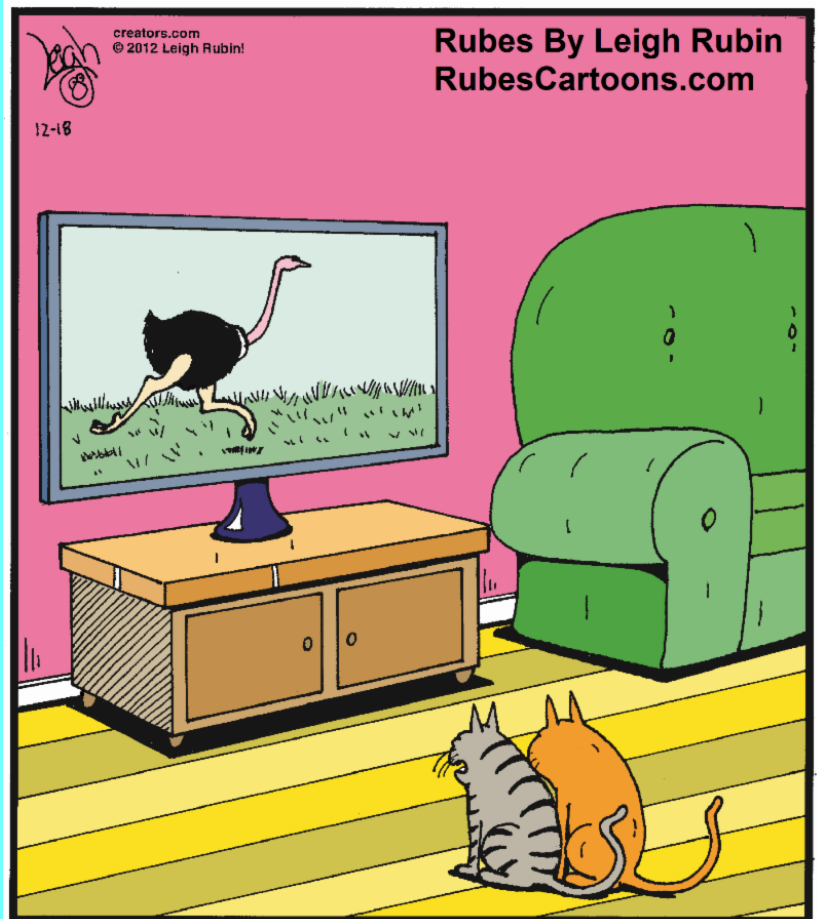
New Antibiotics

Now Available from Hardy



- Plazomicin, "Zemdri" (Z9331)
- Ceftazidime/Avibactam, "Avycaz" (Z9351, Z9355)
- Ceftolozane/Tazobactam, "Zerbaxa" (Z9341, Z9345)
- Delafloxacin, "Baxdela" (Z9301, Z9305)
- Meropenem/Vaborbactam, "Vabomere" (Z9321, Z9325)

RUBES



"A plump, juicy, flightless bird, yet one that weighs three hundred pounds and possesses long, sharp claws that can tear you in two ... Oh, the cruel irony."

[Find more](#)

