

Phactum

The Newsletter and AntiWoo Woo Organ of the
Philadelphia Association for Critical Thinking
November/December 2013

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**The Beautiful
Simplicity of the Cosmos**

PhACT Meeting - Saturday, November 16, 2013

at Community College of Philadelphia in Lecture Room C2-28 in the Center for Business and Industry
at the corner of 18th and Callowhill Streets. At 2:00 PM.

Parking is available from 12:30 to 6:00 PM in the surface parking lot on 17th Street.
All are Welcome. This event is Free and Open to the Public. Handicapped accessible.

Dr. David Cattell, Chairman of the Physics Department of Philadelphia Community College, will host
Dave Goldberg, a Professor of Physics and Cosmology at Drexel University

Professor Goldberg will discuss:

"Why Symmetry Matters" a description of the beautiful simplicity of the universe.

Despite appearances to the contrary, the universe is a very orderly, and surprisingly elegant place. But at some level, the order of the universe is a broken one. Why does time run one way and not the other? Why are you made of matter and not antimatter? Why is Spiderman such an ill-conceived premise? Symmetry (and symmetry breaking) lie at the heart of it all. We'll take a fast-paced tour of symmetry in physical laws, and meet one of the great unsung heroines of mathematical physics: Emmy Noether. Noether provided the connected between symmetries and conservation laws, providing the groundwork for modern work on supersymmetry and the search for Grand Unified Theories.

Dave Goldberg is a theoretical cosmologist and professor of Physics at Drexel University. He is the author, most recently, of "The Universe in the Rearview Mirror: How Hidden Symmetries Shape Reality." Dr. Goldberg is very interested in the interface between science and pop culture and is especially prone to nerdy excess of sci-fi references. He writes a regular "Ask a Physicist" column for io9.com, has been featured on WNYC's Studio 360 and The Leonard Lopate Show, WHYY's NewsWorks Tonight and has contributed to Slate.com, Wired.com and the L.A. Times.

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Dr. Watson's Reflections on the Universe



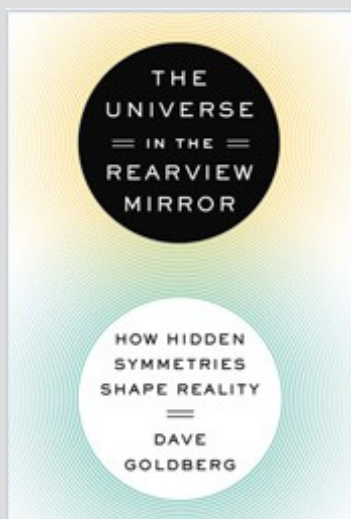
Sherlock Holmes and Dr Watson went on a hunting trip. After a good meal and a bottle of wine they lay down for the night, and went to sleep. Some hours later, Holmes awoke and nudged his faithful friend awake. "Watson, look up at the sky and tell me what you see."

Watson replied, "I see millions and millions of stars."

"What does that tell you?" Holmes questioned.

Watson pondered for a minute. "Astronomically, it tells me that there are millions of galaxies and potentially billions of planets. Astrologically, I observe that Saturn is in Leo. Logically, I deduce that the time is approximately a quarter past three. Theologically, I can see that God is all powerful and that we are small and insignificant. Meteorologically, I suspect that we will have a beautiful day tomorrow. What does it tell you?"

Holmes was silent for a minute, then spoke. "Watson, you idiot. Someone has stolen our tent."



The Universe in the Rearview Mirror: How Hidden Symmetries Shape Reality

by Dave Goldberg

Publisher: Dutton Adult (July 11, 2013) Hardcover: 352 pages
ISBN-10: 0525953663 ISBN-13: 978-0525953661

A physicist speeds across space, time and everything in between showing that our elegant universe—from the Higgs boson to antimatter to the most massive group of galaxies—is shaped by hidden symmetries that have driven all our recent discoveries about the universe and all the ones to come.

Why is the sky dark at night? Is it possible to build a shrink-ray gun? If there is antimatter, can there be antipeople? Why are past, present, and future our only options? Are time and

space like a butterfly's wings?

No one but Dave Goldberg, the coolest nerd physicist on the planet, could give a hyper drive tour of the universe like this one. Not only does he answer the questions your stoner friends came up with in college, but he also reveals the most profound discoveries of physics with infectious, Carl Sagan-like enthusiasm and accessibility.

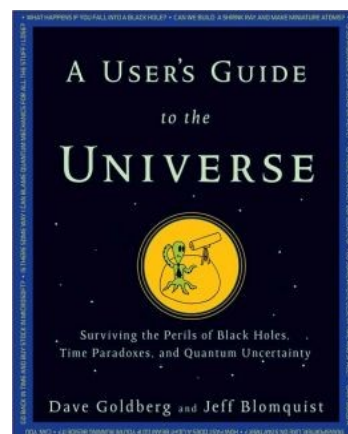
Goldberg's narrative is populated with giants from the history of physics, and the biggest turns out to be an unsung genius and Nazi holocaust escapee named Emmy Noether—the other Einstein. She was unrecognized, even unpaid, throughout most of her career simply because she was a woman. Nevertheless, her theorem relating conservation laws to symmetries is widely regarded to be as important as Einstein's notion of the speed of light. Einstein himself said she was "the most significant creative mathematical genius thus far produced since the higher education of women began."

Symmetry is the unsung great idea behind all the big physics of the last one hundred years—and what lies ahead. In this book, Goldberg makes mindbending science not just comprehensible but gripping. Fasten your seat belt.

A User's Guide to the Universe: Surviving the Perils of Black Holes, Time Paradoxes, and Quantum Uncertainty

by Dave Goldberg

Publisher: Wiley; 1 edition (February 1, 2010) Hardcover: 304 pages
ISBN-10: 0470496517 ISBN-13: 978-0470496510



Answers to science's most enduring questions from "Can I break the light-speed barrier like on Star Trek?" and "Is there life on other planets?" to "What is empty space made of?"

This is an indispensable guide to physics that offers readers an overview of the most popular physics topics written in an accessible, irreverent, and engaging manner while still maintaining a tone of wry skepticism. Even the novice will be able to follow along, as the topics are addressed using plain English and (almost) no equations. Veterans of popular physics will also find their nagging questions addressed, like whether the universe can expand faster than light, and for that matter, what the universe is expanding into anyway.

Gives a one-stop tour of all the big questions that capture the public imagination including string theory, quantum mechanics, parallel universes, and the beginning of time

Explains serious science in an entertaining, conversational, and easy-to-understand way

Includes dozens of delightfully groan-worthy cartoons that explain everything from special relativity to Dark Matter

Filled with fascinating information and insights, this book will both deepen and transform your understanding of the universe.

Letters to the Editor

Letters to the editor are encouraged

Editor: In *Bigfoot in New Jersey* (2013) by WR Matts, he claimed that while using a night vision monocular he spotted a creature on July 15, 2009 in “an area where an outhouse was located” at the Godfrey Bridge Campground in Wharton State Forest in the South Jersey Pine Barrens. There at night “about fifty yards away from behind a tree that split into a Y five feet off the ground, was a pair of reflecting eyes



in a head I could barely discern on what appeared to be a pretty sizable body.” He noted that the “eyes were slowly swaying back and forth, with its left eye going in and out from behind the limb to the right side of my vantage point.” But eventually when he “looked once more, sure enough, the creature was gone.” He thought “the height of the creature to be seven to eight feet, give or take a couple inches.” It’s hard to say exactly what he might have barely discerned that night in the dark at a considerable distance with his night vision monocular, perhaps a Bigfoot peering through the Y of the tree or maybe just a great horned owl with an eerie eyeshine perched upon the inside of the Y and occasionally turning its head to the left that subsequently flew away!

Don Nigroni
Glenolden, PA



Don Nigroni, not Bigfoot, peering through a Y in a tree near outhouse # 10 at the Godfrey Bridge Campground.

Photograph taken by Kim Sheridan on October 26, 2013.

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PHACT AGAIN TO PARTICIPATE IN SCHOOL SCIENCE FAIR

THIS COMING SPRING PHACT WILL ONCE AGAIN JUDGE THE WASHINGTON CARVER SCIENCE FAIR AT TEMPLE AND AWARD CASH PRIZES. IF YOU WOULD LIKE TO ENCOURAGE SECONDARY STUDENTS IN THEIR PURSUIT OF SCIENCE KNOWLEDGE, CONSIDER DONATING TO OUR SCIENCE FAIR PRIZE FUND. DONATION OF ANY AMOUNT ARE APPRECIATED.

SEND YOUR CHECKS TO:
SUE GLICKMAN, PHACT, 653 GARDEN RD., GLENSIDE PA 19038

FOR MORE INFO ON THE FAIR, SEE THE LINK BELOW.

[HTTP://WWW.TEMPLE.EDU/CARVERSCIENCEFAIR/](http://www.temple.edu/carversciencefair/)

Every kid starts out
as a natural-born
scientist, and then
we beat it out of them.
A few trickle through
the system with their
wonder and enthusiasm
for science intact.



Carl Sagan

Various Ruminations of Woo Woo and Real Science

Collected/Written by Ray Haupt
(with help from others)

About Phactum

Phactum will change a bit starting in January of 2014. The most significant change will be that Phactum will become a quarterly publication mainly because the ill humored editor wishes to have fewer deadlines and greater ability to plan travel and other projects.

The Calendar will change a bit in that less detail of events will be provided, except of course, PhACT events. The purpose is to reduce printing somewhat and we will still attempt to list lectures and other events in the Delaware Valley that might be of interest to skeptics spanning the entire quarter.

As always, letters and articles are invited on almost any topic including topics at odds with general skeptics thinking. If a case can be made for Intelligent Design or Breathairianism then please submit. Original poetry is welcome. You may denounce the editor with out fear of evil spirit reprisals even though he is an Honorary Canadian Witch Doctor.

Otherwise, Phactum will chug along, hopefully presenting a case for science and critical thinking and a case against fanciful woo woo and other pseudoscience, all hopefully in a manner that at least resembles lucid thought.

We do appreciate input from readers. Please write.

If you have psychic abilities and know Wall Street Journal stock statistics a day early please contact the editor at:

phactpublicity@aol.com

Phactum's Roster of I.R.E. (Infamous Rational Errors)

Phactum contributor Paul Schlueter III has accumulated over time a vocabulary listing of many of the egregious flaws of thinking, devious tactics of argument, and some pretty cool Latin phrases that might sound impressive used at a social gathering. This listing is nowhere near complete, but has been made into a pamphlet, currently 24 pages, that is available free and only at PhACT Meetings. Meeting attendees are invited to take one and are also invited to participate in expanding the listing in the 2nd edition as it is intended to be a collaborative project. The second edition will be available at the January meeting. It is a handy little reference booklet that writers of philosophic and political nature might profitably keep by their typewriter.

Definitions and examples should be short and to the point. Here are three examples in the order they appear in the booklet.

REDUCTIO AD ABSURDUM - Literally, "reduce to absurdity." An argumentative tactic that seeks to defeat the opposition by exaggerating an aspect of his position to the point of absurdity (also, extremism), then implying that the entire position is equally absurd (or extreme). Classic exam-

ple: "Which of your grandparents was a monkey? None? Then how can you say humans evolved from monkeys?"

REIFICATION - Treating or evaluating an abstraction as if it had concrete or material evidence.

REPETITION BIAS - The subconscious tendency to believe things heard often. Traditional and Folk wisdom often fall into this category. That which is most familiar, and most readily called to mind, often tends to be believed without critical thought or question. Even when myths, legends, or distorted ideas are repeated for the purpose of refuting them, that repetition reinforces their strength.

Vocabulary contributions (and corrections) to this ongoing endeavor may be sent to the Phactum Editor at phactpublicity@aol.org for inclusion. It will be fun to see how elaborate the booklet becomes.

British scientist 'solves' mystery of Himalayan yetis

The BBC reports that an Oxford University genetics professor, Bryan Sykes, has analyzed hairs found in Ladakh - in northern India on the west of the Himalayas - and the other from Bhutan, 1,285km (800 miles) further east. He concludes that the hair samples appear to be those of a hybrid bear, a combination of polar bear and brown bear that have been known to interbred.



Now, if only we could solve the mystery of the elusive Jersey Devil.

