

The Home Made Laboratory

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Ora, Lege, et Labora

Without the laboratory there is no work or labora, be that practical laboratory alchemy or inner mystical alchemy. In the former the workshop and physical laboratory is most important for the practice and conduction of the various classical experiments which lead to initiation. In the later, the body is the alchemists laboratory. Whatever path our calling leads us on, we must agree that the laboratory is that important place of work, wherein are found the vessel, the matter and the fire required for practice. It is also the place wherein the alchemist finds sanctuary and comfort as he enjoys hours of wonderment in his experiments allowing him to observe and explore the secrets of nature, attuning him with her mysteries and the higher forces of the cosmic, which are always urging him on to that ultimate goal of his very existence, "Cosmic Consciousness".



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The building of one's laboratory is not an overnight event. It takes time, patience, imagination and a little knowledge of how things work and what we want. Building a laboratory and making our own equipment can be fun and exciting. A lot of pleasure and pride can go into this endeavor, and we should always start slow and on a humble scale. Though we are setting out to build within our means, our knowledge and our budget, some initial investment will be inevitable, for we cannot start with nothing. However, the building of a laboratory need not be costing one an arm and a leg.

INITIAL INVESTMENTS ON BASIC REQUIREMENTS AS a MUST

Boiling flasks are an absolute must to acquire, and we cannot do without them. They come in different volume sizes. They are not that very expensive and one should at first own at least a couple 1 liter sizes. Start with the flat bottoms as these can sit readily wherever we place them. When using these directly on a hot plate always use either wire meshed grills or sand baths and water baths. Never place the flasks directly on the elements of the stove. Otherwise the flasks will crack.



The simplest way to shop for deals on such glassware is through the internet, especially through auction sites. Here are some links.

<http://www.labx.com/>

<http://www.crucible.org/Laboratory.htm>

<http://www.unitedglasstech.com/distillation.htm>

http://www.hometrainingtools.com/catalog/cat_chemistry.html

The best buys are found on **ebay**. Search for lab glassware. Many other necessary laboratory odds and ends can be bought there, such as tubing and rubber stoppers. While you are there look also at the crucibles and all other good stuff.





The Athenor or the Stove is an other absolute must to acquire. Without it we have no fire. A hot plate is the simplest to work with and they work well. I have bought a very good one for \$50.00 from a store that supplies school laboratories.

A simple hot plate from Wall Mart will also do for the beginner. One can even use his own kitchen stove. Never calcine indoors, you will stink the house up with the smell of smoke for months. Also the smoke released is unbelievably large and you will have the fire department at your door steps in the shortest time as your smoke detector screams unceasingly. For the cleaner works, such as

wine and alcohol distillation, evaporations, ect, the kitchen stove can be used safely.