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

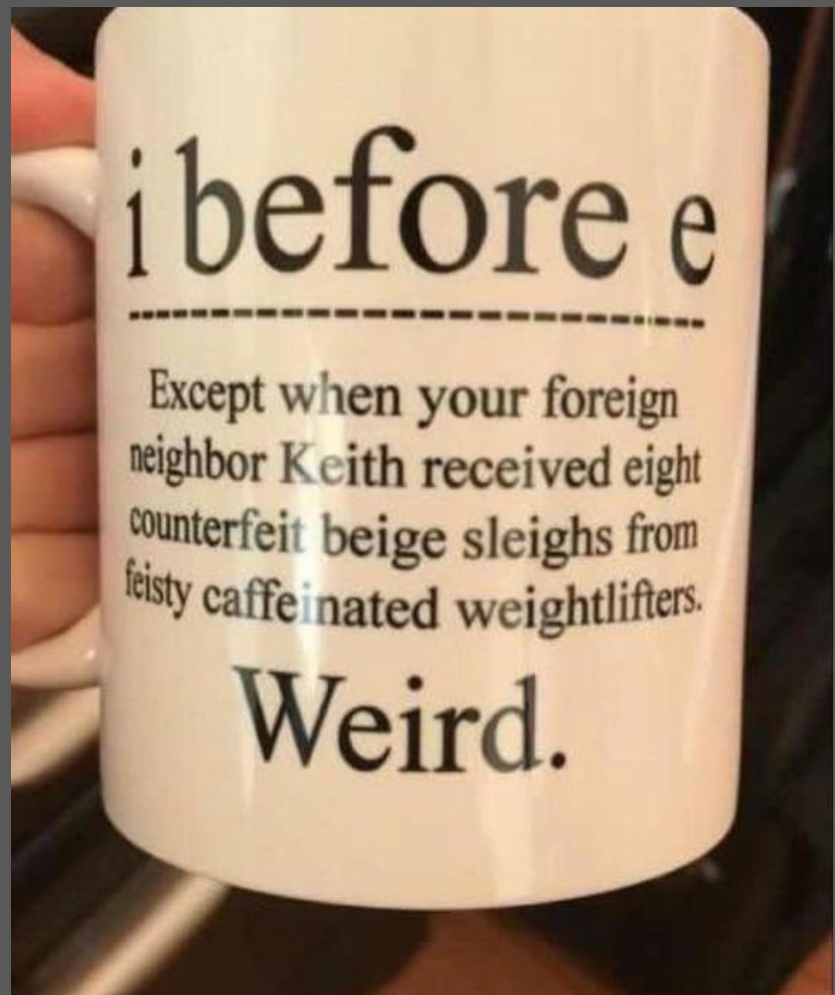
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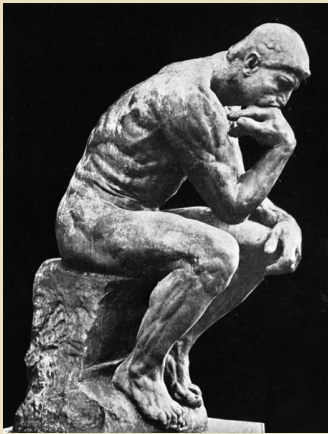
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The English language proves
that rules were made to be broken.

* * *

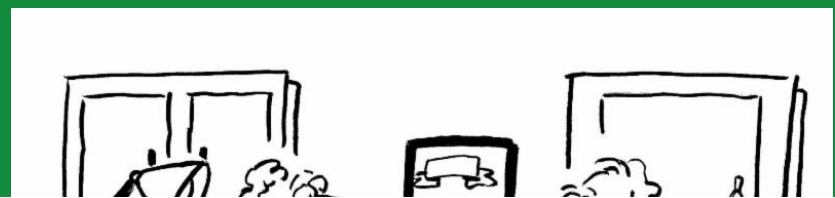
Think about it...

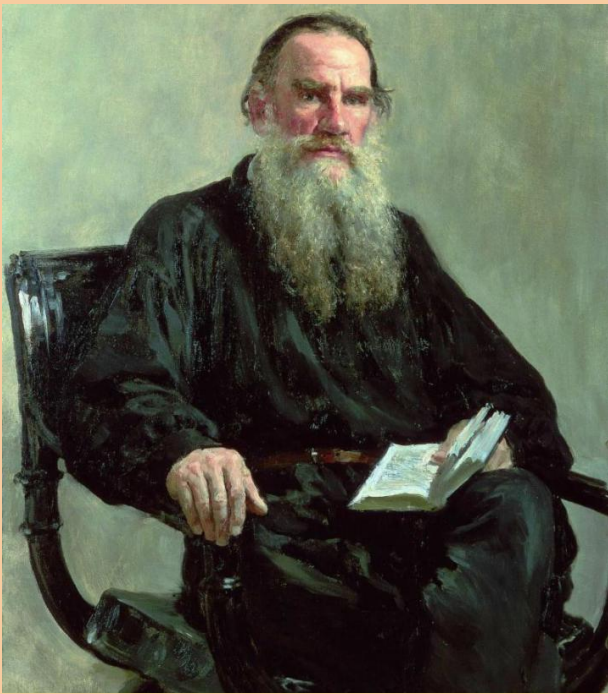


- If pushing the elevator button more than once doesn't make it arrive faster, then why do we do it?
- Why doesn't glue stick to the inside of the bottle?
- All of us could take a lesson from the weather. It pays no attention to criticism.
- When I was young we used to go "skinny dipping," now I just "chunky dunk."

* * *

Wisdom to Ponder...





Leo Tolstoy
1828 ~ 1910

Russian author regarded as one of the greatest writers of all time. Known for writing "Anna Karenina" and "War and Peace."

"Everyone thinks of changing the world, but no one thinks of changing himself."

"Historians are like deaf people who go on answering questions that no one has asked them."