<http://www.bbc.co.uk/news/world-asia-24564487>

Chiropractic exposé published

This item was extracted from Dr. Stephen Barratt's Consumer Health Digest of October 10, 2013. Dr. Barrett is the proprietor of the Quackwatch website: quackwatch.com

Chiropractic Abuse: An Insider's Lament, published by the American Council on Science and Health, presents an insider's view of chiropractic history and education; economic abuse of patients; insurance fraud and abuse; laxness of chiropractic regulation; neck manipulation and stroke; suggestions for reform; how current and prospective patients can protect themselves; and much more. The author, Preston Long, D.C., Ph.D., has practiced chiropractic and served as a consultant to insurance companies for many years. The most unusual portions are Long's experiences as a student and his practical tips for insurance claims examiners. The book was edited by Stephen Barrett, M.D. and has a foreword by former National Council Against Health Fraud president Wil-

liam T. Jarvis, Ph.D. Discounted copies are available through Amazon Books. <http://www.amazon.com/dp/0972709495>

Good ideas gone bad

At the October PhACT meeting Dr. Paul Offit, our speaker, asked the audience to think of ideas in medicine that may have seemed good but turned out to be not so good. There probably are plenty and that would certainly be a great topic for an interesting book on the History of Medicine.

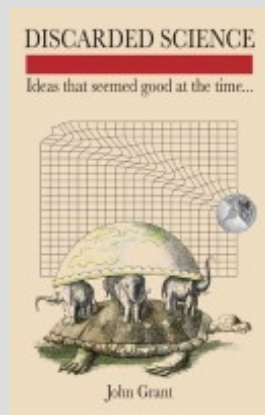
That request brings to mind PhACT's speaker of September 2010, Paul Barnett, a science fiction writer who uses the nom de plume of John Grant. Paul, or John, wrote a non-fiction book entitled *Discarded Science: Ideas That Seemed Good at the Time...* which is described at the bottom of this page.

Discarded Science: Ideas That Seemed Good at the Time...

by John Grant

Publisher: Facts, Figures & Fun, 2006

ISBN: 1904332498, 9781904332497 320 pages, \$12.95



A fascinating trawl through the history of those scientific ideas which seemed plausible, at least to some, but turned out to be wrong. Includes flat earth, hollow earth, lost worlds and bizarre ideas about evolution; Pilt-down man and other scams; alchemy, aliens, humours and homunculi.

This is a special expanded version of our format that is 300+ pages. Included are:

Defunct Science and Pseudoscience: A lightning-quick broad-brush history of science, focusing on its transformation from a wing of philosophy via Bacon's introduction of the Scientific Method into the most powerful tool of understanding known to us. How scientific ideas have all the while fallen by the wayside as science has evolved. The difference between this and pseudoscience.

World in Upeaval: From the flat Earth at the centre of the Universe via the Copernican Revolution to the smallish planet orbiting an average star. The Ptolemaic cosmologies. Theories like that of the hollow Earth (and indeed the hollow Sun) - and do we live inside a hollow Earth? - as well as the annular theory, catastrophism, elective polarity, the expanding Earth, macrocosm and microcosm, neptunism, plutonium, Velikovskianism . . .

Lost Worlds, Hidden Races, and Unknown Creatures: Atlantis, Lemuria, Mu, the Hesperides, the myths of great past civilizations destroyed by catastrophe. Races such as the Amazons and the Yeti, and cryptozoology.

The Evolutionary Wars: Early and bizarre ideas (primarily Greek) about evolution. Lamarckism and Lysenkoism. Wallace and Darwin unravel the notion of natural selection. The Balance of Nature and the Chain of Being. Pilt-down Man and others. Ontogeny recapitulating phylogeny. Root races, succeeding races of Man, the Shaver hoax, parallel evolution. The myth of racial purity. Creationism and Intelligent Design. Panspermia, and notions of alien-assisted evolution.

Aliens Among Us: The Plurality of Inhabited Worlds: Ideas about what Venusians, Martians and others must be like. The Moon Hoax and the Martian canals. Antichthon. Ancient astronauts à la von Däniken and the various UFO crazes. The 1896 7 Airship Flap. Aliens from inside the hollow Earth.

Hard Science: Alchemy, animal electricity, animal magnetism, argentaurum, the Aristotelian elements, astrology, caloric, the celestial sphere, cold fusion, continuous creation, the corpuscular theory of light, effluvium, the fifth planet, globulism, Lawsonomy, levity, the luminiferous aether, the music of the spheres, N-rays, organomy, pangenesis, perpetual motion, phlogiston, polywater, seriality, serial time, spontaneous generation, substantialism, the cool Sun, Vulcan, the World Ice Theory.

Us . . . Or Something Like Us: Humours and homunculi, the acquisition of virtues through cannibalism, telegony and tailed men defunct and bizarre ideas about the way human and other biology works, and the transposition of those ideas into "medicine". Allopathy, biomagnetics, colour therapy, dianetics, eye exercises, focal sepsis, iatrochemistry, iridiagnosis, leeching, mammaramism, naturopathy, phrenology, psychicmedicine, radionics, the Rapture, the Doctrine of Signatures, spondylotherapy, swaddling, telegony, trepanation, vis plastica, vrilium, zone therapy . . .

US hospital bans dietary supplements from its pharmacy

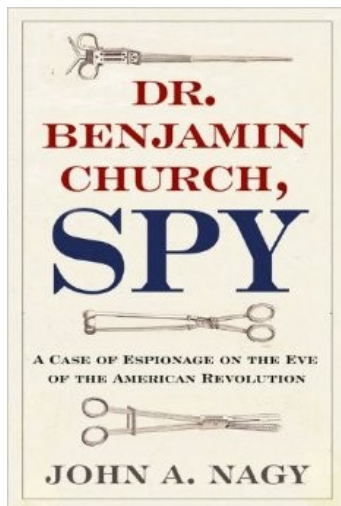
And speaking of Dr. Stephen Barrett and Dr. Paul Offit, this little item was included in Dr. Barrett's Consumer Health Digest of October 24, 2013.

The Children's Hospital of Philadelphia has announced that its Formulary—the list of medications approved for dispensing to patients—will no longer include most dietary supplement products (the category of products that includes vitamins, minerals, herbs, botanicals, amino acids, enzymes and animal extracts). The hospital's updated policy acknowledges that some medical conditions may require supplementation with nutrients that the hospital has determined are proven to be of high quality and safe. Parents who insist on giving their hospitalized children products that are not listed in the CHOP Formulary must sign a hospital waiver assum-

ing responsibility for providing the product. [Children's Hospital of Philadelphia becomes first in nation to disallow use of dietary supplements: New hospital policies will improve patient safety, education. CHOP news release, Oct 8, 2013] <http://www.chop.edu/news/chop-updates-policy-on-dietary-supplements.html>

If you had been at PhACT's October meeting you would have learned this fact and the reasons for the decision directly from Dr. Offit. It is sort of a neat feeling for Phactum to be one step ahead of Quackwatch. It is a first.

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Dr. Benjamin Church, Spy: A Case of Espionage on the Eve of the American Revolution by John A. Nagy

Publisher: Westholme Publishing; 1 edition (October 1, 2013)
Hardcover: 224 pages ISBN-10: 1594161844 ISBN-13: 978-1594161841

Newly Discovered Evidence Against a Man Who Has Long Been Suspected as Being a British Agent and America's First Traitor

"John Nagy has devoted his astonishing research skills to unearthing the truth about the least known and most dangerous spy in American history."—Thomas Fleming, author of *Liberty! The American Revolution*

Dr. Benjamin Church, Jr. (1734–1778) was a respected medical man and civic leader in colonial Boston who was accused of being an agent for the British in the 1770s, providing compromising intelligence about the plans of the provincial leadership in Massachusetts as well as important information from the meetings of the First Continental Congress in Philadelphia. Despite his eminence as a surgeon—he conducted an autopsy on one of the victims of the Boston Massacre—and his own correspondence and the numbers of references to him from contemporaries, no known image of him exists and many aspects of his life remain obscure. What we do know is that George Washington accused him of being a traitor to the colonial cause and had him arrested and tried; after first being jailed in Connecticut and then Massachusetts, during which he continued to profess his innocence, he was allowed to leave America on a British vessel in 1778, but it foundered in the Atlantic with all hands lost. The question of whether Dr. Benjamin Church was working for the British has never been conclusively demonstrated, and remains among the mysteries of the American Revolution.

In *Dr. Benjamin Church, Spy: A Case of Espionage on the Eve of the American Revolution*, noted authority John A. Nagy has scoured original documents to establish the best case against Church, identifying previously unacknowledged correspondence and reports as containing references to the doctor and his activities, and noting an incriminating letter in the possession of the Library of Congress that is a coded communication composed by Church to his British contact. Nagy shows that at the cusp of the revolution, when the possibility—let alone the outcome—of an American colonial rebellion was far from assured, Church sought to align himself with the side he thought would emerge victorious—the British crown—and thus line his pockets with money that he desperately needed. A fascinating investigation into a centuries-old intrigue, this well-researched volume is an important contribution to American Revolution scholarship.

John Nagy will discuss his book at the American Revolution Round Table of Philadelphia on Wednesday November 20, 2013 at 7:00 PM. ARRTOP events are Free and Open to the Public. <http://arrtop.com>

Meeting Reports - October 2013

**Do You Believe in Magic? a discussion of alternative medicine
by Dr. Paul Offit, a pediatrician at Children's Hospital of Philadelphia**

**Reported by Jahnia Wright, Khadrah Khalil, John Shannon, and Steven Stofka who are
Physics students of Dr. David Cattell at Community College of Philadelphia.**

"Do You Believe in Magic?"

Jahnia Wright

Dr. Paul Offit, an affiliate of Children's Hospital of Philadelphia, has done extensive research on medical prescriptions in efforts to inform the public about their decision making when it comes to maintaining good health and also avoiding health risks. His informative synopses of the history of pharmaceutical drugs and remedies helped to further explain how the medical industry became what it is today. The absence of regulation policies and the failure of statistical backing that shows proof of these over-the-counter prescriptions being beneficial didn't seem morally correct to Dr. Offit. People unknowingly and sometimes unwittingly harm themselves in efforts to ease the aches and pains through medicine in hopes of acquiring recovery and possibly prolonging life. The false advertisement, the FDA write-offs, and the underlying medical threats that are flaunted by powerhouse drug companies convinced Dr. Offit to believe "there is no such thing as alternative medicine."

The idea of all-natural treatments and sugar free products fell between the lines of mythical facts from the perspective of Dr. Offit. Unlike companies similar to Coca-Cola that was no longer allowed to sell small amounts of cocaine in their sodas in efforts to feed off of a consumer's addiction, Johnson & Johnson relies on its marketable and reputable dominance in pharmaceuticals to sell almost any drug that triggers a buyer's interests. Low immunity tablets and daily vitamins are just a few of the products that were regarded as harmful due to the potency of the drug and the poisoning that it may cause because of an over dosage of intakes. The medical industry remains an unregulated business that seems to be spiraling more and more into the opposite direction of recovery. I believe like Dr. Paul Offit believes – if we arm ourselves with knowledge and focus our attention on the performance of our bodies, we will be able to avoid unauthenticated medical products. We then will be able to understand the sense and nonsense of "Alternative Medicine".

Khadrah Khalil

Dr. Paul A. Offit gave us a new look on alternative medicine. It has been thought for many decades that these alternative medicines could benefit the sick without visits to a doctor (for example: acupuncture) but realistically these things have been revealed of their true harm and nonsense. In Dr. Offit's book he provides analyzed data showing the deceiving presentation of these medicines.

Vitamins are an essential key for the function of the human body, whether to immunize against sickness or to simply allow a mechanism to work efficiently. GNC, a multibillion dollar and unregulated industry, has been affluent in producing and providing these megavitamins to the public. Although it is part of the pharmaceutical company, the products they produce are not approved by the FDA since they are considered nutritional and dietary supplements. In addition, their products are not evaluated for safety and the percentage that is evaluated for safety is 0.3%. Unfortunately, even though they are drugs and should be approved by the FDA, they are not considered drugs by the general public.

However, we have been introduced to megavitamins, which seem to be something great, but can it be that too much isn't good? Dr. Offit explained that the higher the level a person consumes of some of these vitamins the more likely the person is to get cancer. There are antioxidants in which kill cancer cells but if a person intakes more than needed, it increases the health risk of the person and causes more harm than good. Not only have these megavitamins been shown that they are harmful to a person's health, they also conflict with other medications.