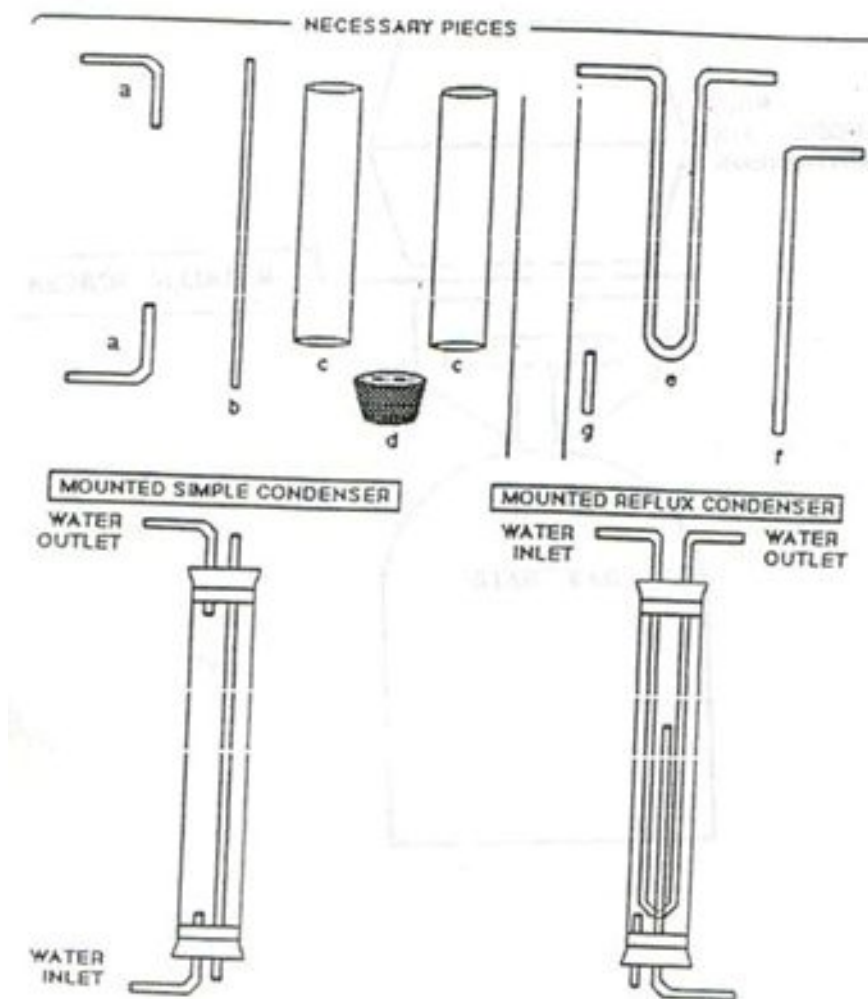
A good collection of various sizes of glass tubing is also a must to acquire if we want to be able to adapt our laboratory and build home made equipment. These can be bought on the internet and from science supply stores. These can be easily cut and bent through the heat of a blow torch. Sizes range from 10mm to 28mm and 40mm.

Rubber stoppers are also a must. Along with tubing, many wonderful necessary equipment can be made.



CONDENSERS

Building the simple and the reflux condensers are easy. The following diagram from the PON lessons illustrates well the method.



Of course, with a little practice with a file for cutting the tubes and a blow torch for bending the smaller gage tubes, you will soon be able to attain your desired shapes of tubing required.

I had great fun building my first condensers. I built several of varying sizes. I always have extras to give as gifts to those whom I behold as being enthusiastic and excited about starting in our beloved art.





Now that we have our flasks, athenor, tubing and stoppers, and having built our condensers, we can start setting up our home made laboratory.

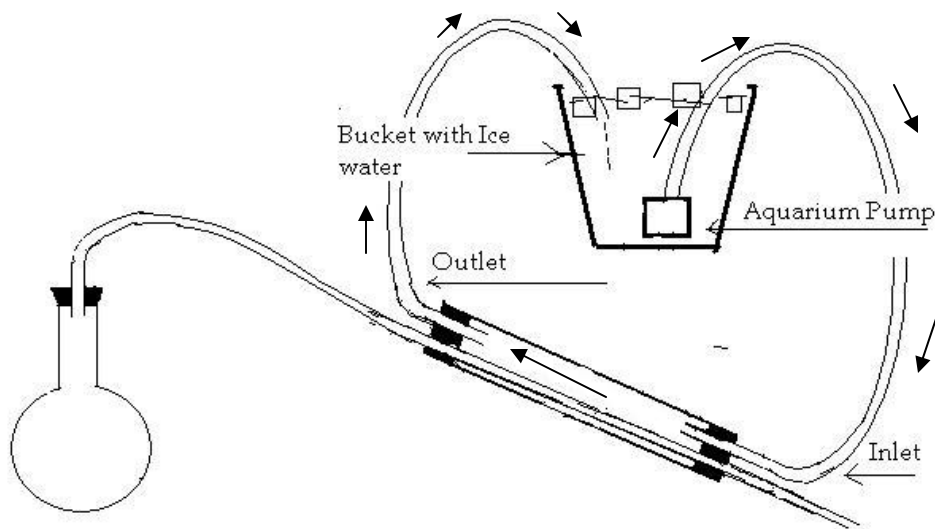


The next thing we need to set up is a way to cool our condensers. We have to somehow get cold water to flow through our condensers. We can do this three ways.

