January 13, 2014

Fred-Talks

Volume 1, Issue 2

Inside this issue:

Introduction to this Newsletter Issue

Hello again!

Welcome to my newsletter.

Click on the links on your right for more serious information about myself.

Meanwhile I think I should tell about a happening to me early this week. A former student bumped into me and asked what I was doing lately.

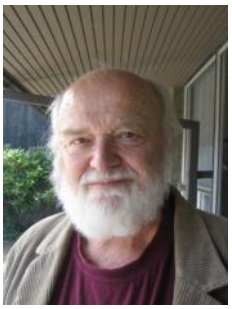
I told her about this newsletter and mentioned that I had to keep doing academic work lest I turned to alcohol. She asked if that was a problem for me.

I replied that I did not like the taste or the effect of alcohol, and that I probably would have to join AA to learn how to drink. I figured that perhaps by going through the 12 steps in reverse, I could turn into an alcoholic.

She looked at me with a grin on her face and said, "Fred Duerr! I told you that story 5 years ago! You are losing it"!

While my wife looked on with amusement, I was forced to agree that I was, indeed, losing it.

And it is true. I sometimes am not sure whether I did something, or something occurred decades ago (2, 3, 4, 5, 6, or 7?)



Fred G. Duerr, Ph.D.

fgduerr@gmail.com

Blog Site

www.fredduerr.com

Website

www.chemeco.com

Newsletter Archive

www.chemeco.com/Newsletter.htm

What is Potable Water and Where Do You Find it? Continued:

I wrote a bare introduction on Potable Water in my first Newsletter (Issue 1). However, I thought you might be interested in some results I have received from audiences at my weekly Fred-Talk at OSU's Hatfield Marine Science Center.

I am told that winter audiences at weekly presentations are usually smaller in number than those during summer months. I find them to be about the same in number.

However, the winter audiences seem to be more interested in solving water access and potabiity problems than summer audiences. They are concerned about periods of drought, storms, earthquakes, etc. Summer audiences seem to be more interested in entertainment.

Having said that, it pleases me that I am now getting letters from school children seeking information on drinking water. How they found out about me, I have no idea. But, I love it.

Fred-Talks Volume I Issue 2

Portraits of Eminent Scientists

I have a personal collection of drawings of historically eminent Scientists, I intend to post a drawing along with information about the Scientist, on a bi-weekly basis. These pictures will become part of my book, "History of Biology", in process.

Ivan (Johann) Parfenevich Borodin was born in 1847 in northern Siberia. He earned his Doctors Degree at the University of St. Petersburg.

His early works included "Physical Research on the Transpiration of Leaves". Next followed a number of Physiological and Anatomical works on production of various substances in plants. He discovered crystallized chlorophyll in 1880-1882. His later works were textbooks on Botany, Mycology, and on Fructification in the Plant Kingdom.

He was a founding member of the Russian Botanical Society, the Leningrad Society of Natural History, and director of the Botanical Museum of thee Academy of Science. He also wrote several popular books on Botany.

Drawing by Ivan Bogdanovich Streblov 1931

Food for Thought

Is there room for doubt in science?

It seems as though mankind has always manufactured simple explanations for every observable phenomenon. And mankind tends to hold on to these explanations as simple incontrovertible facts.

If some guru proclaims that such-and-such is true, then most people think that it is so. This is even when someone who is less glib contradicts the guru.

In 1955, in an address to the National Academy of Science, Richard Feynman discussed the value of knowledge.

He said that while science has given us the knowledge to do and make all kinds of thing, science does not instruct us how to use that knowledge.

He also said that science can give one a form of intellectual enjoyment, or fun, but not necessarily improve man's lot on Earth.

Finally, Feynman pointed out that science takes for granted that research always implies doubt. Freedom to do research should include uncertainty of possible results. The first key to understanding life's difficult questions is to embrace that we do not know all of them.

Books I Read Recently

A few years ago I watched a British television mystery series about a sleuth name Lovejoy. Lovejoy is an impoverished antiques expert who spends his spare time chasing women and solving crimes.

Recently I picked a beat-up paperback book by the author Jonathan Gash, and lo and behold, the protagonist of the story was Lovejoy. The book, entitled The Judas Pair is first in a series of about a dozen books about Lovejoy's adventures in the world of antiques and crime.

The settings of his books are so well described that if it were not for the excellent dialog, one would think you were reading a dreary travelogue. I still shudder when I think of the one wherein Lovejoy was down and out in Hong Kong.

Lovejoy is a "divvy", that is, one who has the ability to tell a genuine antique from a fake. The series is a good textbook on how to recognize genuine antiques.

I recommend you to pay attention to the characters since they appear in several books. Also I recommend you start with the Judas Pair. The books are good.

Are We in this World Alone?

While I was a graduate student at the University of Minnesota, several colleagues and I would lunch together every day in the Department Seminar Room. One colleague, a very thin female, would routinely eat twice as much lunch as anyone else in the room.

We would tease her about it, and someone suggested that she might have a 30 foot long tapeworm. She was good natured, agreed that it must be so, and even referred to it as "Oscar". I told her that she was lucky because, at least, she would never be alone.

Years later I saw a video presentation on bacteria by Dr. Bonnie Bassler. She commented in this excellent video that we may think of ourselves as human beings, but she thinks of us as 99% bacterial.