Dr. Offit, Director of the Vaccine Education Center at St. Christopher's Children's Hospital, a Professor of Vaccinology, and a Professor of Pediatrics at the University Of Pennsylvania School Of Medicine, wants to bring awareness to the harms of these so-called "Alternative Medicines." His book brings the evidence of their harms as well as their innovative source.

John Shannon

At its last meeting on October 19, 2013, the Philadelphia Association for Critical Thinking hosted Dr. Paul Offit for a fascinating talk followed by a question and answer session. Dr. Offit is an accomplished physician and author who has written extensively on all manners of medical malfeasance- if you can even call these assorted schools of thought medical in nature, propagated and consumed as they are by untrained charlatans and unknowing citizens.

While the session covered topics such as 'super' doses of vitamins, the anti-vaccination movement, and medical breakthroughs which were later found to be harmful, the thing that interested me most about the day was the overall component of patient delusion. In many of these fields where some tonic is peddled or shamanism passed off as 'stifled, alternative science', the primary consumer is desperate, driven by a fierce desire to ward off infirmity or death for themselves or their loved ones. Dr. Offit approached this from several angles.

Probably the most immediate thought is just how oily and morally repugnant it is to market these things to people who are most desperate. An argument could be made that it's fairly inoffensive to try and sell America's upper middle class housewives fruit smoothies with ineffective joint relief or 'cold repellent'. Even cases like those experienced by Dr. Offit, where he was prescribed glucosamine sulfate after a surgery could ultimately be attributable to a manifestation of capitalism that is a little bit odious but not truly harmful, as things like these are largely elective in nature and not likely to place a great strain on the lives of those duped.

But when it comes to the end-life cancer treatments and other terminal cures- popularly lampooned in *Contagion*- it is a lot

Do You Believe in Magic?: The Sense and Nonsense of Alternative Medicine by Paul A. Offit

**Publisher: Harper; 1 edition (June 18, 2013) Hardcover: 336 pages
ISBN-10: 0062222961 ISBN-13: 978-0062222961**

The following review was written by Dr. David Cragin, a toxicologist and longtime member of PhACT's Council.

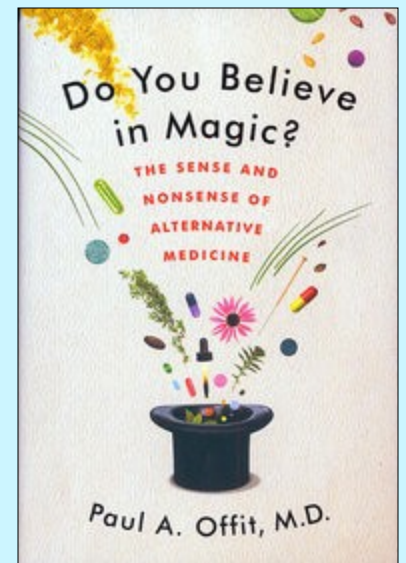
Have you ever wondered about the basis of alternative medicine? How did the various types get started?

E.g., How did chiropractic get started? It was in 1895 by a mesmerist, Daniel Palmer, who used magnets to treat his patients. When a deaf individual came into his office, Palmer wondered if his spine was misaligned and tried to realign it. When he did, the man's hearing recovered. This might have made sense except that the 8th cranial nerve which conducts nerve impulses from the ear to the brain doesn't travel thru the neck.

Or why according to acupuncture does the body have 12 meridians? Because there were 12 great rivers in ancient China. Why is the number of acupuncture points about 360? This was based on the number of days in a year. Offit is sensitive in his coverage, noting that the ancient physicians who started the practice were forbidden from dissecting human bodies and knew little about the internal organs or most importantly the nervous system.

Offit provides these and other fascinating tidbits that will give you a new perspective on alternative medicine. Offit provides both historical context as well as what modern science tells us about these practices. He discusses the scientific studies of the various disciplines of alternative medicine and what they have found.

As someone who teaches health-based risk assessment at two universities, it's great to see a thoughtful in-depth look at an area most of the public sees as risk-free. Whether you are scientist, health professional or someone with an inquiring mind about health, you'll learn much from reading this book.



more difficult for a critically thinking observer to be forgiving. These industries prey on people's insecurities, fears, and hopes. From the top down it grows more ethically dire until literal, absolutely baseless claims are offered dressed up in naturalism and appeals to anti-authority.

With all that said, Dr. Offit also very interestingly spoke of the occasional good provided by the less ugly side of alternative medical treatments. The audience learned a great deal about placebos and how even the medical treatment board of the Children's Hospital of Philadelphia approves some placebos, recognizing their aggregate medical good so long as they don't introduce any real harm. This was personally the most interesting and uplifting aspect of the talk for me: that maybe even this slimy industry might be able to provide some overall benefit to those people who are normally hapless victims.

Steven Stofka

The October PhACT meeting was intriguing and enlightening.

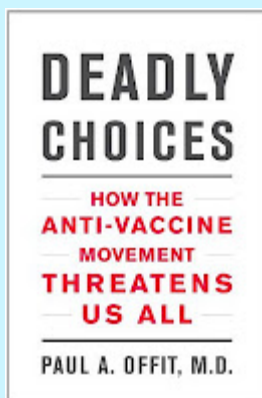
The presenter was Dr. Paul Offit, Children's Hospital of Philadelphia luminary and prolific writer, lecturing on the topic of "alternative medicine"--more particularly, megavitamins. His particular lecture delivered several simple points: firstly, that the megavitamin industry, despite its PR, is actually large, corporate, and altogether unregulated, with but a bare handful even meeting minimum standards of pharmaceutical purity; and secondly, that even *if* megavitamins *do* meet relevant purity standards, then many of them are, at best, purely placebo, and at worst, actively detrimental to the user's good health.

Particular standards he gave were of "antioxidants", overuse of which are strongly correlated--almost to inductive causality--with increased cancer risk, and several specific examples of multivitamins and "natural" remedies, such as saw palmetto, which is taken to reduce the size of one's prostate, but which in reality acts, at best, as a placebo, and at worst, to *increase* its size. Garlic root also stands out for its toxicity in large quantities.

However, he says, that doesn't mean that there are no uses for "alternative medicine"; indeed, he suggests we need to do more research into the placebo effect. A specific example he gave was of acupuncture, the "technical" elements of which are based on Han Dynasty-era misunderstandings about the human body (brought on by strong taboos against dissection), but which has a visible pain-relieving effect. Indeed, *acupressure*, acupuncture's less Sinophile cousin, has the same observed effect on patients--this is regardless of where the needles are stuck. To claim that acupuncture works because of why it's "supposed" to work, in its own tradition, is tantamount to believing in Galen of Pergamon's humors theory (which dates to around the same period), but it *does* have an observable soothing effect. This, to Dr. Offit, suggests that there is more to the placebo effect, and the use of placebo as a form of medication, than we currently realize.

His final thought was that this hitherto unplumbed field might help shed some light on other interesting questions, such as the ability some of us seem to have of learning to regulate our own hormones (such as endorphins, dopamine, etc.).

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Deadly Choices:

How the Anti-Vaccination Movement Threatens Us All.

By Paul Offit, MD

**Publisher: Basic Books; 1 edition (December 28, 2010) Hardcover: 288 pages
ISBN-10: 0465021492 ISBN-13: 978-0465021499**

There's a silent, dangerous war going on out there. On one side are parents, bombarded with stories about the dangers of vaccines, now wary of immunizing their sons and daughters. On the other side are doctors, scared to send kids out of their offices vulnerable to illnesses like whooping cough and measles--the diseases of their grandparents.

How did anyone come to view vaccines with horror? The answer is rooted in one of the most powerful citizen activist movements in our nation's history. In *Deadly Choices*, infectious disease expert Paul Offit relates the shocking story of anti-vaccine America--its origins, leaders, influences, and impact. Offering strategies to keep us from returning to an era when children routinely died from infections, *Deadly Choices* is a vigorous and definitive rebuttal of the powerful anti-vaccine movement.



At the Wagner Free Institute of Science

1700 W. Montgomery Ave. Philadelphia, PA 19121 215-763-6529 Tuesday-Friday 9am-4pm
<http://www.wagnerfreeinstitute.org>

A SIP *of* SCIENCE 2013 BENEFIT COCKTAIL PARTY

**Friday, November 8, 2013
 5:30 to 8:00 PM**



HONORING DERRICK PITTS

This year the Wagner is delighted to honor Derrick H. Pitts, Chief Astronomer and Planetarium Director at the Franklin Institute. Internationally recognized as an exemplary teacher, scholar, and humanitarian, Derrick embodies the traits that founder William Wagner aimed for in creating the Institute - bringing high-level science to the public. Join us to toast one of Philadelphia's brightest stars!

- 5:45 in the Lecture Hall - Astronomical recreations and a toast to Derrick Pitts
- 6:15 in the Museum - Cosmic cocktails, hors d'oeuvres, prizes & live music

Proceeds will go directly towards programs and collection care so that the Wagner can continue to make science accessible to all.

Tickets are limited, buy yours now! See the website for more information.

The Diagraphoscope – A Wonder-working Machine

by Caroline Rance, a.k.a The Quack Doctor

<http://thequackdoctor.com/>

Twentieth-century businessman X. W. Witman saw a lot of potential in X-rays. Doctors might get excited about their emerging medical application, but for him X-rays offered something even better – the chance to get rich quick. If you could X-ray Witman's head, the plate would display a fine collection of dollar signs.

Adverts puffed his Diagraphoscope as the eighth wonder of the world – a marvellous invention whose *force '... is doing more for diseases than an ocean of drugs or a forest of surgeons' knives.'*

Trading as the Advanced Medical Science Institute, (or the Ozona Company, or one of several other names), Witman and his associates took the machine on tour, setting up temporary offices in well-populated towns and moving on – sometimes rather quickly – when the time was right.

A window to the human body

The Diagraphoscope of the adverts was a wonder indeed. A screen made of a mysterious *compound 'which costs in the rough just five times its weight in gold,'* it emitted rays so powerful that they could pierce three feet of solid wood to reveal a copper cent on the other side. Nevertheless, they were harmless to the human body. When suspended in front of a person, the screen's 'radio forces' kicked into action to reveal the detailed 3D image of every internal organ. The beat of the heart, the rise and fall of the diaphragm, hidden bullets, gallstones and kidney stones appeared so clearly that:

'..it all makes the formerly vaunted X-ray look like a toy.'

Too complicated for doctors

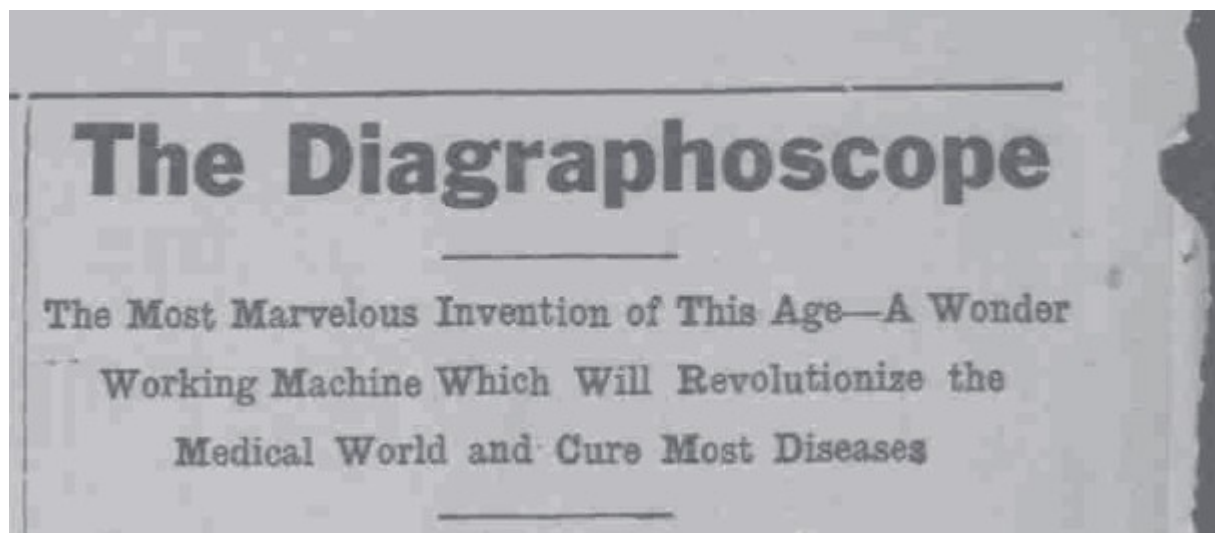
One might expect such a groundbreaking invention to have been the talk of the medical world, so why in October 1911 was the US's only Diagraphoscope holed up in room 303 of the El Paso newspaper offices?