"In the name of God, stop a moment, cease your work, look around you."

"We must not only cease our present desire for the growth of the state, but we must desire its decrease, its weakening."

"If you look for perfection, you'll never be content."

"Music is the shorthand of emotion."

"We can know only that we know nothing. And that is the highest degree of human wisdom."

"Wrong does not cease to be wrong because the majority share in it."

"True life is lived when tiny changes occur."



"This test is to see if we need to do more tests."

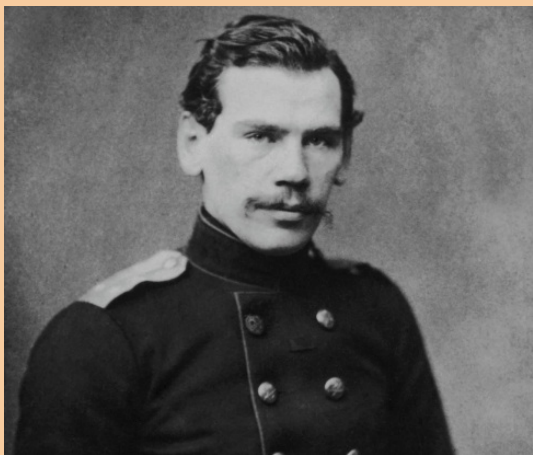
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Warning:
PUN ZONE
AHEAD



"Everything I know, I know because of love."

"To tell the truth is very difficult, and young people are rarely capable of it."



* * *



* I'd tell you a chemistry joke, but I know I wouldn't get a reaction.

* I went to play with my boomerang, but forgot how...
Then it came back to me.

* I wasn't originally going to get a brain transplant, but then I changed my mind.

* Why don't some couples go to the gym?
Because some relationships just don't work out.

* I used to be a banker, but then I lost interest.

#

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Watch a short video
to learn how easy it is
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* * *

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- Stocks over [13,000 laboratory products](#) for your "one stop shop" experience.
- Is celebrating its 38th year of serving microbiologists.
- Manufactures from two ISO certified factories; one in California and one in Ohio.
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- Is a [100% Employee-Owned](#) company. *"If we act like we own the place...it's because we do!"*



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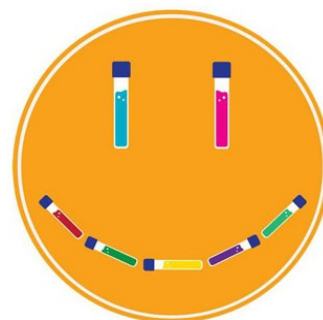


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*I wish there was a restaurant named
"I don't care," then I would finally know where
my girlfriend would like to go.*



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Fun with numbers...

Q: What did the zero
say to the eight?

0 8

A: Nice belt!

Q: Why was the 6 afraid of the 7?

A: Because 7, 8, 9

#

"As Hardy Diagnostics enters its 38th year of serving microbiologists in the laboratory, I would like to thank each of our customers for their support and loyalty. It truly has been a pleasure to serve you!

If there is any way we can improve or expand upon our service, would you please let me know?"

Jay Hardy, CLS, SM(NRCM)
President
HARDY DIAGNOSTICS

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amazon



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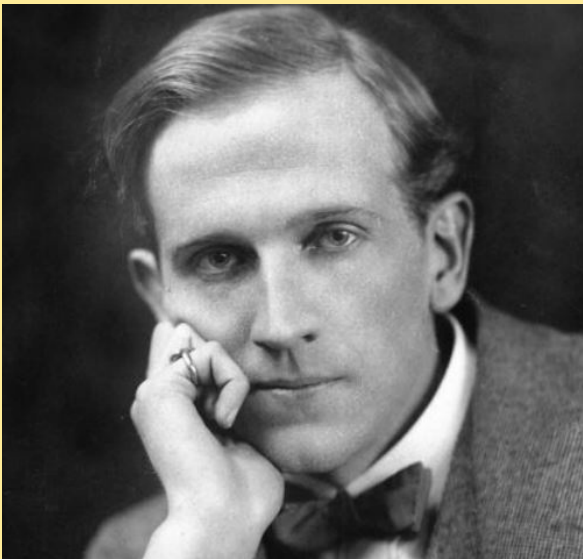


[Discover some of them here...](#)

"If I were two faced....
Would I be wearing this one?"

Abraham Lincoln

#



"People say nothing is impossible,
but I do nothing every day."

A.A. Milne, creator of Winnie-the-Pooh

#