As my studies progressed, I learned that many different organisms live together for mutual benefit. Some provide certain nutrients and/or home for others while the others provide nutrition and/or home for the fellow travelers.

Even mitochondria may be a symbiote living inside a cell. The cell provides nutrients and a home for the mitochondria, while the mitochondria provides metabolic access to oxygen to the cell.

This is not parasitism. Perhaps scientists should pay more attention to organisms as being Ecosystems. Some stretch that idea to include Earth. Read "The Age of Gaia" by James Lovelace.

University of Minnesota
Lunch 1960

Two Reasons to Vaccinate Your Pets

Last week I took my dog Sadie to the vet for her regular check-up, shots, and to renew her license. She received shots for Rabies, Bortedella, a Lepto Vaccine, and a DHPPC vaccination.

Overall, I spent a lot of money on dog medications. I cannot help but wonder why? I mulled this over a bit, and came up with two major reasons.

These medications may curtail or prevent disease transmission from dog to man. Mankind can and does get many kinds of diseases from each other, from our pets, and from wildlife.

These medications may make life better for Sadie.

So! Do we medicate our pets for their sake, or for our sake? If we do it only for our sake, should we not medicate all wildlife? I do not think it is reasonable to give rabies shots, etc. to all wild animals. I do not suggest that we stop medicating our dogs. I medicate Sadie for her sake.

I think it is important to understand the things that we do. Perhaps we should just give people all the "shots", and let the other animals be. I do not really believe that

Fermented Beverages

Frequently during my "Fred-Talks", I am asked how or why certain fermented beverages are potable, whereas the water used to make the beverage may contain harmful microorganisms.

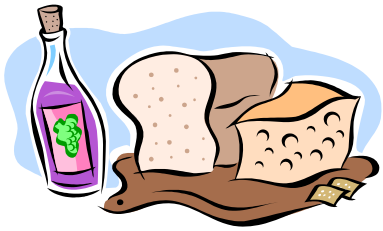
This question leads me to explain that acids and alcohol provided during fermentation kill and/or inhibit growth of most disease causing microorganisms.

Then someone asks me how to make safe drinkable beverages. I talk about ales, beers, ciders, wines, etc. Eventually I will get a question on how to do this at home, and "isn't alcohol bad for you?"

I explain that the alcohol content need not be very high, but more important, a pH of <4.5 (as acidic as store vinegar) will kill or inhibit the growth of most pathogenic microorganisms. I give them a simple recipe for a carbonated beverage, using sugar, real lemon, bread yeast and water. It takes about 3 days to make.

Click here for a complete recipe.

My wife doesn't like the yeasty taste, but I'm too cheap to buy wine yeast, etc.



Cynic's Corner

The May/June 2013 edition of ECO magazine contains an article entitled "Using Snail Teeth to Improve Solar Cells and Batteries." The author of the article then discussed work, done by David Kisaius of the University of California Riverside, on the teeth of the marine "gum boot" chiton.

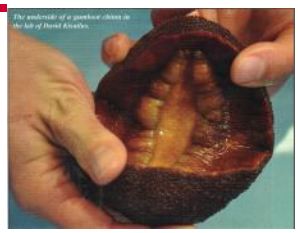
The chiton is not a snail. Granted they are both mollusks, but calling one the other is like calling a bear a lion. They are different critters!

I am sure David Kisaius did not make this error. I think this is an example of a writer not knowing the subject he or she is writing about. This is too common, in my opinion, and encourages tolerance of ignorance.

Acquiring knowledge in attempt to dispel ignorance is a never ending process. I would hope that ECO magazine wishes to educate it's readers, and not spread ignorance.

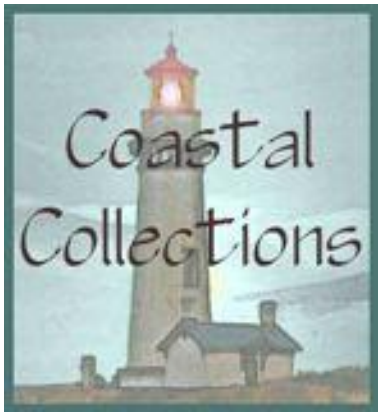
Incidentally, the "tongue and teeth" of many snails, or radula as it is called, is similar to that of a chiton. Watch an aquatic snail crop the algae on the glass wall of an aquarium to observe a radula in action.

Read anything by Carl Zimmer to see how to write a scientific article or book.



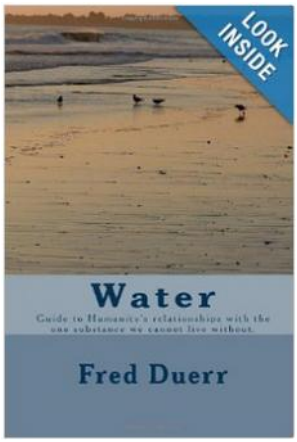
Gum Boot Chiton

Fuzzy Chiton



Coastal Collections

My wife, Diana, and I have somehow acquired several thousand books on various subjects. Click on the image at left to take you to our website, where you can search our inventory of books for sale at Biblio.com.



I have written a small, 54 page, primer on water.

It is available as a paperback book (Water, by Fred Duerr), ISBN 10 - 1482773872, and as a Kindle, ASIN BOOCMI3K5A from Amazon.

Amazon has various promotions to adjust the price to as low as $0.99 in certain cases.

Click on the book image to take you to it's page on Amazon.com.