Witman had an answer for that. The enormous cost of the machine was beyond the means of hospitals, and to become an expert Diagraphoscope operator required *'a long course of arduous study' that most doctors simply couldn't hack.'*

By implying that his contraption was too advanced for them, Witman was using the perennial technique of discrediting the medical profession – but he also sought to align himself with them by claiming that his discovery astounded eminent doctors. His adverts relate the outcome of a (presumably fictional) demonstration in New York City, *where 'The usual calm physicians broke into expressions of astonishment,'* at the sight of a patient's innards in all their visceral glory. They lauded the machine's operator for his *'almost supernatural faculty of accomplishing that which lesser mortals have deemed impossible.'*

Not all it's cracked up to be

Karl E. Murchey, of the Vigilance Committee of the Associated Advertising Clubs of America, found the Diagraphoscope rather less impressive. He described it as a circular



Headline for a Diagraphoscope Advert - The El Paso Herald, 4 October 1911

tube full of coloured liquid, an ordinary photographer's hood through which the practitioner viewed the patient, and an electric buzzer to provide appropriate sound effects. Murchey related that in an unnamed town, the Diagraphoscope diagnosed a 'mystery shopper' with a micro-organism of the stomach. This terrible condition was akin to cancer, but – thank goodness! – he was just in time to be saved. His evidence resulted in a warrant for the practitioner's arrest, but the Advanced Medical Science Institute skipped town on the morning of the hearing.

A Six Million Dollar Man?

In spite of the Diagraphoscope's miraculous properties, its purely diagnostic function left scope for the Institute to develop separate therapeutic devices. A plethora of other inventions shared Witman's battered travelling trunk, including a 'multiple machine' that could almost raise the dead.

In 1912 an advert described the case of Herbert Beatty, preparing to meet his maker after a motorcycle accident. The Institute provided him with a glass eye, an artificial nose, a silver plate in his skull and a false lining in his stomach. The latter was deposited 'by a powerful current which is perfectly harmless and painless; bismuth is used, as that metal can be removed after a cure by simply reversing the polarity of the current.'

Louisville isn't fooled

Witman made an effort to keep his company within the law by employing a registered physician, Dr George W. Foreman, who had graduated from Kentucky Medical School in 1902. And it was in Kentucky in 1912 that the Diagraphoscope's luck ran out. Adverts in the Louisville papers at-

tracted attention from the State Board of Health and Witman, Foreman and two others were arrested on 18 counts of failing to file certificates naming those conducting the business, and two counts of practising medicine illegally. Witman received fines totalling \$700. After a grilling by the court, George Foreman was fined \$50, while the cases against the other two were dismissed. Within an hour, the offices had closed down – a good result for Louisville, but the cynical *Journal of the American Medical Association* predicted that the Advanced Medical Science Institute would soon pitch up in another unsuspecting town.

The Diagraphoscope might not have rendered X-rays obsolete, but Witman's advertising did foreshadow one modern development. These words of wisdom from 1911 would not look out of place if they were typed in Comic Sans against a garish background and spewed into your Facebook timeline by some loser you hated at school:

People who say 'It can't be done' are interrupted by some one doing it.

Caroline Rance is a UK based MA student studying Medicine, Science and Society at Birkbeck College, University of London. Her dissertation is about charlatanry in the treatment of male sexual dysfunction in Britain, 1850-1870. She is not a health professional. She is The Quack Doctor and not qualified to give medical advice which makes her a perfect candidate to be an Honorary Member of the Canadian Witch Doctors Association.

Caroline's website is: <http://thequackdoctor.com/>

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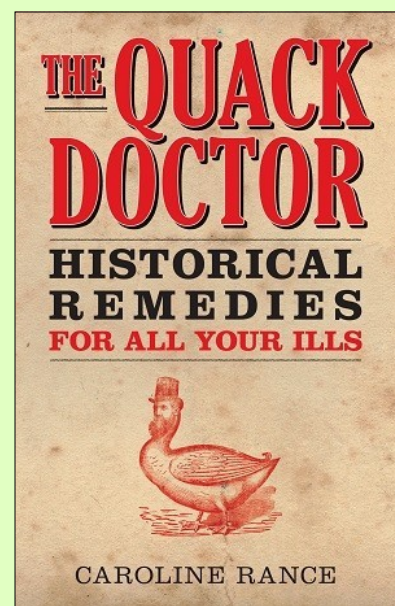
The Quack Doctor: Historical Remedies for all your Ills

by Caroline Rance

Paperback Published: 2013-10-15 ISBN: 9780752487731

From the harangues of charlatans to the sophisticated advertising of the Victorian era, quackery sports a colourful history. Featuring entertaining advertisements from the nineteenth and early twentieth centuries, this book investigates the inventive ways in which quack remedies were promoted – and suggests that the people who bought them should not be written off as gullible after all. There's the Methodist minister and his museum of intestinal worms, the obesity cure that turned fat into sweat, and the device that brought the fresh air of Italy into British homes. The story of quack advertising is bawdy, gruesome, funny and sometimes moving – and in this book it takes to the stage to promote itself as a fascinating part of the history of medicine.

This book may be purchased at Amazon.com



COMB JELLY DNA STARTLES SCIENTISTS

by Paul Schlueter III

Convergence is a tricky word in biology. In the usual sense, it refers to disparate objects coming together at a common point, much as several streams converge to form a river. In genetics, though, convergence has a different and counter-intuitive meaning: the circumstance in which different species independently evolve characteristics which appear similar. An example of convergence is the fact that insects evolved wings once during evolution, and much later wings developed in birds. The appearance and function of wings in both genera appear to be similar, but they do not evolve from a common line of descent. Insect wings are "an attachment" on their backs (independent of their six legs), while birds' wings are a variant limb type (a far different structure). Wings evolved yet again (quite separately, yet also as limb variants) in mammalian bats.

The development of wings is a classic example of something biologists say only happens rarely; convergence is thought to be the exception, not the norm. This has been a foundational basis for taxonomy, the study of species' relationships by comparison of their anatomical features. In this scientific tradition, it is presumed that a characteristic develops once, and then might be modified over evolutionary time into different forms, yet all those forms come from a single evolutionary development in a common ancestral species. Scientists are slowly discovering that this is not exactly how things work in nature. A purely parsimonious theory has been over-ruled by a truth which turns out to be more complex than once thought.

Only very recently, scientists have been able to analyze DNA itself, and to compare the DNA of different species to learn where (and perhaps roughly, when) evolutionary mutations occurred. The thing is, DN
A studies have occasionally surprised scientists, indicating

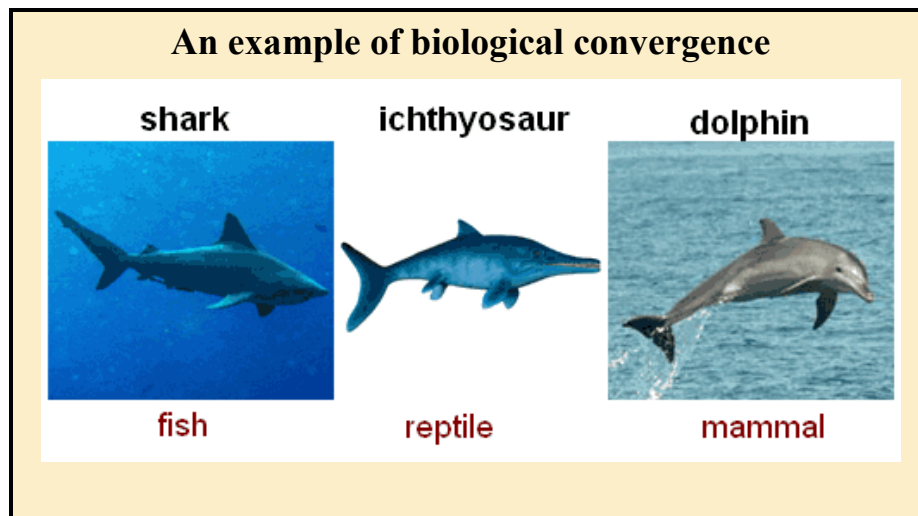
that some species are related differently than anatomical taxonomy suggests. This has led to some redrawing of the "tree of life," the theoretical family tree of species development. So far, this has been relatively moderate redrawing, among species that share many similarities. However, new studies are suggesting that convergence may have occurred in a much more dramatic place, where the development of central nervous systems, musculatures, and skeletal structures began.

Amy Maxmen reported on this story in Science News, May 18, 2013, as a freelance science writer. Her story was given six full pages, making it a feature article. It discusses the family of comb jellies, aquatic animals distinct from jellyfish in that they have "mesoderm tissue" between their outer skins and their inner guts, and also in that they have rows of

hairlike "cilia" which they use for propulsion (thus, the "comb" in their name).

Anatomical taxonomists have classified comb jellies as more-complex descendants of jellyfish and sponges. Sponges have but one single layer of cells, all of which are alike. Jellyfish have two tissue layers (making them "diploblastic"), an ectoderm "skin" and an endoderm "gut"; between these is a space which is acellular, or lacking tissue. Comb jellies are said to be "triploblastic", having a middle, third layer of tissue, the mesoderm. The mesoderm is the root tissue that evolves into internal organs, such as bone, muscle, and nerves. Bilateral symmetry (the characteristic of having two body sides which are approximate mirror images of one another) is thought to have come along far later in evolution, yet there are some comb jellies which seem to have a version of this characteristic, too (the sea gooseberry comb jelly is one).

Where this startles scientists is that DNA does not seem to support this idea of the order of evolutionary development.



Comb jellies have nervous systems, and even brains, yet their DNA seems to indicate that they evolved BEFORE the less-complex sponges and jellyfish (the latter of which belong to the family cnidarians). This means that, according to the genomes, it looks like either the complexity of comb jellies developed independent of similar characteristics elsewhere in the animal kingdom, or the complexity of a common ancestor was lost as the sponges and cnidarians evolved along a separate course, and then was regained.

Remember that all life on Earth today is equally evolved, in the sense that it has all taken an equal time in getting to this point from the first organism. Everything came from common ancestors, but developed independently along the branches of the family tree. Humans did not come from apes; both humans and apes came from a different non-human, non-ape species which probably lived some six million years ago, and our lines have separately evolved in parallel since that split. Sponges, cnidarians, and comb jellies all had a common ancestor, but each family split apart from the others to begin developing separately at some point in time. The question is, which group split away first? It now appears that the comb jellies split off before either of the others, which goes against the suggested order taken from anatomy studies.

Maxmen presents something of a rough timeline in her SN story: In the '90s, early genome studies predicted that the complexity of species was reflected in the gene count in their DNA. It was thought that a more complex species would necessarily have far more genes than one less complex. However, it turned out that humans, with some 22,000 genes, don't have many more than the star sea anemone, which lacks a spinal cord and skeleton (among many other features). So, we learned, the number of genes present doesn't necessarily indicate a species' potential complexity. We're still figuring out what particular genes actually do, but it appears that many are copies of other stretches on the genome, others are "dormant," and still others lack obvious purpose. The sea star anemone study can be found in a report in *Science*, from 2007 (Maxmen did not identify the report further).

