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microBYTES™

A Hardy Diagnostics eNewsletter



September, 2016

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*Interference from
Proteus eliminated!...*

Spending too
much time with
stool cultures?

Micro Musings...

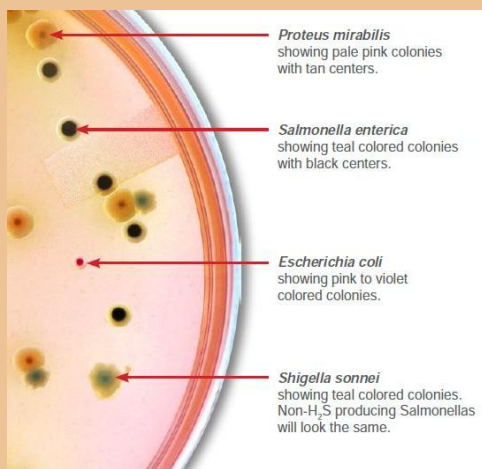


"...but on the other hand, Johnson never takes a sick day."

A sweet remedy to stubborn infections....

Manuka Honey

Human use of honey as both food and medicine can be traced to 7,000 BC as depicted by Cave paintings in Spain



Hardy's unique chromogenic plate will readily differentiate *Salmonella* from *Shigella*, and eliminate *Proteus* altogether! Your day is busy enough...stop wasting time needlessly working up *Proteus*!

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[Send me](#) samples so I can see for myself.

* * *

The GramPRO 1

Gram Stains... Consistent and Fast



exhibiting the earliest records of beekeeping. The ancient Greeks viewed honey not only as a food, but also a healing medicine. Recently, over the past 20 years, honey has found a place in modern medicine following several laboratory and clinical investigations showing its inhibitory effects on roughly 60 species of bacteria, and several species of fungi and viruses. Researchers have also found that the honey from bees that pollinate the flowering Manuka bush growing in Australia and New Zealand has bacteriostatic or bactericidal properties that could possibly be an effective treatment against methicillin-resistant *Staphylococcus aureus* (MRSA), among other difficult to treat infections.



The composition of honey is very complex, and its components vary depending on the flowers that bees feed on. Almost all natural honey contains flavonoids (such as quercetin, apigenin, pinocembrin, kaempferol, hesperetin, galangin, and chrysin). It contains phenolic acids (such as caffeic, p-coumaric, ellagic, and ferulic acids), ascorbic acid, tocopherols, catalase, superoxide dismutase, hydrogen peroxide, reduced glutathione, Millard reaction products and peptides. Many of these compounds work synergistically to provide antioxidant effects. In Manuka honey, one component, methylglyoxal which is considered highly cytotoxic, is thought to work synergistically with other components in honey to produce an effective bactericide. In one case, a young boy received a knee amputation due to infection from *Pseudomonas* spp. and *Staphylococcus* spp., and he was non-responsive to conventional treatment. He fully recovered in 10 weeks after applications of sterilized active Manuka honey dressing pads (1).

Currently, combinations of two or three antimicrobials are necessary to fully treat *Helicobacter pylori*, an infection that can cause ulcers and/or inflammation in the stomach or small intestine. Several studies show that Manuka honey can inhibit or kill pathogenic bacteria such as *H. pylori*.

Hardy's GramPRO 1 will rapidly stain your smears and get it right every time! Our patented technology judges the thickness of the smear and adjusts the decolorization step to perfection. Not only that, there are no messy clean-up or maintenance procedures. The GramPRO 1 will produce a perfect slide every time in about 4 minutes.

[Find out more about the GramPRO 1](#)

[Watch a brief video on GramPRO 1](#)

[View the brochure on all of Hardy's automated stainers.](#)

[Please contact me to discuss automated slide stainers.](#)

Hot off the press...

New Culture Media Catalog



Hardy is proud to announce its new catalog of all culture media offerings. This 85 page booklet contains descriptions of the 2,700 products that

One New Zealand study in 1994 showed complete inhibition of growth of seven isolates of *H. pylori* over an incubation period of 72 hours using a 5% concentration of Manuka honey. Partial inhibition of some isolates was achieved at 2.5% (2).

