Prickly Pear: Survival Plant

This is the only monograph in the book that will go into detail of a particular plant. I feel it is merited with this particular plant in a book about post-disaster or remote herbalism, because this plant is such an amazing plant on so many levels of medicine, nutrition and survival. The plant is the Prickly Pear cactus, which includes several species of the Opuntia genus. It is much more commonly found in the south and southwest of the USA, but one species or another can be found in most of the lower 48 states of the USA as well, and it can be harvested and dried (preserved) easily for years.

The Plant

Prickly pear is a cactus that most people are familiar with. The Spanish word for the prickly pear is "nopal," and it is used in Mexico and Central America for both food and medicine. There are a few hundred species of the Opuntia genus throughout the world, mostly concentrated in the western hemisphere. Although they are more commonly seen in the south and southwest of the USA, there are also species that can be found east, northeast and probably in every US state of the lower 48. At one time, Opuntia was considered an extremely invasive plant in Central America, Australia, the Caribbean and Mexico. It is extremely tolerant of drought, cold and bad soil, and you can take a pad and drop it on the ground, and it will quickly take root, although it does not grow and spread very quickly above ground. Once it's on the ground, the fibrous mesh network inside the plant (which we will look at later in this article) will extend in a tendril fashion and grow out through what are called the "areoles" to take root. The areoles are the same openings that both needles and glochids grow out of in the standing portion of the plant.

There is a needle-less variety of Opuntia which I personally love to work with, for obvious reasons. However, it is difficult to grow this version in deer-heavy areas unless you fence it, because it is eaten by deer more readily than the needled plant – especially during drought years.

The multitude of medicinal, edible and utilitarian uses of the prickly pear are probably best explained by stepping through the plant itself from top to bottom and outside to inside while explaining all the things we can work with as we move through it, rather than trying to divide the subjects into artificial categories. As we do this, it becomes apparent that it's difficult to artificially separate the myriad of uses. Instead the plant becomes personified and you can start to see its spirit through the plethora of offerings it provides to humans.

One quick comment as we start by looking at the prickly pear plant from a distance. You may also notice on some plants a white, crusty-looking substance on the pads. This would be the protective "housing" of a scale insect called a cochineal (Dactylopius coccus). This insect feeds off the sap of the prickly pear pads. In Latin America, the insect has been cultivated and used historically to produce a dye that is a very deep, maroon red. The pigmentation is stored within the tissues of the female insect and consists of about 10% carminic acid, which repels most predators from the cochineals. This deep red dye is very strong, and is an excellent dye. It does not fade easily.

The Flowers

The prickly pear blooms once a year, usually in late spring or early summer in this region. The petals are edible, and they are medicinal as well. Petals range from yellow to orange to red. Michael Moore stated that the redder the petals, the more medicinally effective the petals. I have experienced this to be true as well. The petals are an extremely potent mucosal vulnerary, affecting not only the mucosa but the sub-mucosal tissue as well. As a mucosal vulnerary they assist in helping that tissue regenerate and heal, which also restores organ system balance. If the mucosa cannot provide the necessary protection the body needs (both through the protective layers of tissue itself as well as the mucous it excretes), then that puts a huge strain on the surrounding region itself as well as other aspects of the immune system (and the organ systems that support it) and cellular work load that have to work harder to take up the slack to prevent pathogenic infection.

Therefore any powerful mucosal vulnerary like Opuntia is actually an extremely important herb for the herbalist to keep in their medicine chest and has a deeper importance than just symptomatic treatment of local mucosal irritation.

The nopal flower petals are wonderfully mucilaginous when crushed, and can be used raw, dried and stored, or can be made into a syrup for storing and more convenient use. When preparing the flowers in any of these ways, you can work with them similar to any demulcent such as marshmallow root or slippery elm. They work on the mucosa in any part of the body, both respiratory and digestive. This applies to conditions such as the myriad of mucosal irritations from dry coughs, asthma, sore and irritated sinuses, peptic ulcers, GERD, diverticulitis, BPH, cystitis, UTI's and urethral irritation.

The Fruits (Tunas)

The prickly pear fruits are the part of the cactus that most people are familiar with. These fruits are delicious raw or cooked, and the seeds can either be eaten or spit out, or dried and ground into flour as they are nutritious and have a reasonable protein content (around 15%).