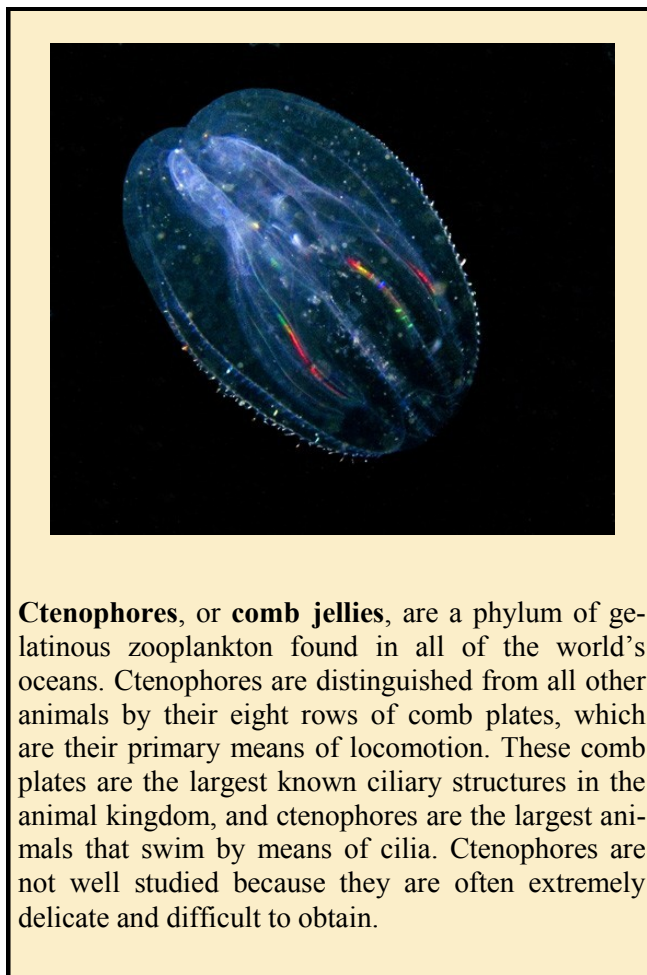
In '08, Andreas Hejnol (Sars International Center for Marine Molecular Biology, in Bergen, Norway) reported in *Nature* that building an evolutionary tree from shared stretches in the genome (rather than from shared anatomical traits)

indicated that comb jellies belong ahead of ("below") the brainless sponges. His team thought the result an anomaly, and almost didn't publish that finding, until urged to do so by peer reviewers.

Andy Baxevanis (the National Human Genome Research Institute, in Bethesda, MD) led a team who studied the comb jelly *Mnemiopsis leidyi*, which can be easily collected just off Cape Cod. They took on the animal's entire genome (as genetic analysis develops, scientists are moving away from analyzing mere sections of genomes, and toward analyzing the entire structure). His mathematical models place comb jellies at the base of the animal tree, but doesn't quite reach conclusive certainty about whether comb jellies or sponges came first. Either way, his team's work indicates that the less-complex jellyfish (cnidarians) evolved later. LIM proteins (which help cells adhere and communicate) are less prevalent in comb jellies than in other animals. Cell growth and metabolism molecules are missing in both comb jellies and sponges. Hox genes, which help determine the placement of body parts, are also absent in comb jellies and sponges. Finally, comb jellies appear to be the only animal family lacking microRNAs and their molecular foundations.

Baxevanis gave a talk on this topic at the January, 2013, Society for Integrative and Comparative Biology meeting, in San Francisco. According to Maxmen, there were also 13 other presentations and posters related to the genome of comb jellies at that meeting, as well. It seems to be a major topic of research in the field.

Leonid Moroz (University of Florida, Laboratory for Marine Bioscience, St. Augustine) has fully sequenced the genome of the sea gooseberry (*Pleurobrachia bachei*) as well. He had once surmised that the early nervous systems of comb jellies might be precursors of our own. His team (and Baxevanis's, working independently) found that their comb jellies lacked genes encoding for serotonin, dopamine, and other neurotransmitters. They also lack proteins that guide the growth of neurons. Muscle genes were highly unusual in comb jellies, too. It all adds up to support the contention that comb jellies branched off first, and later developed their anatomical complexity separately from its later development in the line of species that lead to other animals, and eventually



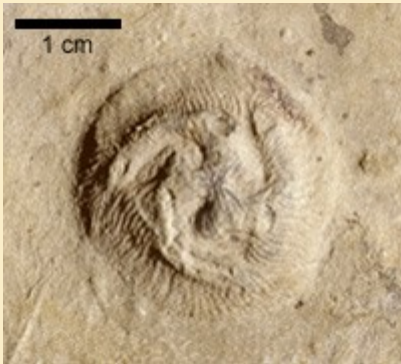
Ctenophores, or comb jellies, are a phylum of gelatinous zooplankton found in all of the world's oceans. Ctenophores are distinguished from all other animals by their eight rows of comb plates, which are their primary means of locomotion. These comb plates are the largest known ciliary structures in the animal kingdom, and ctenophores are the largest animals that swim by means of cilia. Ctenophores are not well studied because they are often extremely delicate and difficult to obtain.

to us. So, our nervous system doesn't appear to be descended from comb jellies, after all!

Moroz thinks comb jellies started off simple, when their lineage diverged some 550 million years ago. It was probably at some point far down their independent path of evolution that their complexity emerged, in parallel to the evolution of other families of animal. The earliest comb jellies didn't fossilize, due to their gelatinous structure. The Ediacarian Period (635 to 542 Mya) left some fossilized evidence

Also, a lack of fossils of precursor or intermediate forms doesn't mean that subsequent forms were created whole and in their observed fossil forms. Rather, new fossils are being discovered all the time, and many life forms (particularly the early, less-complex forms) had a structure not conducive to fossil preservation. Because of this, our new study of genomes may lead to many more surprises and revelations, because DNA is the one common thread in all complex life known today. It is admittedly difficult to grasp all the possi-

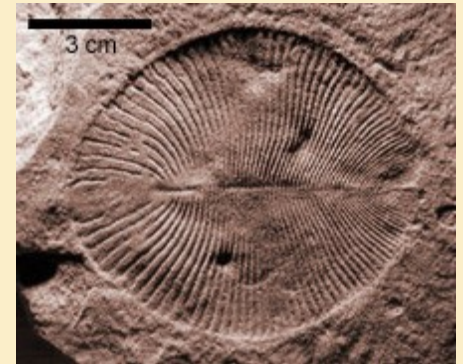
Three Ediacaran Period fossil animals



Tribrachidium



Cyclomedusa



Dickinsonia

of animal life, but it is almost entirely unrecognizable, having structures that cannot be easily placed in the categories we now recognize. It is possible that comb jellies are one of few families which survived the period (whereas sponges, of which there are now some 8,000 species, were quite successful).

In fact, scientists are not yet certain about how to categorize the earliest forms of life in building the animal family tree. The best, most-advanced studies give inconsistent results, depending on the mathematical analyses used in comparing genomes. Science still doesn't fully understand which genes perform which functions, but they're making progress. Incomplete knowledge doesn't indicate a "gap" awaiting the insertion of divine intervention as an explanation; it merely indicates that knowledge comes in bits and pieces, developing and filling in the blanks over a period of time.

ble permutations of a biological code built with four nucleotides (let alone which permutation preceded another), but we're learning how to read that code, and as we become DNA-literate, we'll better understand the development, and the inter-relatedness, of all life. The details may very well confuse and confound observers like you and me, but it's fascinating to be alive and to have a curious mind in this day and age, as the work is progressing in such marvelous steps and stages.

Paul Schlueter III is serving Life in Prison in NE Pennsylvania. His supporters have created a website about him.

www.jaylbird.org

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“The great age of the earth will appear greater to man when he understands the origin of living organisms and the reasons for the gradual development and improvement of their organization. This antiquity will appear even greater when he realizes the length of time and the particular conditions which were necessary to bring all the living species into existence. This is particularly true since man is the latest result and present climax of this development, the ultimate limit of which, if it is ever reached, cannot be known.”

~ Jean-Baptiste Lamarck (1744 - 1829), French biologist, pre-Darwin evolutionist

PHACT CALENDAR

PhACT Events

Dr. David Cattell, Chairman of the Physics Department of Community College of Philadelphia hosts meetings of **PhACT** - at 2:00 PM on the third Saturday of most months at Community College of Philadelphia.. Parking is easily available and costs \$4.00 for all day. Enter the college parking lot on 17th Street which is one way south bound. This meeting site is handicap accessible. **PhACT Meetings are Free and open to the public unless otherwise noted.**



Saturday, November 16, 2013 at 2:00 PM - Professor Dave Goldberg of Drexel University, a physicist and cosmologist, will discuss: "Why Symmetry Matters" a description of the beautiful simplicity of the universe.

Despite appearances to the contrary, the universe is a very orderly, and surprisingly elegant place. But at some level, the order of the universe is a broken one. Why does time run one way and not the other? Why are you made of matter and not antimatter? Why is Spiderman such an ill-conceived premise? Symmetry (and symmetry breaking) lie at the heart of it all. We'll take a fast-paced tour of symmetry in physical laws, and meet one of the great unsung heroines of mathematical physics: Emmy Noether. Noether provided the connected between symmetries and conservation laws, providing the groundwork for modern work on supersymmetry and the search for Grand Unified Theories.

Saturday, January 18, 2014 at 2:00 PM - Professor Brian Regal of Kean University in Union New Jersey will discuss Bigfoot and Cryptozoology.

Saturday, February 15, 2014 at 2:00 PM - Professor Alan Mann of Princeton University will discuss Human Evolution.

Saturday, March 15, 2014 at 2:00 PM - T.B.A.

The **PhACT Calendar** is open to members and non-members who wish to announce meetings and events of other groups of which they are interested or affiliated. These events should be of some general interest to the Skeptical or Scientific community and should be within a reasonable radius of Philadelphia. Send submissions to the editor at phactpublicity@aol.com. Keep the announcements brief. Space is limited and insertions will be made on a first come-first served basis after the needs of PhACT are accomplished. Phactum does not accept paid advertising.



The Philadelphia Area Center for the History of Science (PACHS) maintains an extensive calendar of events about the history of science, technology and medicine that may contain some interesting events not listed in the Phactum Calendar. Check out their website at:

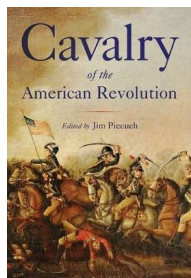
<http://www.pachs.net/events>

Wednesday October 30, 2013, at 7:00 PM.
American Revolution Round Table of Philadelphia.
Location to be determined. Location to be determined. Check website

Jim Piccuch will be discussing his book, *Cavalry of the American Revolution*. He will be coming from Georgia to give this talk.

ARRTOP events are Free and Open to the Public.

<http://arrtop.com>



Wednesday, October 30, 2013 - 5:30pm to 7:30pm at the **American Philosophical Society**, Benjamin Franklin Hall, 427 Chestnut Street, Philadelphia

<http://www.amphilsoc.org/>

On Paper: The Everything of Its Two-Thousand-Year History by Nicholas Basbanes

Lecture, Reception, and Book Signing

Nicholas Andrew Basbanes has written a thoroughgoing chronicle about the stuff books are traditionally made of: paper. He starts with its invention in China 1800 years ago, considers its use for everything from currency to the blueprints that facilitated the Industrial Revolution, and records a visit to the National Security Agency, where 100 million secret documents have been pulped and recycled as pizza boxes.

Basbanes graduated from Bates College and received a master of arts degree from Pennsylvania State University. He received his master's degree in journalism in 1969 while serving aboard the aircraft carrier USS Oriskany during the first of two combat deployments he made to Yankee Station in the Gulf of Tonkin, off the coast of Vietnam. His first book, *A Gentle Madness: Bibliophiles, Bibliomanes, and the Eternal Passion for Books*, was a finalist for the National Book Critics Circle Award in non-fiction for 1995, and was named a New York Times notable book of the year. He was commissioned by Yale University Press to write a centennial history of the Press, *A World of Letters*.

In addition to his books, Basbanes has written for numerous newspapers, magazines, and journals. He writes the "Gently Mad" column for *Fine Books & Collections* magazine, and lectures widely on book-related subjects. Book lovers relish meeting people who share their passion, just as all aficionados gravitate toward their own kind. So when Nicholas Basbanes, the king of bibliophiles, speaks here...there's sure to be a like-minded crowd on hand to absorb his every word.

Free. To register: <http://www.amphilsoc.org/node/1841>

Wednesday, October 30, 2013 at 6-7:30 PM at the **Wagner Free Institute of Science**, 1700 West Montgomery Avenue, Philadelphia, PA 19121

ph 215-763-6529 www.wagnerfreeinstitute.org

Weeknights at the Wagner

Preserving the Final Moment: A Brief History of Embalming in America with Anna Dhody

Wednesday, October 30, at 6:30 pm at **College of Physicians of Philadelphia**, 19 South Twenty-Second Street, Philadelphia, PA 19103

http://www.collphyphil.org/prog_calendar.htm

Grover Silcox's "Edgar Allan Poe and the Flip Side of Comedy"

It's hilarious, tragic, wild, and right at home at The College of Physicians of Philadelphia and the Mütter Museum. Local comic legend Grover Silcox returns for a mischief night of bawdy, Victorian laughs in his one-man show of the poetry, drama and irony of Edgar Allen Poe.

