

THE NEW WANDERINGS

No. 7

01 October 2011

Ralph J. Coppola

r_j_coppola@hotmail.com



<http://citizenscientistsleague.com/>

Starting, in this month's column, I will be including a section covering interesting items that were found on the [Instructables](#), [YouTube](#) & [Make](#) sites.

Feature:

It is amazing how simple "low tech" technologies can vastly improve the day to day life of the peoples in the so called developing countries.

For example:

Mohammed Bah Abba and His Pot-in-Pot Cooling System

This device allows, people in tropical countries, to preserve their produce for several days as opposed to several hours.\

The Malian Peanut Sheller

A simple, locally produced, machine has come to make a big difference in the lives of many villagers around the world. It is capable of shelling 50 kilograms of raw, sun-dried nuts per hour.

[Build a DIY Universal Nut Sheller](#)

This Instructable takes you through the steps in building your own sheller.

[The Rocket Stove](#)

This is a simple highly efficient stove that can be constructed from many different materials. The top of the line stoves are constructed, in a shop, from steel while at the other end of the spectrum, a villager can build his/her rocket stove from mud.

[Solar Cookers International](#)

Solar Cookers International (SCI) spreads solar cooking technology worldwide, particularly in areas with plentiful sunshine and diminishing sources of cooking fuel. This is a technology that can largely eliminate the time women spend in collecting fire wood for their cooking fires.

[Solar Pasteurisation](#)

The lowly discarded 2L plastic soda-pop bottles can be turned into a remarkably simple method of producing drinkable water. The bottles are filled with bacterially contaminated water and placed in the sun. A combination of ultra-violet radiation and temperature rise makes the water suitable for human consumption. See the UNESCO report on **[Solar Disinfection](#)**.

[Isang Litrong Liwanag](#)

This is another example of “pop bottle technology” that was recently brought to my attention. “Isang Litrong Liwanag (A Litre of Light) is a sustainable lighting project which aims to bring the eco-friendly Solar Bottle Bulb to under privileged communities in the Philippines. Designed and developed by students from the Massachusetts Institute of Technology (MIT), the Solar Bottle Bulb is based on the principles of Appropriate Technologies – a concept that provides simple and easily replicable technologies that address basic needs in developing communities.”

[The Solar Bottle Light](#)

This is a step-by-step illustration of how the bulbs are built and installed.

[Ten Examples of Appropriate Technology](#)

This list is an example of appropriate technologies that have enhanced the daily life of many people.

[MyShelter Foundation](#)

The Litre of Light Project is sponsored by *MyShelter Foundation* which was established by Illac Diaz to create a system of sustainability and reliability through its capability-building and employment-generating projects.

[The Full Belly Project](#)

The Full Belly Project is a non-profit organization dedicated to empowering people, in rural communities, by training local people to manufacture our appropriate technologies.

[Welcome to Village Earth!](#)

Village Earth is a growing network of organizations and people all working together to support marginalized communities to have greater control over the decisions and resources that shape their lives.

These are but a few examples of sustainable, grass roots or DIY technology. This field is wide open for the Citizen Scientist to, perhaps, make a contribution.

=====

Wanderings:

[Scrap to Power](#)

This is the home of re-purposed trash! The author likes to find new uses for the old-broken-useless stuff we all seem to throw away too often.

[Brian's Pop Can Solar Heater](#)

Here's what you can do with all of those empty pop cans that you have collected.

[Build It Solar](#)

On this site, Do-It-Yourselfers will find the plans for a wide variety of solar space heating projects that they can build. Search on "beer" for a version of the Pop Can Heater.

[The Solar Power Forum](#)

Besides the exchange on the pop can heaters, the forum contains many discussions relating to other DIY solar projects.

[The Physicist's Fireplace](#)

The Texas Fireframe[®] grate was invented by PhD physicist Dr. Lawrence Cranberg for greater fireplace efficiency.

[Views from Science](#)

In his Web Site, Eli Silk, describes some of his work in Amateur Science.

[Low Temperature Differential Stirling Engine Designs](#)

For several years, Hubert Stierhof has been developing Stirling engines with hopes of finding a design that is applicable for the needs of Third World countries, to serve as solar water pumps or small scale power stations (< 50 Watts).

[Nightmares of the Art of Measuring](#)

G. Hathaway compiled and edited this list that contains some of the problems and pitfalls that experimental scientist may encounter during the course of an investigation.

[Amateur Scientist's Guide to Water Quality Monitoring Observations](#)

NASA presents these guide lines in order to assist the amateur scientist in measuring and understanding the factors that influence water quality in their area

[Time in Motion: the Story of the Sea Clock or Harrison's Chronometers](#)

In October 2010, my wife and I were fortunate to be able to spend a week in London, UK. Among our many activities we were able to visit and [The Royal Observatory](#) and [The National Maritime Museum](#) where we saw John Harrison's Sea Clocks.