The fruits have a pretty long harvesting period, but it is best to wait until they are fully ripe. When ripe, they are red from the top to the base of the fruit. If there is any green on the outside skin, that portion of the fruit will likely be too bitter to be fully edible. Once fully ripe, they can sit for weeks in that state before growing too old to be useable. They will store well in a paper bag in the refrigerator as well if you pick them for later use.

You may also notice a lot of bugs on the prickly pear, especially when the tunas start to ripen. These are likely the prickly pear cactus bugs (Chelinidea vittiger) and are harmless. They feed off of the sap both of the pad and the ripening fruits. Just brush them off unless you want the extra insect protein in your Opuntia fruit meal.

To skin the fruits, after either sanding or burning off the glochids (or using gloves) you can slice down the side of the skin lengthwise and peel it off all the way around. Or you can cut the entire fruit (skin and all) in half lengthwise and spoon out each half from the skin. Or you can sand or burn off the glochids and then eat the skin too. Or you can cook the tuna in its skin (in coals, steam it, bake it, etc.) and then peel and eat.

The fruit can be cooked, strained and made into jelly. It can be pressed into syrup raw or cooked down first (better). It can be pressed and strained into juice with a variety of recipes, and is a mild diuretic containing many flavonoids, vitamin C, minerals and other micronutrients. It can be mixed with rum and other types of

liquor to make great tasting drinks; it can be used as a syrup base for any medicinal herbs (to include the prickly pear flower spoken of above) such as a cough syrup base, bitters base, etc. Speaking of drinks and syrups, folk medicine uses for the juice of the tuna include it as a cure for the hangover. I have not personally found this to be true but this may only be because my hangovers are too extreme to be soothed by this particular plant.

There are still several other edible and medicinal uses and methods of preparation for the prickly pear fruit that I am not mentioning here. This is a plant that requires experimentation in order to get to know. Let your imagination guide you as you work with it.

The Needles and First Aid

Looking at the Opuntia we of course are faced with very sharp cactus needles that will hold us at bay until we do something about them. The needles technically come in 2 varieties: The spine (what we normally think of when we think of a cactus needle) and the glochid. The glochids are very short and fine (human hair thickness), barbed needles. Right off the bat we can see that we have some possible first aid situations presented to us from this plant. The cactus spines are easy enough to avoid, but the glochids can be very irritating and even cause long-term problems (for several months) if you can't get them out.

There are several ways to pull out the glochids, some more successful than others. What I find is that if I stop whatever I am doing the moment I know I have them, my chances of pulling them out are about 100% more successful without going to a lot of trouble with tweezers and/or other methods.

They are barbed and will quickly sink deeper, but when you first get them, unless somehow you pushed them in deeply right off the bat, you can often pull them all out in a bunch that you can even pull with your fingers or fingernails, provided your nails are not too short.

Tweezers is the next step. Along with that, for the ones you can't get with tweezers, you can use variations of the tape method. Just plain duct tape or some other type of tape, usually doesn't work that well. One thing that does work pretty well if you have it available, is simple, household glue (like Elmer's or even wood glue), spread over the area, and then a gauze put down on top of that. Let the whole apparatus dry for at least 20-30 minutes (depending on the glue), then pull it off.

We'll talk about other methods to pull out splinters and embedded cactus needles using the prickly pear itself a little later in the chapter.

Before we remove the spines and glochids, let's talk about the uses of the spines. They are not barbed, and make a decent, strong needle for pulling out thorns, digging into an abscess and all the other things that a needle is very useful for both as first aid as well as general utility (sewing, puncturing, etc.), and even primitive fishing.

Safely Removing Needles from the Prickly Pear

Gloves are a big help in the removal of needles from the prickly pear pad. If you are in a primitive environment and don't have gloves available to you, assume you'll probably end up with some glochids in your hands somewhere no matter how careful you are. You can use a stick to hold with one hand and move it around, or a pair of sticks like tongs. I have also used a big piece of juniper bark, as it is flexible enough to maneuver in sort

of the same way as a potholder, and hold the cactus with the hand that way. Otherwise you have to carefully hold the plant with a couple of fingers.