Free to Members; Non-Members \$10

Pre-registration for all programs and events is strongly urged. For further information regarding events and registration, please e-mail info@collegeofphysicians.org or call 215-399-2341.

Saturday, November 2, 2013 | All Day at **College of Physicians of Philadelphia**, 19 South Twenty-Second Street, Philadelphia, PA 19103

http://www.collphyphil.org/prog_calendar.htm

The Mütter Museum's Annual Day of the Dead Festival

Come celebrate this traditional Mexican holiday with an all-day event at the Mütter Museum! Decorate sugar skulls, enjoy traditional food and drink, visit the Museum, and come to a presentation by speaker Linda J. Lee entitled "Raising the Dead in Fairy Tales."

Speaker: Linda J. Lee, co-curator of the Grimms' Anatomy exhibit at the Mütter Museum and professor of humanities, folklore, literature, and writing at area universities, including Penn, Temple, Philadelphia University, and University of the Arts.

Sponsored by the Mütter Museum of The College of Physicians of Philadelphia.

Included with regular museum admission.

Sunday, November 3, 2013 at 1:00pm at **Laurel Hill Cemetery**, 3822 Ridge Avenue, Philadelphia, PA19132. 215-228-8200

<http://www.thelaurelhillemetery.org>

Crooked Cronies:

Philadelphia's Profiteering Politicians of the Past

Lincoln Steffens notoriously described 19th century Philadelphia as "corrupt and contented." Yes, the city has its rogues and rascals, but it also

SOCRATES CAFE is moderated by: Lewis Mifsud, Ph.D., P.E., a member of PhACT and of The American Academy of Forensic Sciences. At 7:00 PM every Monday evening except holidays (on Tuesdays after a Monday holiday) at the Springfield Township Public Library (215-836-5300) at 1600 Papermill Mill Road, Wyndmoor, PA. 19038. This philosophical discussions group is free and open to the public. Join us and share your critical thinking, questions and opinions.



A New Reading Circle: The Institute for Religion and Science.

Our Reading Circle is meeting from 6:30 pm – 8:00 pm beginning in November on the second Monday of the month in the William Walker Room of the Logue Library to discuss **Ilia Delio's *The Emergent Christ***. If you are interested in joining us, please contact us at Institute4RS@chc.edu

See website: www.irands.org

had reformers. We will visit the grave of the Philadelphia patrician who realized that only a political boss could hold the unruly city together and then set out to become that boss. We will stand at the burial place of the Congressman who would have had one the largest monuments in Laurel Hill Cemetery if the treasurer of his memorial committee hadn't run off with the funds. And, we will remember the scholarly historian who organized the predecessor to our modern-day Committee of Seventy.

Don't despair. If party politics was basically a fight between boys' clubs, Philadelphia women were active on a broad social front. We won't forget the ladies who opposed segregation on street cars, established model tenements, and fought for a safer food supply.

The tour will take place on Sunday, November 3 at 1:00pm, departing from Laurel Hill Cemetery's Gatehouse entrance at 3822 Ridge Avenue, Philadelphia, PA 19132. Free parking is located in the lot across the street from the Gatehouse.

The cost is \$12/person; or \$10/students and seniors. Reservations are suggested. Tickets can be purchased at the door, or in advance by phone (215) 228-8200 or online.

Guide: Michael Brooks, Ph.D.

Tuesday, November 5, 2013 at 12:00 to 1:00 p.m. at the Chemical Heritage Foundation, 315 Chestnut Street, Philadelphia, PA 19106

Tel: 215-925-2222 • <http://www.chemheritage.org>

Brown Bag Lecture: "Thomas Wijck's Painted Alchemists at the Intersection of Art, Science, and Practice"

A talk by Elisabeth Berry-Drago

Dutch images of alchemists in the laboratory have long been overlooked by art historians as moralizing satires catering to a disbelieving audience. This project examines afresh the alchemical pictures of Thomas Wijck (1616–1677), seeking to understand how artistry and alchemy met and merged in the early modern studio and laboratory. In addition to iconographical and historical concerns, emphasis is placed on Wijck's paintings as transformative objects produced in a studio-workshop: raw materials, pigments, and chemical processes will shed light on the practices of painters and their role in a greater "Golden Age" of discovery.

Elisabeth Berry Drago is a Ph.D candidate in art history, specializing in 17th-century Netherlands. Her dissertation centers on the painter Thomas Wijck (1616–1677), whose pictures of alchemists in the laboratory offer new perspectives on early modern science and artistry. Elisabeth received her M.A. in art history from Temple University in 2010 and holds a B.A. in fine arts from SUNY Fredonia. In her free time she enjoys volunteering with the Fleisher Art Memorial, a community arts organization, and the Free Library of Philadelphia, teaching youth workshops in painting and drawing, comics, and picture-book illustration. Open to the Public. Free. No Registration Required

Tuesday, November 5, 2013 at 7:00 PM at Washington Memorial Chapel, on Route 23 in Valley Forge.

Friends of Valley Forge Park

Historian Michael Axelrod will discuss The American Flag: Past, Present, and Future

A reception will follow.

<http://www.friendsofvalleyforge.org/speaker-series.shtml>

Free and Open to the Public.

Wednesday, November 6, 2013 at 7:00 PM at Frankford Hall on Frankford Avenue just north of Girard Avenue.

Philadelphia Nerd Nite ... be there and be square, yo.

Science discussions, good food, good company, and plenty of beer!

For more information see the website at

<http://philadelphia.nerdnite.com/updates/>

The next Nerd Nite is Wednesday, December 4, 2013.

Open to the Public. Admission \$5.00

Email us at: nerdnitephilly@gmail.com

Wednesday, November 6, 2013 at 2:00 pm at University of Pennsylvania Museum, 3260 South Street, Philadelphia, PA 19104

<http://www.penn.museum/events-calendar>

"Great Voyages" Lecture

Ignacio Gallup-Diaz, Associate Professor, History, Bryn Mawr College
Ferdinand Magellan, 'Our One True Guide': The First Circumnavigation of the Globe, 1519—1522

Magellan's circumnavigation was a complex event—a feat of navigation and exploration that also saw hardship, shipwreck, and mutiny visited upon the expedition's crew. In a process that would become paradigmatic, Europeans found themselves enmeshed in regional and local politics—a causative element in Magellan's death. Dr. Gallup-Diaz examines the varied and interconnected maritime, cultural, and political factors that came together during Magellan's circumnavigation. Sign up for a series subscription and save: \$40, general public; \$15, Penn Museum members. Individual lecture with advance registration: \$5, general public; \$2, Penn Museum members; \$10 at the door based on availability. Free for students with college ID.

Register: <https://446.blackbaudhosting.com/446/>

Friday, November 8, 2013 at 5:30-8 PM at the Wagner Free Institute of Science, 1700 West Montgomery Avenue, Philadelphia, PA 19121

ph 215-763-6529 www.wagnerfreeinstitute.org

SAVE THE DATE - A Sip of Science 2013 Benefit Cocktail Party

Saturday, November 9, 2013 at 1:00pm at Laurel Hill Cemetery, 3822 Ridge Avenue, Philadelphia, PA19132. 215-228-8200

<http://www.thelaurelhillemetery.org>

From Sails to Steel:

Shipbuilders of Philadelphia

Philadelphia was a vital center of American shipbuilding in the 19th century and produced a broad variety of vessel types, from passenger liners to battleships. Every aspect of shipbuilding is represented by one or more of the souls at rest in Laurel Hill Cemetery, from engines to ropes, from wharfs to hulls, and from wood to steel. You're invited to learn the mythic stories of Philadelphia's maritime history in this autumn afternoon walking tour.

The tour will take place on Saturday, November 9 at 1:00pm, departing from Laurel Hill Cemetery's Gatehouse entrance at 3822 Ridge Avenue, Philadelphia, PA 19132. Free parking is located in the lot across the street from the Gatehouse.

The cost is \$12/person; or \$10/students and seniors. Reservations are suggested. Tickets can be purchased at the door, or in advance by phone (215) 228-8200 or online.

Guides: Daniel M. Dailey and Ken Milano

Saturday, November 9, 2013 at 01:30PM - 03:00PM at University of Pennsylvania Museum, 3260 South Street, Philadelphia, PA 19104

Lecture: Where the Gods Sleep: Patron Deity Temples among the Classic Maya

<http://www.penn.museum/events-calendar>

Sunday, November 10, 2013 at 11:00 am at Laurel Hill Cemetery, 3822 Ridge Avenue, Philadelphia, PA19132. 215-228-8200

<http://www.thelaurelhillemetery.org>

Marine Corps Anniversary Service and KIA Veterans' Day Tour

Join active and retired members of the United States Marine Corps at Laurel Hill Cemetery as they commemorate the 238th anniversary of the founding of the Marine Corps in Philadelphia on November 10, 1775. A service will take place at the gravesite of Brigadier General Jacob A. Zeilin, the first United States Marine non-brevet general, who served as the seventh Commandant of the Corps from 1864 to 1876. After the service, the Cemetery will mark Veterans' Day with a tour of the final resting places of the heroes who made the ultimate sacrifice for our country. Learn about the people who died in battle in the Revolutionary War, the Indian Wars, the War of 1812, the Mexican War, the Civil War, the Spanish American War, World War I, World War II, in Korea, and in Vietnam. Their heroic exploits will be relived and honored.

The service and tour will take place on Sunday, November 10 at 11:00pm, departing from Laurel Hill Cemetery's Gatehouse entrance at 3822 Ridge Avenue, Philadelphia, PA 19132. Free parking is located in the lot across the street from the Gatehouse.

Free and open to the public. Guide: Anthony Waskie, Ph.D.

Monday, November 11, 2013 at 6:00PM at University of Pennsylvania Museum, 3260 South Street, Philadelphia, PA 19104

Evening Lecture: Prastio Mesorotsos Expedition
<http://www.penn.museum/events-calendar>

Monday, November 11, 2013 at 8 PM at Delaware County Institute of Science, 11 Veterans Square, Media, PA 19063

Lecture by Torben Jenk. 250th Anniversary of the Mason-Dixon Line
<http://delcoscience.org>

Monday, November 11, 2013 at 6:00 p.m at National Mechanics, 22 S. Third Street, Philadelphia, PA 19106

Science on Tap

A monthly gathering that features a brief, informal presentation by a scientist or other expert followed by lively conversation. Good food and beer.

This month's Science of Tap is brought to you by the Chemical Heritage Foundation.

Must be 21 or accompanied by parent. Free and open to the Public.

<http://scienceontaphilly.com/>



Tuesday, November 12, 2013 at 12:00 to 1:00 p.m. at the Chemical Heritage Foundation, 315 Chestnut Street, Philadelphia, PA 19106

Tel: 215-925-2222 • <http://www.chemheritage.org>

Brown Bag Lecture: Robert Slate

A talk by Robert Slate

Robert Slate is a Beckman Center fellow whose current research project is entitled "Regulating Nanomaterials: Drawing Lessons from TSCA and REACH."

Open to the Public. Free. No Registration Required

Wednesday, November 13, 2013 at 7:30 PM at The Franklin Institute Science Museum, located in Center City Philadelphia, at the intersection of 20th Street and the Benjamin Franklin Parkway.

<http://www.fi.edu>

Rittenhouse Astronomical Society Monthly Meeting

Bring all of your out-of-this-world questions!

Join The Rittenhouse Astronomical Society on the second Wednesday of each month at 7:30PM in the Fels Planetarium. The society offers all persons an opportunity to participate in the activities of an astronomical group at the layman's level. It is a popular science club that keeps its members up-to-date on the latest developments. No experience is necessary to attend the FREE meetings.

www.rittenhouseastronomicalsociety.org

Thursday, November 14, 2013 at 7:30PM at 7:30PM at the Free Library of Philadelphia, 1901 Vine Street, 19103

<http://libwww.freelibrary.org/authorevents/>

Julius Erving | Dr. J: The Autobiography

Julius Erving, the legendary "Dr. J," enthralled basketball fans for 11 seasons with the Philadelphia 76ers, leading the team to the NBA crown in 1983. The dominant player of his era, Erving was one of the first players to make individual expression a vital part of the game, with his graceful midair spins and twirls punctuated by powerful slam dunks. Elected to the Naismith Memorial Basketball Hall of Fame in 1993, Erving was an 11-time All Star. He received the J. Walter Kennedy Citizenship Award in 1983 and in 1996 was named one of Sports Illustrated's 50 Greatest Players in NBA History. In his new memoir, the Philadelphia legend reflects on his life on and off the court.