- 1- Adapt a water hose from a faucet to the inlet of the condenser.
- 2- Lead water to the inlet of the condenser via an aquarium pump submerged into a bucket of cold water.
- 3- Directly pass tubing from boiler flask into bucket of cold water.

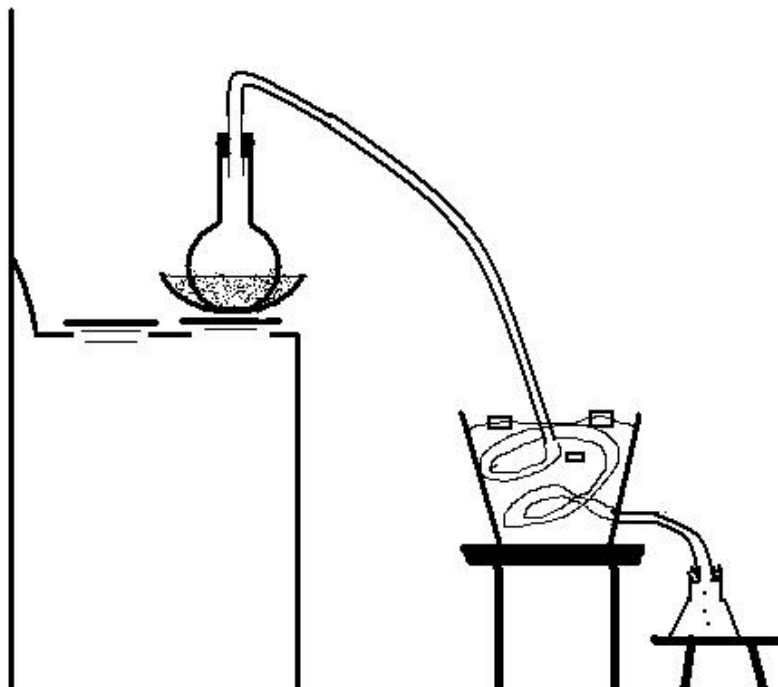
The **first** method can be achieved by buying a threaded connector that attaches directly to the threaded end of a faucet. One end of a suitable sized rubber or plastic tube is connected to this adapter, the other end is connected to the inlet of the condenser. This can be seen in the above picture. The outlet of the condenser is connected with a similar tube to a drain or to the outside if a drain is not available. The pressure from the tap must be carefully controlled and adjusted for the right flow as to not over pressure or underflow the cooling chamber of the condenser. This control is easily done as we can readily discern by sight the status of our water flow. The inlet is at the lower end of the condenser and the outlet is at the upper end. All the above connector and tubing can be bought at Home Depot.

The **second** method is a very practical method which I use often when I demonstrate distillation at courses away from home. Often organizations don't have laboratories, so this method is transportable and can be quickly set up. A simple aquarium pump worth



\$20.00 is submerged into a bucket of cold water. Tubing from the aquarium pump is directed to the inlet of the condenser. The outlet is directed back into the bucket of cold water. This way there is a continuous flow with no need of faucet or a drain. The flow can be controlled with the addition of a C clamp to the inlet plastic tubing. One may distill for hours this way before the water in the bucket warms up. However the water can always be changed during the distillation by ladling out the warm and replacing with cold.

The **third** method is the easiest and the cheapest way. The boiling flask can be set up on a kitchen stove using a sand or a water bath. The tubing is directly lead into a bucket of cold water. The tubing is lead out the bucket through a drilled hole. The inside and the outside faces of the hole are sealed with the tubing with ordinary sealing silicone.



Whatever method we chose, we have now our distillation train set up, and are ready to distill. I always say and hold as true, that we need not mortgage our homes or spend a fortune on setting up a laboratory. The idea is to see the alchemical principles at work and get to understand the correspondences through the various lab processes in hope to understand the alchemical process. Of course more apparatus is needed to fully enjoy our work. We will need mortars, corning ware dishes and stainless steel bowls for subtilizing our matters, coagulation works and calcinations.