Not all Manuka honey has the same degree of bactericidal activity, and the reason for this is still under investigation. It is understood that depending on the season and source, honeys can vary in grade and strength. It is possible that a sub-species of the Manuka bush or the soil type it grows in may have an effect on the varying concentrations of compounds within the honey. Consequently, some areas in New Zealand produce higher concentrations of active components within the honey, yielding a higher quality (more potent) product. The typical raw unfiltered honey is a rich source of amino acids, B vitamins, calcium, copper, iron, magnesium, manganese, phosphorous, potassium, sodium, and zinc. In Manuka honey, the nutritional content may be up to four times that of normal flower honey including a considerably higher level of enzymes, hydrogen peroxide, methylglyoxal, and dihydroxyacetone. Because consumers have no way of knowing the level of quality or authenticity of the Manuka honey they buy, a standard called the Unique Manuka Factor (UMF) was created in order to rate its potency and certify that it was lab tested. The now called UMF Honey Association in New Zealand introduced the UMF quality trademark and rating system. The UMF quality trademark ranges from 5 upwards: 0-4 not detectable, 5-9 low levels, 10-15 useful levels, 16+ superior high grade levels.



Honey is a very rich and complex product that has other uses beyond its culinary delights. An Associated Press story dated December 27th 2007 reported that the U.S. Food and Drug Administration had quietly approved a line of honey-based wound dressings during the fall of that year. Derma Sciences, Inc., a New Jersey manufacturer of medical wound and skin care supplies then marketed their product MEDIHONEY, which is a line of wound dressings

Hardy manufactures for the microbiologist.

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* * *

Environmental Monitoring

Contact Plates



Hardy offers a complete line of contact plates for your surface monitoring program. Whether you need irradiated or non-irradiated, single or triple bagged, Hardy has it in a variety of formulas.

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consisting mainly of an absorbent brown algae pad, covered in Manuka (*Leptospermum*) honey. Perhaps the FDA will see fit to approve Manuka honey for other uses in the future. In the meantime, the next time you have a sore throat, a cup of tea with a teaspoon of Manuka honey with a 10-15+ rating just may hit the spot!

*By Marcus Zuzow
R&D Technician at Hardy Diagnostics*

Dunford C, Cooper R, Molan PC. Using honey as a dressing for infected skin lesions. Nurse Times.2000; 96:7-9.

Somal N, Coley K, Molan P, Hancock B. Susceptibility of Helicobacter pylori to the antibacterial activity of Manuka honey. J Royal Soc Med. 1994; 87:9-12.

* * *

Crystal Diagnostics



Can you detect a variety of food pathogens in less than 10 hours?

Now you can with the new Crystal Diagnostics XPress! This highly simplified method, using liquid crystals, will revolutionize the way you detect food pathogens, such as *E. coli* O157, *Salmonella*, *Listeria*, and STEC.

[Watch](#) a short video to learn more...

[See](#) the web page for details.

[Contact](#) us for a demo and price quote.

* * *



* * *

Which do you do?...

Heat Fix or Methanol Fix

Microbiologists are a very opinionated group of individuals and it is, at times, difficult to get consensus and standardization on certain procedures. Whether to heat fix or methanol fix slides in preparation for Gram staining is one of those controversial procedures.

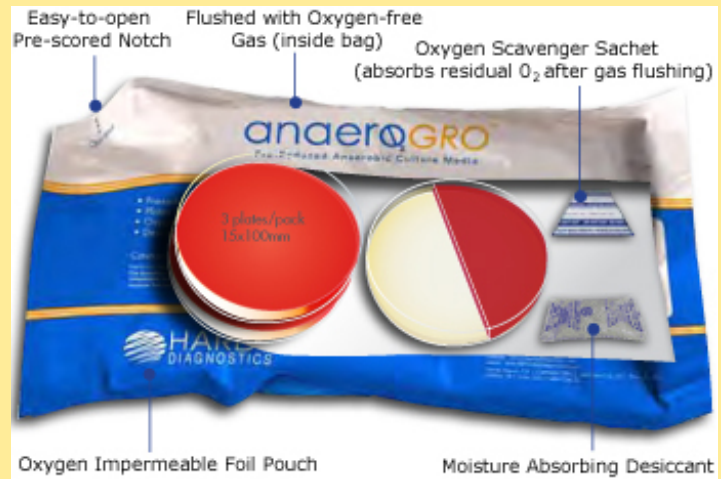


It was never fully documented as to why one method would be superior over the other...

Until now!

Jeanne Minnerath et al at the Biology Department at St. Mary's University of Minnesota decided to settle the matter. They

anaeroGRO



Could you be missing important anaerobes? Hardy offers pre-reduced culture media in oxygen impermeable bags that are gassed with nitrogen and contain an oxygen scavenger and desiccant.