FREE. No tickets required. For Info: 215-567-4341

Saturday, November 16, 2013 at 3:30PM at University of Pennsylvania Museum, 3260 South Street, Philadelphia, PA 19104

Afternoon Lecture: Archaeology in Egypt

<http://www.penn.museum/events-calendar>

Sunday, November 17, 2013, 2 pm – 4:30 pm at Commonwealth Chateau, Sugar Loaf campus, Chestnut Hill College
 9230 Germantown Avenue, Philadelphia, PA 19118

The Institute for Religion and Science: <http://www.irands.org>

Conversations about Near-death Experiences

Facilitated by David Hufford, PhD and others

This event is open to the public. A free will offering is suggested.

Registration is required. For more information or to register please send an email to kduffy@chc.edu

PhACT Event

Saturday, November 16, 2013 - at 2:00 PM

**Professor Dave Goldberg will discuss:
 "Why Symmetry Matters" a description of the
 beautiful simplicity of the universe.**

Sunday, November 17, 2013 at 2:00 PM at University of Pennsylvania Museum, 3260 South Street, Philadelphia, PA 19104

Pompeii Lecture Series: Life and Death in Herculaneum

<http://www.penn.museum/events-calendar>

Monday, November 18, 2013 at 7:30PM at the Free Library of Philadelphia, 1901 Vine Street, 19103

<http://libwww.freelibrary.org/authorevents/>

Deepak Chopra | What Are You Hungry For?: The Chopra Solution to Permanent Weight Loss, Well-Being, and Lightness of Soul
 at 7:30PM

"The poet-prophet of alternative medicine" (Time), Deepak Chopra is the author of more than 70 books on mind-body health, spirituality, and peace, including numerous New York Times bestsellers. One of Time's top 100 heroes and icons of this century, he is the founder of the Chopra Foundation and the Chopra Center for Well Being. He is a Fellow of the American College of Physicians, a member of the American Association of Clinical Endocrinologists, a Distinguished Executive Scholar at Columbia Business School, and a Senior Scientist at the Gallup organization. In his new book, Chopra reveals how overeating is often a symptom of hunger for love and happiness, and outlines an approach to eating that will lead to permanent weight loss and spiritual well-being.

Cost: \$32 General Admission

<http://libwww.freelibrary.org/authorevents/tickets.cfm>

Book included with ticket.

Tuesday, November 19, 2013 at 12:00 to 1:00 p.m. at the Chemical Heritage Foundation, 315 Chestnut Street, Philadelphia, PA 19106

Brown Bag Lecture: Whither the History, Whither the Future of Chemical Information?

A talk by Leah McEwen

Open to the Public. Free. No Registration Required

Tel: 215-925-2222 • <http://www.chemheritage.org>

Tuesday, November 19, 2013 at 6.30pm at College of Physicians of Philadelphia, 19 South Twenty-Second Street, Philadelphia, PA 19103

Italian Contributions to Medicine

http://www.collphyphil.org/prog_calendar.htm

Pre-registration for all programs and events is strongly urged. For further information regarding events and registration, please e-mail

Wednesday, November 20, 2013 at Noon at College of Physicians of Philadelphia, 19 South Twenty-Second Street, Philadelphia, PA 19103

Italian Contributions to Medicine

Food & Thought: From Life Support to Recovery: Keeping a Great

Orchestra Alive

Speaker: Allison Vulgamore, President and Chief Executive Officer of The Philadelphia Orchestra

http://www.collphyphil.org/prog_calendar.htm

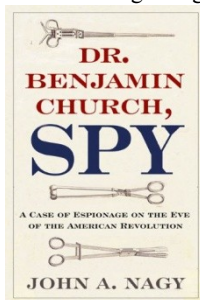
Pre-registration required for this event. For further information regarding events and registration, please e-mail

Wednesday November 20, 2013 at 7:00 PM.

American Revolution Round Table of Philadelphia. Location to be determined. Check website.

John A. Nagy will discuss his new book *Dr. Benjamin Church, Spy: A Case of Espionage on the Eve of the American Revolution*. ARRTOP events are Free and Open to the Public.

<http://arrtop.com>

**Thursday, November 21, 2013 at 6-7:30 PM at the Wagner Free Institute of Science, 1700 West Montgomery Avenue, Philadelphia, PA 19121**

ph 215-763-6529 www.wagnerfreeinstitute.org

Weeknights at the Wagner

Running on Water and Other Secrets of Animal Locomotion with Dr. Tonia Hsieh

Thursday, November 21, 2013 at 7:30PM at 7:30PM at the Free Library of Philadelphia, 1901 Vine Street, 19103

<http://libwww.freelibrary.org/authorevents/>

Joe Sacco | The Great War: July 1, 1916: The First Day of the Battle of the Somme

“The heir to R. Crumb and Art Spiegelman” (Economist), cartoon journalist Joe Sacco exposes the bloody reality of war. His books include the American Book Award recipient *Palestine*, *Safe Area Gorazde*, and the bestselling book *Days of Destruction, Days of Revolt*, coauthored with Pulitzer Prize-winner Chris Hedges. A two-time Eisner Award winner and Guggenheim Fellowship recipient, Sacco has served as a graphic reporter for magazines such as *American Splendor*, *The Guardian*, and *Harper's*. In *The Great War: July 1, 1916: The First Day of the Battle of the Somme*, he time-travels to the blackened French countryside and finds a high promontory from which he illustrates a 24-foot-long, single-panel elegy for the thousands of dying and maimed.

FREE. No tickets required. For Info: 215-567-4341

Friday, November 22, 2013 at 10:00am at Laurel Hill Cemetery, 3822 Ridge Avenue, Philadelphia, PA19132. 215-228-8200

<http://www.thelaurehillcemetery.org>

MONTHLY FOURTH FRIDAY TOUR SERIES: HOT SPOTS and STORIED PLOTS

Join Laurel Hill Cemetery for this informative overview of Laurel Hill's long and colorful history, which will include many of the marble masterpieces, stunning views and legendary stories that afford the cemetery its WOW factor. This is the perfect tour for first-time visitors to Laurel Hill, and anyone else who enjoys beautiful art, scenic nature and fascinating history. BRAND NEW “Hot Spots and Storied Plots” will be presented monthly as part of Laurel Hill Cemetery's Fourth Friday tour series, which take place on the fourth Friday of every month at 10:00am.

November's walking tour will take place on Friday, November 22 at 10:00am, departing from Laurel Hill Cemetery's Gatehouse entrance at 3822 Ridge Avenue, Philadelphia, PA 19132. Free parking is located in the lot across the street from the Gatehouse.

The cost is \$8/person general admission. Tickets can be purchased at the door, or in advance by phone

(215) 228-8200 or online. ide: Terri Greenberg

**Saturday, November 23, 2013 at 3:00pm at Laurel Hill Cemetery, 3822 Ridge Avenue, Philadelphia, PA19132. 215-228-8200**

<http://www.thelaurehillcemetery.org>

Laurel Hill's Legendary Civil War Ladies

Join living historian, Kerry Bryan, in period attire as Elizabeth Hutter, Civil War nurse and founder of the Northern Home for Friendless Children. Through the lens of Hutter's own life story, learn about the struggles, accomplishments and tireless efforts of women during the Civil War era. From nursing the sick, to inventions that would aid the Union in warfare, to fundraising to clothe and feed its troops, the ladies of Laurel Hill served their nation in various ways. Benjamin Franklin's granddaughter, Elizabeth Duane Gillespie; founder of Thanksgiving, Sarah Josepha Hale; and wife of the victor of Gettysburg, Margaretta Meade, are just a few of the stories that will be covered. The program will comprise a slide presentation and lecture, followed by a brief tour, and concluding with a seasonal reception inside the cemetery's historic Gatehouse.

The program will take place on Saturday, November 23 at 3:00pm, departing from Laurel Hill Cemetery's Gatehouse entrance at 3822 Ridge Avenue, Philadelphia, PA 19132. Free parking is located in the lot across the street from the Gatehouse.

The cost is \$12/person; or \$10/students and seniors. Reservations are suggested. Tickets can be purchased at the door, or in advance by phone (215) 228-8200 or online.

Guide: Kerry Bryan

Tuesday, November 26, 2013 at 7:30PM at 7:30PM at the Free Library of Philadelphia, 1901 Vine Street, 19103

<http://libwww.freelibrary.org/authorevents/>

John Heilemann and Mark Halperin | Double Down: Game Change

Veteran political reporters John Heilemann and Mark Halperin set the national conversation with their no. 1 New York Times bestselling account of the 2008 presidential campaign, *Game Change*. Halperin, editor-at-large and senior political analyst for TIME and senior political analyst for MSNBC, and Heilemann, national affairs editor for New York Magazine and political analyst for MSNBC, provide a colorful portrait of the candidates and spouses who aimed to occupy the White House, leaving the reader with a “vivid, visceral sense of the campaign and a keen understanding of the paradoxes and contingencies of history” (New York Times). The HBO adaptation of the book received five Emmy Awards. *Double Down: Game Change 2012* is a compelling account of the 2012 presidential election.

FREE. No tickets required. For Info: 215-567-4341

Monday, December 2, 2013 at 7:30PM at the Free Library of Philadelphia, 1901 Vine Street, 19103

<http://libwww.freelibrary.org/authorevents/>

Doris Kearns Goodwin | The Bully Pulpit: Theodore Roosevelt, William Howard Taft, and the Golden Age of Journalism

Acclaimed presidential historian Doris Kearns Goodwin has won wide praise for revealing the public and private lives of her subjects against the backdrop of history. She received the Pulitzer Prize for her book *No Ordinary Time: Franklin and Eleanor Roosevelt: The Home Front in World War II*. Her other New York Times bestselling books include *Lyndon Johnson and The American Dream*, *The Fitzgeralds and The Kennedys*, the memoir *Wait Till Next Year*, and *Team of Rivals: The Political Genius of Abraham Lincoln*, recipient of the prestigious Lincoln Prize and the basis for Steven Spielberg's film *Lincoln*. In *The Bully Pulpit*, she examines the first decade of the Progressive Era through the lives of Theodore Roosevelt and his successor, William Howard Taft.

Pine Tree Foundation Endowed Lecture

Cost: \$15 General Admission, \$7 Students

<http://libwww.freelibrary.org/authorevents/tickets.cfm>

Tuesday, December 3, 2013 at 12:00 to 1:00 p.m. at the Chemical Heritage Foundation, 315 Chestnut Street, Philadelphia, PA 19106**Brown Bag Lecture: “What's in a Nomenclature? Structures of Crisis and Reform at the Geneva Nomenclature Congress of 1892”**

A talk by Evan Hepler-Smith



Calling All Astronomers! Rittenhouse Astronomical Society

Monthly Meetings! Bring all of your out-of-this-world questions! Join The Rittenhouse

Astronomical Society the second Wednesday of each month at 7:30 p.m. in the Fels Planetarium at the Franklin Institute. The society offers all persons an opportunity to participate in the activities of an astronomical group at the laymen's level. They aim to spread knowledge, awareness and enjoyment of astronomy and astronomical issues. It is a popular science club that keeps its members up-to-date on the latest developments. No experience is necessary to attend the FREE meetings. Come with your astronomy questions!

www.rittenhouseastronomicalsociety.org/

Tel: 215-925-2222 • <http://www.chemheritage.org>
Open to the Public. Free. No Registration Required

Tuesday, December 3, 2013 at 7:00 PM at Washington Memorial Chapel, on Route 23 in Valley Forge.

Friends of Valley Forge Park

The King of Prussia Inn

Preservationist Michael Morrison talks about the celebrated way-side tavern and its history.

<http://www.friendsofvalleyforge.org/speaker-series.shtml>

Free and Open to the Public.