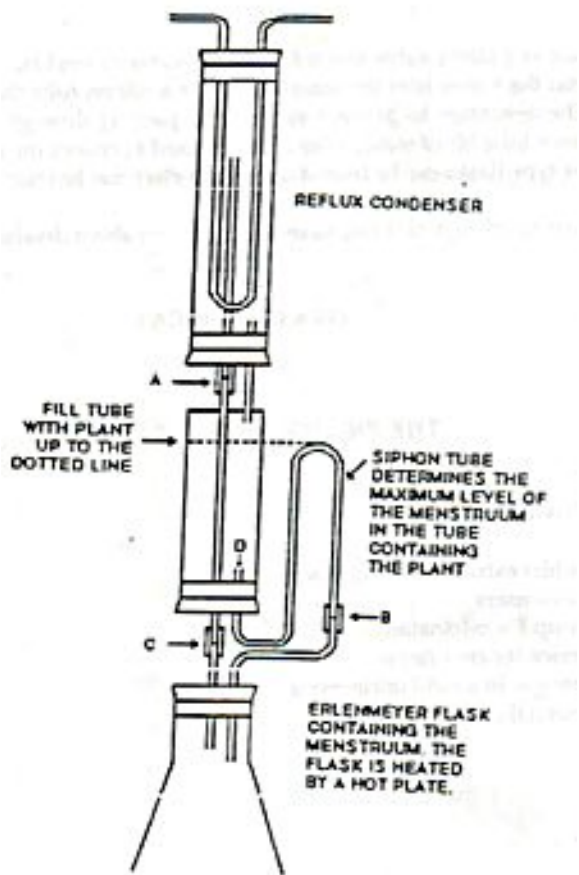
Calcination is a most important stage in the spagyric process of the separation of the false from the true. The best utensil for use is a cast iron frying pan. For larger works in calcination, roasting pans are excellent used over a barbecue.



The deliquescencing of tartar salts is a delicate process involving patience, timing and allot of gentle care. However the equipment need not be too elaborate. Two liter pop bottles with a section cut away with a blade knife make excellent none metallic pans. The caps are used to hold in the angel water. They also allow to use these make shift pans as funneled bottles when we remove the caps and pour our tartar oil into our storing bottles.



A simple home made Soxhlet Extractor is easy to make. Now that we have a good supply of glass tubes why not build the extractor. It will cost under \$20.00 to build such an extractor which will work very well for our purpose. The diagram on the left comes from PON's spagyric lessons. These lessons should be ordered by all aspiring alchemists and are available at <http://www.triad-publishing.com/> . The Reflux condenser I made from a tube 10 inches long and 40mm in diameter. The inner tubing is 10mm. The holding chamber is made of a 4 inch tube by 40mm. I have found that out of nylon stockings we can make excellent filters to hold our herbs in the holding chamber. Simply tie one end of the stocking, place in herb and form a size that will fit into the chamber, tie other end and cut at knots. This little packaging will fit neatly into holding chamber and will keep in all of our ground herbal matter while allowing the menstruum to flow freely. For cooling of the reflux condenser we can use again the method #2 with the aquarium pump.



Although a Soxhlet extractor is not necessary for the practice of spagyrics and alchemy, it can come in very handy in saving time and toil. Why not make one since it is easy, cheap and fun.

The incubator is also a very important tool to have which allows our digestions, integrations and our maturing of our matters. It can easily be made from Styrofoam ice box.