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Anaerobic tubes with Hungate stoppers are available too!

* * *

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examined heat and methanol fixed slides for two parameters; adherence of the bacterial cells to the slide and the ability of the gram positive bacteria not to become over decolorized.

Their results showed that methanol fixation won by a long shot! There were 2.5 times as many *Staphylococcus aureus* cells present on the slide with methanol fixation compared to heat fixation. This number increased to a factor of 10 when *E. coli* was tested. The methanol fixation was superior in causing the specimen to adhere securely to the slide.

In addition, they found that Gram positive bacteria were far less likely to become over-decolorized with methanol rather than heat fixation. This confirmed the findings of Mangels, et al in 1984.

Heat fixation tends to damage and distort the delicate cell wall structures of bacteria. This distortion also happens with tissue and blood cells which can create background debris that may be confusing or misleading.

Some have a concern for the toxicity and flammability of methanol in the lab. However, now that fume hoods are usually available and Bunsen burners are mostly used for museum displays, this should not be a problem. So why do some microbiologists insist on heat fixation?

Curiously, Minnerath mentions in her study that of the 15 microbiology manuals that they examined, all of them recommended heat fixation. Only two of them even mentioned methanol as an alternative.

What is your opinion? Send in your comments and MicroBytes will publish some of them in the next edition in October.

Minnerath Study

Mangels Study

* * *

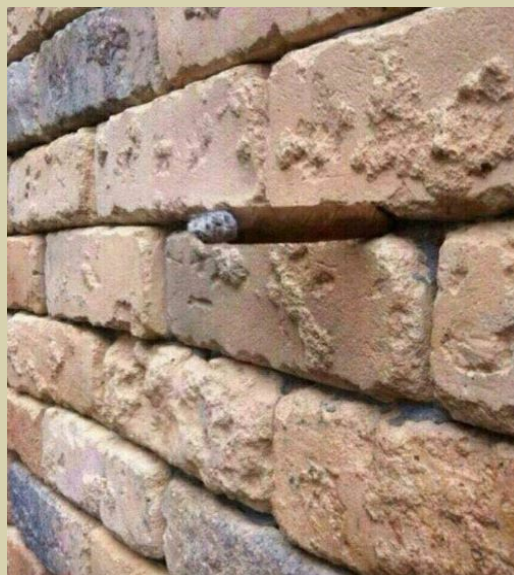


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Pick. Click. You're Done!

* * *

Optical oddities...



Do you see anything unusual about this wall?
Most people cannot.
Scroll to bottom if you give up.

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

~ Benjamin Franklin ~

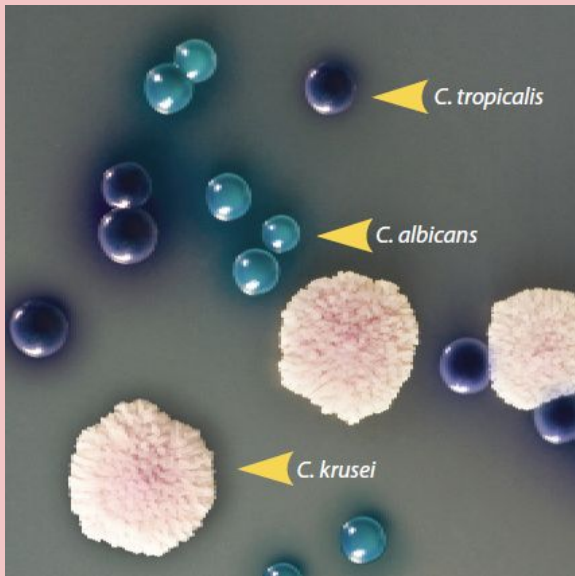
*For immediate ID
of Candida species...*

HardyCHROM

Watch resistance happen...

Alarming Video!

Candida



On the basis of colony color, Hardy's chromogenic media for *Candida* species will allow you to immediately identify:

- *Candida albicans*
- *Candida tropicalis*
- *Candida krusei*

Candida glabrata will appear as a beige smooth colony and can be confirmed with a Rapid Trehalose test.

Try out some samples of HardyCHROM *Candida*

Purchase now...

View Hardy's other chromogenic products.