Tuesday, December 3, 2013 at 7:30PM at the **Free Library of Philadelphia**, 1901 Vine Street, 19103

<http://libwww.freelibrary.org/authorevents/>

Deborah Solomon | American Mirror: The Life and Art of Norman Rockwell

As the celebrated illustrator for The Saturday Evening Post for nearly half a century, Norman Rockwell portrayed a fantasy of American togetherness. In her new biography *American Mirror*, art critic Deborah Solomon trains her eye on the art and the artist who articulated the yearnings and aspirations of a country united by fear. Solomon is the author of two previous biographies of American artists: Jackson Pollock: A Biography and the "perfectly composed, richly nuanced and quietly surprising (Chicago Tribune) *Utopia Parkway: The Life and Work of Joseph Cornell*. She writes about art and culture for many publications, and "Questions For," her weekly interview column, appeared in The New York Times Magazine from 2003 to 2011.

Cost: \$15 General Admission, \$7 Students

<http://libwww.freelibrary.org/authorevents/tickets.cfm>

Wednesday December 4, 2013, at 7:00 PM. American Revolution Round Table of Philadelphia. Location to be determined. Check website

Thomas Fleming will discuss the *Forgotten Emancipator, George Washington*. Thomas Fleming is a former president of the Society of American Historians

ARRTOP events are Free and Open to the Public.

<http://arrtop.com>

Wednesday, December 4, 2013 at 5:00 - 6:30 pm at University of Pennsylvania Museum, 3260 South Street, Philadelphia, PA 19104

<http://www.penn.museum/events-calendar>

Penn Humanities Forum event

Archaeology and War in Iraq and Afghanistan

Brian Rose, past president of the Archaeological Institute of America, shares his work preserving museums, libraries, and ancient sites in Iraq and Afghanistan. He also discusses the cultural heritage training program he developed for U.S. troops deploying to the Middle East.

Free and open to the public. Pre-registration required.

Wednesday, December 4, 2013 at 6:00 pm at University of Pennsylvania Museum, 3260 South Street, Philadelphia, PA 19104

"Great Voyages" Lecture: Ibn Battuta

<http://www.penn.museum/events-calendar>

Wednesday, December 4, 2013 at 7:00 PM at Frankford Hall on Frankford Avenue just north of Girard Avenue.

Philadelphia Nerd Nite ... be there and be square, yo.

Science discussions, good food, good company, and plenty of beer!

For more information see the website at

<http://philadelphia.nerdnite.com/updates/>

Open to the Public. Admission \$5.00

Email us at: nerdnitephilly@gmail.com

Thursday, December 5, 2013 at 12:30 pm at University of Pennsylvania Museum, 3260 South Street, Philadelphia, PA 19104

Brown Bag Lecture: Indian Culture Heritage

<http://www.penn.museum/events-calendar>

Saturday, December 7, 2013 at 1:00pm at **Laurel Hill Cemetery**, 3822 Ridge Avenue, Philadelphia, PA19132. 215-228-8200

<http://www.thelaurelhillemetery.org>

Language of the Dead

Victorian Funerary Symbolism

Victorian Philadelphians loved visual symbolism, and even their simplest grave markers are likely to be ornamented by ivy (for eternal life), lilies (for resurrection) or hour glasses (for brevity of life). Oftentimes, the symbolism is both lavish and individualized. A civic reformer is memorialized with a bas-relief showing the Schuylkill Canal and the Philadelphia Water Works. A prison reformer is celebrated with a grand model of Moyamensing Prison. A shattered column, a cavalry officer's sword and a pair of spurs mark the resting place of one of the first soldiers to die at the Battle of Little Big Horn, infamously known as Custer's Last Stand. A mother who died in childbirth is compellingly depicted clasping her two dead babies. Nineteenth-century Philadelphians understood Laurel Hill not only as a cemetery, but also as a vast sculptural garden and retreat. Accordingly, they came by the thousands to read the symbolic messages that the dead had left for the living.

The tour will take place on Saturday, December 7 at 1:00pm, departing from Laurel Hill Cemetery's Gatehouse entrance at 3822 Ridge Avenue, Philadelphia, PA 19132. Free parking is located in the lot across the street from the Gatehouse.

The cost is \$12/person; or \$10/students and seniors. Reservations are suggested. Tickets can be purchased at the door, or in advance by phone (215) 228-8200 or online. Guide: Michael Brooks, Ph.D.

Monday, December 9, 2013 at 6:00 p.m at **National Mechanics, 22 S. Third Street, Philadelphia, PA 19106**

Science on Tap

A monthly gathering that features a brief, informal presentation by a scientist or other expert followed by lively conversation. Good food and beer.

This month's Science of Tap is brought to you by the American Philosophical Society.

Must be 21 or accompanied by parent. Free and open to the Public.

<http://scienceontapphilly.com/>

Monday, December 9, 2013 at 8 PM at Delaware County Institute of Science, 11 Veterans Square, Media, PA 19063

Uncorking th Past: The quest for wine, beer, and extreme fermented beverages

Lecture by by Pat McGovern, Ph.D., Penn Museum

<http://delcoscience.org>

Tuesday, December 10, 2013 at 12:00 to 1:00 p.m. at the Chemical Heritage Foundation, 315 Chestnut Street, Philadelphia, PA 19106

Brown Bag Lecture: Chemistry and Newspapers in Napoleonic Europe

A talk by Iain WattsTel: 215-925-2222 • <http://www.chemheritage.org>

Open to the Public. Free. No Registration Required

Wednesday, December 11, 2013 at 7:30 PM at The Franklin Institute Science Museum, located in Center City Philadelphia, at the intersection of 20th Street and the Benjamin Franklin Parkway.

<http://www.fi.edu>**Rittenhouse Astronomical Society Monthly Meeting**

Bring all of your out-of-this-world questions!

Join The Rittenhouse Astronomical Society on the second Wednesday of each month at 7:30PM in the Fels Planetarium. The society offers all persons an opportunity to participate in the activities of an astronomical group at the layman's level. They aim to spread knowledge, awareness, and enjoyment of astronomy and astronomical issues. It is a popular science club that keeps its members up-to-date on the latest developments. No experience is necessary to attend the FREE meetings.

www.rittenhouseastronomicalsociety.org

Thursday, December 12, 2013 at 7:30PM at 7:30PM at the **Free Library of Philadelphia**, 1901 Vine Street, 19103

<http://libwww.freelibrary.org/authorevents/>**Lester Brown | Breaking New Ground: A Personal History**

"One of the world's most influential thinkers" (The Washington Post), Lester Brown is the founder of the Earth Policy and Worldwatch Institutes, two nonprofit research organizations dedicated to analyzing environmental issues on a global basis and planning a sustainable future. His many honors include a MacArthur Fellowship and the United Nations Environmental Prize, and in 1986 the Library of Congress requested his personal papers, noting that his writings "have already strongly affected thinking about problems of world population and resources." He is the author of more than 50 books, including Full Planet, Empty Plates and Plan B. His new memoir traces his life from a small-farm New Jersey childhood to leadership as a global environmental activist.

FREE. No tickets required. For Info: 215-567-4341

Saturday, December 14, 2013 at 3:30 pm at University of Pennsylvania Museum, 3260 South Street, Philadelphia, PA 19104

Unwrapping the Mummy: Hollywood Fantasies, Egyptian Realities<http://www.penn.museum/events-calendar>

Wednesday, December 18, 2013 at 6:00 pm at University of Pennsylvania Museum, 3260 South Street, Philadelphia, PA 19104

Reports from the Field Lecture<http://www.penn.museum/events-calendar>

Friday, December 27, 2013 at 10:00am at 1:00pm at **Laurel Hill Cemetery**, 3822 Ridge Avenue, Philadelphia, PA19132. 215-228-8200

<http://www.thelaurelhillemetery.org>

Night Skies in the Observatory at the Franklin Institute
Every second Thursday

About Night Skies in the Observatory

Hosted by Chief Astronomer at The Franklin Institute, Derrick Pitts, the Joel N. Bloom Observatory is open late to the public and offers 5 different telescopes for you to view celestial objects in the sky, including stars, planets, nebulae, and if conditions are right, a galaxy or two. The evening includes a Fels Planetarium show and a lecture or presentation (appropriate for ages 5 and up) on an astronomical or space science topic. The Observatory is staffed with knowledgeable observers and free star maps are provided. Meet some BIG STARS on the second Thursday of each month at The Franklin Institute! Admission is \$5.00. Members are free. Advance reservations are not needed. Tickets are sold on-site when you arrive.

<http://www2.fi.edu/exhibits/permanent/bloomobservatory.php>

Monthly Fourth Friday Tour Series**Hot Spots and Storied Plots:**

Join Laurel Hill Cemetery for this informative overview of Laurel Hill's long and colorful history, which will include many of the marble masterpieces, stunning views and legendary stories that afford the cemetery its WOW factor. This is the perfect tour for first-time visitors to Laurel Hill, and anyone else who enjoys beautiful art, scenic nature and fascinating history. BRAND NEW "Hot Spots and Storied Plots" will be presented monthly as part of Laurel Hill Cemetery's Fourth Friday tour series, which take place on the fourth Friday of every month at 10:00am.

December's walking tour will take place on Friday, December 27 at 10:00am, departing from Laurel Hill Cemetery's Gatehouse entrance at 3822 Ridge Avenue, Philadelphia, PA 19132. Free parking is located in the lot across the street from the Gatehouse.

The cost is \$8/person general admission. Tickets can be purchased at the door, or in advance by phone (215) 228-8200 or online.

Guide: Sonia Krutzke

Tuesday, December 31, 2013 at 12:00pm at 1:00pm at **Laurel Hill Cemetery**, 3822 Ridge Avenue, Philadelphia, PA19132. 215-228-8200

<http://www.thelaurelhillemetery.org>**General Meade Birthday Celebration**

The annual General Meade Birthday Celebration will mark the 198th anniversary of the birth of General George G. Meade, commander of the Union Army at the Battle of Gettysburg. A parade of Civil War reenactors, civilians in period attire, special dignitaries, heritage groups and participants will advance to Meade's final resting place and memorialize his services to his nation. A 21-gun salute and champagne toast will cap off the program at graveside, and will be followed by a reception in the Cemetery Gatehouse. A tour of historic Laurel Hill will be offered following the festivities (weather permitting). This year holds special significance as we continue to commemorate the Sesquicentennial of the American Civil War.

The event will take place on Tuesday, December 31 at 12:00pm, departing from Laurel Hill Cemetery's Gatehouse entrance at 3822 Ridge Avenue, Philadelphia, PA 19132. Free parking is located in the lot across the street from the Gatehouse.

Free and open to the public. For more information, call (215) 228-8200.

Guide: Anthony Waskie, Ph.D.

Tuesday, January 7, 2014 at 7:00 PM at Washington Memorial Chapel, on Route 23 in Valley Forge.

Friends of Valley Forge Park

The Story of Cliveden: Building a Memory

David Young, executive director at Cliveden, shares the history of this important Germantown house. <http://www.friendsofvalleyforge.org/speaker-series.shtml>

Free and Open to the Public.

Wednesday, January 8, 2014 at 6:00 pm at University of Pennsylvania Museum, 3260 South Street, Philadelphia, PA 19104

Unwrapping the Mummy: Hollywood Fantasies, Egyptian Realities<http://www.penn.museum/events-calendar>

Wednesday January 29, 2014 at 7:00 PM. American Revolution Round Table of Philadelphia. Location to be determined. Location to be determined. Check website.

Kim Burdick on "Seized in September" which is about the Revolutionary War in Delaware in the fall of 1777.

ARRTOP events are Free and Open to the Public.

<http://arrtop.com>

General George G. Meade
(1815-1872)

I support the aims of PhACT and would like to join/rejoin for the next year. The annual membership is \$15 and \$10 for students which includes e-mail delivery of Phactum.

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The PhACT website is: www.phact.org

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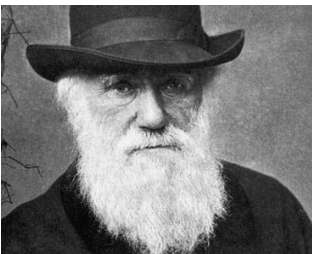
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Phactum Editor, Ray Haupt
phactpublicity@aol.com



"Ignorance more frequently begets confidence than does knowledge: it is those who know little, and not those who know much, who so positively assert that this or that problem will never be solved by science."

- Charles Darwin