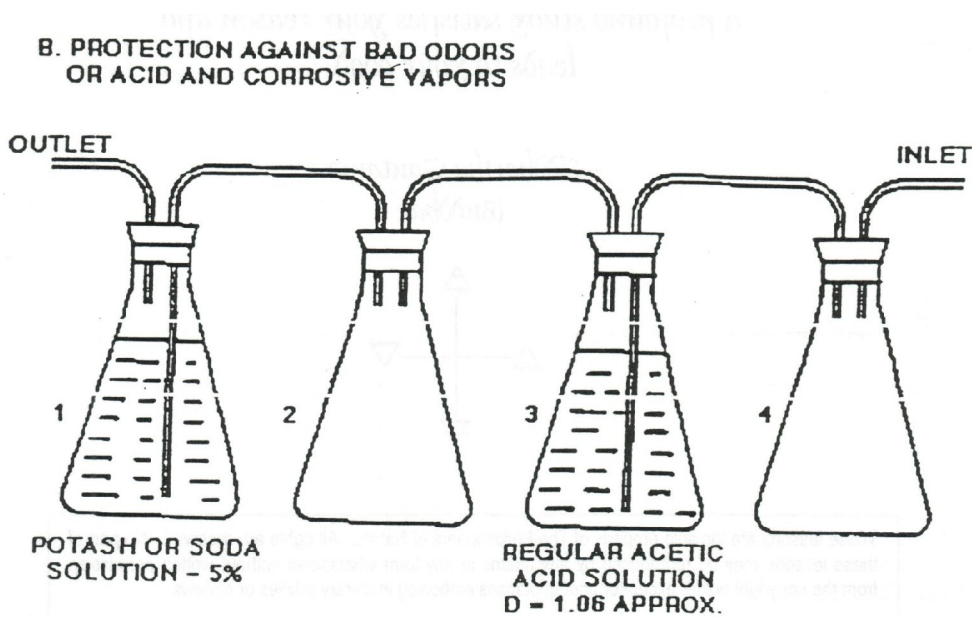


The ice box is first filled with two inches of sand spread out evenly, over which we lay a \$17.00 electric heating pad bought in a drugstore. Over all this we lay an other two to three inches of sand. We cut a small hole in the box to allow the exit of the electric wire and plug. We reseal the hole around the wire with tape or silicone. Some of these heating pads allow up to two or three temperature thermostatic settings. Once our sand warms up it holds within itself the heat, and due to the insulation of the Styrofoam box the energy used in such an incubator is negligible and very cost free for those who are energy conscious financially. I have found that even during power failures, the sand will keep warm for hours, which has saved my experiment many times.

For simple experiments, and for no hassle works, such heating pads can be simply wrapped around the containers holding our elixirs or stones.



Odor elimination and control is a must in all labs. If we cannot have access to a ventilation hood there is a simple way to neutralize odors and eliminate toxic gazes. Here is a very practical set up that can be achieved with simple mason jars if the more expensive glassware are not available. Again, taken from the PON lessons on Spagyrics, this diagram clearly shows a simple set up to achieve such protection against odors and corrosive vapors.



I have used this system in the distilling of solutions of gold and Aqua Regia in the work with gold chloride and metallic acid solutions with such safety that I could not perceive the irritating effects of strong acid vapors. It works extremely well. Such set ups are excellent for laboratory works in apartments.



Our beloved art is above all a philosophy. Its truths are veiled in symbols, correspondences and allegories because to dawn upon the mystery that our art reveals, a higher universal and archetypal language is required. If we wish we may add to our laboratories the many symbols encountered with as they are revealed to us in the most beautiful Hermetic literatures left to us by the masters. Surrounding ourselves with such symbols will attune us with the ancient yet universal meanings that are understood by our higher mind and that are engraved in the very depths of our souls.



Some examples are the crocodile, creature that can live under water and on the surface of the earth. Alchemists recognized each other when they saw this symbol in an other's house. It was an ancient code. Here I have added the green dragon, Pegasus, the tree of Life as the tree growing out of our stone bearing its red fruits, the Ancient War of the Knights and the struggle of the opposites in nature, the Red Lion as the virility of the life force.



The Tree of Life is always a very potent symbol in our philosophy. Here I present my version of it.

Let us not forget our hierarchical couple as our beloved King and Queen.



As time goes on, our laboratory slowly evolves. Little by little we can add to our laboratory as we can afford it. My laboratory is now almost 10 years old and I always seem to keep adding to it. It is a pleasure to see it grow and become more and more complete completing also myself. I am ending here by leaving you in my laboratory for a while.



The Eastern Wall.
See below the Northern Wall.



Northern Wall,
See below Souther Wall.





The Southern Wall.

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