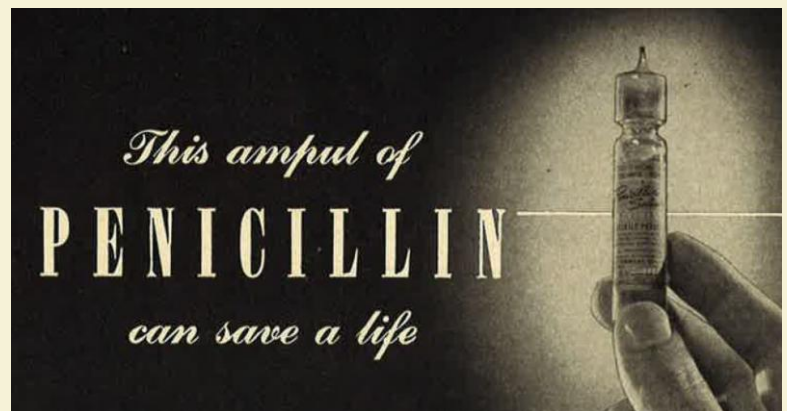
Please have a Hardy Representative call me for a price quote and more information.

* * *



Watch a time lapse video from Harvard Medical School that shows how bacteria can develop resistance with alarming speed to antimicrobials due to mutations!

* * *



The year was 1944 and penicillin had recently been released for use on American troops fighting in Europe and the Pacific. At the time, most bacterial infections could be successfully treated with penicillin, since resistance had not yet developed.



"I am not afraid...I was born to do this."

Joan of Arc
1412 ~ 1431

Brainteasers



Try out our numbers game!

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All formats available...

Control Organisms



Thanks to PENICILLIN
...He Will Come Home!



Even though Alexander Fleming discovered penicillin in 1928, it wasn't until 1942 that the first patient was treated using the drug for a streptococcal infection. This new "miracle drug" was being tightly held for military use only by the US Government.

Microbiologists and chemists worked around the clock to manufacture 2.3 million doses of penicillin in preparation of D-Day that would take place in June of 1944. This was considered one of the most advantageous top secret advances that helped to win the war for the allies.

Towards the middle of 1944 the government began to release small amounts of penicillin for civilian use. [View an advertisement](#) from the June 1944 edition of *West Coast Druggist* in which the availability of penicillin was first being announced to retail pharmacists in order to save lives on the home front.

* * *

For your plate counts...

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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.

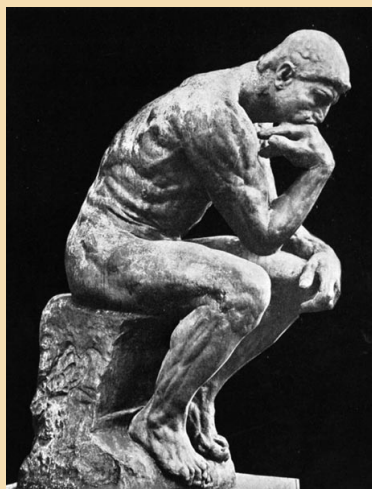
[Watch a short video](#) about Kwik-Stiks

[View](#) the entire microorganism catalog online.

[Request](#) a paper catalog.



Think about it...



* If a shark gets a nosebleed, will it start to swim in circles?

* If people evolved from apes, why are there still apes?

* Why is it that no matter what color bubble bath you use the bubbles are always white?



Hardy now offers a better alternative when it comes to performing plate counts. Not only are Compact Dry plates are stored at room temp, approved by AOAC, but the sample automatically diffuses into the media! Never mess with spreaders and films again!

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RUBES

* Is there ever a day that mattresses are not on sale?

* Why do we constantly return to the refrigerator with hopes that something new to eat will have materialized?

* * *

Wisdom to Ponder...



E. E. Cummings

1894 ~ 1962

American poet, painter, essayist, author, and playwright. His body of work encompassed approximately 2,900 poems; two autobiographical novels; four plays; and several essays, as well as numerous drawings and paintings.

"It takes courage to grow up and become who you really are."

"The most wasted of all days is one without laughter."

"Once we believe in ourselves, we can risk curiosity, wonder, spontaneous delight, or any experience that reveals the human spirit."

"America makes prodigious mistakes, America has colossal faults, but one thing cannot be denied: America is always on the move. She may be going to Hell, of course, but at least she isn't standing still."

"Unless you love someone, nothing else makes any sense."