[Museo Leonardiano da Vinci](#)

The week before London we went to Vinci, Italy, hoping to see the Leonardo Museum. But, unfortunately, it had closed, for renovations, the previous day.

[Math, Science & Technology @ h2g2](#)

"h2g2 stands for '*The Hitchhiker's Guide to the Galaxy*' - an unconventional guide to [Life](#), [The Universe](#) and [Everything](#). This site - the Earth Edition of the Guide - is an encyclopaedic project contributed to by people from all over the world."

[MadLabs!](#)

Mad Labs is dedicated to fun science. This site contains experiments and projects that you can do in the classroom.

[Can I, or Can't I, See the Aurora?](#)

[NOAA's](#) Space Weather Center says that "Being able to see the Aurora depends mainly on two factors, geomagnetic activity (the degree of disturbance of the earth's magnetic field at the time) and your geographic location."

[What Was the First Personal Computer?](#)

You might be surprised with the answer.

[The Ten Most Beautiful Experiments](#)

George Johnson reads from his book – *The Ten Most Beautiful Experiments*.

=====

From Instructables, YouTube & Make:

[Arduino Project Board](#)

This little project board will allow you to free up your Arduino for other projects.

[Bootload an Arduino with a ZIF Socket](#)

Bootloading an Arduino with a ZIF socket allows you to easily program the [ATMEGA328](#) chips for use in other circuits.

[DIY EEG](#)

Connect a [Star Wars Force Trainer](#) to an Arduino for your own home brewed [EEG](#).

[How to Build a T.E.A. Laser](#)

Here is another simple DIY T.E.A. Laser

[Faraday Rotation](#)

In this experiment, a high school student recreates Faraday's 1845 experiment in which he used a powerful electromagnet to rotate the polarization of a beam of light.

[How to Smell Pollutants](#)

Use an Arduino and a [Figaro](#) TGS2620 gas sensor to detect the relative gas levels that are given out by volatile organic compounds.

[DIY Microtome](#)

A microtome is a device that is used to cut biological specimens into very thin slices. This link shows how you can build a microtome from LEGO components.

[DIY Micro-Photography](#)

Here are two easy ways to take pictures through a microscope, one with a point and shoot camera and one with a cheap webcam.

[Catch a Falling Star](#)

With a little more equipment than a magnet and a microscope you can collect and view micro meteorites.

[Make Your Own Slide Rule](#)

Before the advent of hand held calculators, in the early 70's, we used slide rules to perform complex calculations. Try building your own and see how we did it.

[How to Use a Slide Rule](#)

Now that you made a slide rule, here's how to use it.

[The Circular Slide Rule](#)

The circular slide rule was a compact version of the more common linear rule.

[The Curta Calculator](#)

And then there was the [Curta Calculator](#)

[Beginning Soft Circuits/](#)

Use these Instructables to get started with projects to light up your clothes and perhaps, you too, can be arrested as a terrorist and then banned from Logan airport like [MIT student Star Simpson](#).

=====

The Kids Room:

[Ask the Van](#)

Volunteers with the [Physics Van](#) outreach program at the Department of Physics at the University of Illinois have been answering questions online since 1998.

[SciGirls](#)

This PBS site is for girls who are interested in the sciences.

[Make a Battery and Discover the Reactions Involved](#)

This site shows you how to build a battery from common kitchen items and explains what is going on. Be sure to check out their other experiments in the "Kid's Stuff" section.

[Build the SprutBot](#)

This simple little robot will follow a line. The author provides an explanation on how it works. This would make a great start to a school project.

=====

On The Lighter Side:

[The of the 2011 Ig Nobel Prize](#)

Here Are the Winners of the 2011, and earlier, Ig Nobel Prizes that are presented annually by [The Annals of Improbable Research](#).

[MSDS: Dihydrogen Monoxide](#)

Dihydrogen monoxide, also known as hydric acid, is responsible for injury, death, and property damage all over the world. Visit the [Dihydrogen Monoxide Research Division](#) online at www.dhmo.org.

[Humour in the Work Place](#)

WorkJoke is a jokes orientated web site dedicated to profession related jokes.

[Physicists Jokes](#)

[Chemists Jokes](#)

[Biologists Jokes](#)

[Mathematicians Jokes](#)

[Engineers Jokes](#)

[Technicians Jokes](#)

=====

From The Far Side:

[The End of the World October 21, 2011](#)

Harold Camping and Family Radio try again!

=====7=====



Ralph J. Coppola

r_j_coppola@hotmail.com