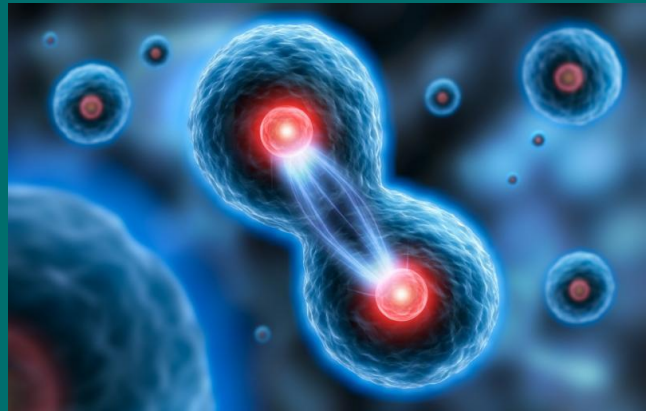
How evolutionary biologists become evolutionary dead ends

[Find more](#)

of Leigh Rubin's cartoon humor.

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

The dream of every cell...



is to become two cells.

Francois Jacob

HardyCHROM MRSA

"The world is mud-luscious and puddle-wonderful."

"The earth laughs in flowers."

"I thank you God for this most amazing day, for the leaping greenly spirits of trees, and for the blue dream of sky and for everything which is natural, which is infinite, which is yes."



Edward Estlin Cummings upon his graduation from Harvard in 1915.

* * *



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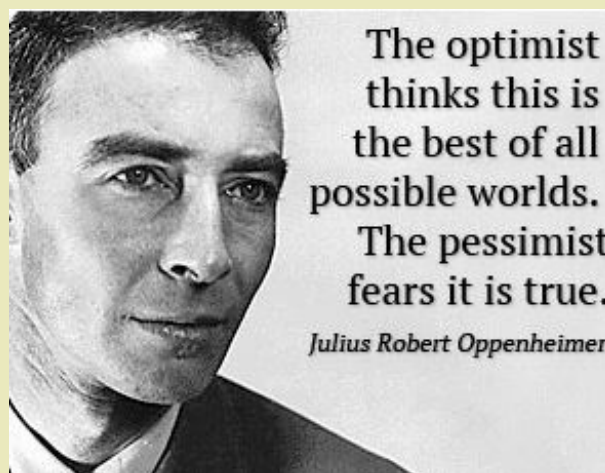
for brighter more distinct color reactions.

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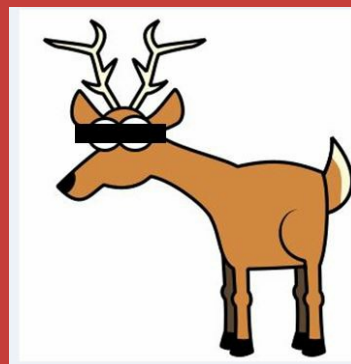
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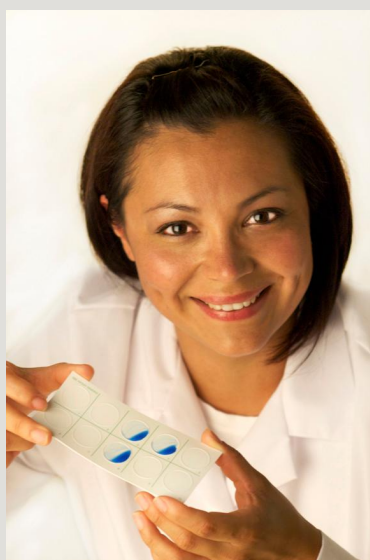
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What do you call a
deer with no eyes?



no I deer.



Hardy Diagnostics...

- Manufactures over 2,700 microbiology products for you to choose from.
- Stocks over 13,000 laboratory products for your "one stop shop" experience.
- Is celebrating its 36th year of serving microbiologists.
- Manufactures from three ISO certified factories; one in California, Ohio, and Texas.
- 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.
- Services over 10,000 labs and maintains a worldwide network of over 65 distributors.
- Is a 100% Employee-Owned company. *"If we act like we own the place...it's because we do!"*

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QUICK LINKS...

Warning: PUN ZONE AHEAD



- * I was addicted to the hokey pokey, but I turned myself around.
- * Always hold the door open for a clown. It's a nice jester.
- * I've been very cynical since my reality check bounced.
- * All those who believe in psychokinesis raise my hand.
- * Did you hear about the fake noodle?...it was an obvious impasta.

"As Hardy Diagnostics enters its 36th 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 that we can improve or expand upon our service, would you please let me know?"

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

Optical Oddities Explained



And now that you've seen the cigar...
it's hard ***not*** to see it!