The cactus pads break off on the axis of the rib (edge) of the pad much more easily than on the axis of the face of the pad. It barely takes any force to bend them and break them off if you push or pull them (this can even easily be done with a stick) in the correct direction.

There are several ways to remove the needles, but honestly the best one (and I've probably tried them all, or at least all that I know of) is to sand them off between two flat rocks. It takes a few extra minutes, sometimes with a smaller, flat rock, to sand the glochids off the spine or rib of the pad.

Once the pad has no needles (or maybe you started with a needle-less variety in which case you didn't have to go through all that), we can now get to the heart of the matter from the perspective of pure plant medicine. The prickly pear pad all by itself represents a plethora of medicinal, edible and practical uses.

Prickly Pear Pad

Now we come to one of the most interesting and useful aspects of the prickly pear cactus: The pad. There are an untold number of uses for this part of the plant.

The pad by itself is food. I recommend you cook it first, especially if you are not used to eating "nopalitos." People often scramble them with eggs, onions, peppers, etc. The benefits from eating prickly pear directly as a medicinal food lie mostly in its use for early (or any stage), type II diabetes. The high percentage of inulin serves to maintain a lower glycemic index of both the nopal itself as well as any food eaten with it. It slows down the digestion of food, moderating glycemic spikes in the bloodstream. The high percentage of pectin in this plant also helps lower cholesterol. You can just cut them into strips, skin and all, and cook them that way, like bell peppers.

Next, let's look briefly at using the pad itself as a type of container. Containers are extremely useful. If you don't believe this try going for 24 hours of your life without using a container of any type (cup, glass, bowl, pan, etc.). In a primitive environment, containers are often limited, and I rate them as one of the top 3 basic tools to take with you in a survival situation of any kind (the other 2 being a knife and cordage).

To make a container out of the prickly pear pad, we can cut it across the horizontal axis (for a cup) or the vertical axis (for a bowl). If applicable (i.e. you're not in a totally overgrown area of prickly pear), then don't forget to throw the part you cut off (assuming you don't need it) somewhere in decent soil as it will very likely take root and grow a new plant. Always propagate the plants you use if possible as a way of thanking them. If not possible, always at least compost them.

Now we can use a knife or even a sharp stick if we don't have a knife, and slice down through the center of the pad, taking care not to get too close to the edges or the bottom. After the first pass with a knife, insert your hand and gently expand the internal area, again taking care not to get too close to the edges. Then open the container by pushing in on the outer edge. For cups, you may need to take a small stick and wedge it between the widest part of the opening to keep it open as fully as possible.

You can boil water in this (I made a video on YouTube/TheHumanPath demonstrating this) to purify it or make tea, soup or stew over coals, in an edible container no less! You can insert food into this like a pita pocket,

and cook the food (we commonly cook fish and fowl this way in our survival classes) and eat the prickly pear pocket along with your food inside, you can use it as a pot-holder mitt, you can heat it and use it as a supreme, hot, poultice wrap over an extremity like a hand or foot (more on prickly pear poultices in a minute).

Once we cut open the pad completely, notice that we have a very mucilaginous center which also contains a matrix webbing of fibrous plant tissue. This fibrous layer is made up of fiber about the thickness of thick dental floss and can be used as cordage while fresh. The entire fiber makes a netting that could be used, in a pinch, as something to wrap a poultice to an extremity. The fiber itself is strong while wet, but loses strength considerably once it dries.

The mucilaginous layer itself is extremely useful as medicine. This goopy substance is very similar to Aloe in many ways, and can be rubbed into the skin for burns and minor abrasions. Even more importantly, it can be used as a very effective base for a poultice mix. This mucilaginous interior of the prickly pear cactus is hypertonic, which makes it very softening to the skin. It is also hydrophilic and is a superb as a drawing agent for infections, pus, splinters, etc. under the skin. Heated, it becomes even more effective. I have used this type of poultice both for simple splinters (which can become not so simple in a field environment if not taken care of) to more serious conditions with great success, such as brown recluse bites and cellulitis. I have also used it as a base for wound-care poultices effectively. As an example, I use a wound powder for poultices like this, which usually consists of chaparral (Larrea tridentata), Red Root (Ceanothus spp.), Myrrh (Commiphora molmol) and Yarrow (Achillea millefolium) as well as sometimes Echinacea angustifolia. The benefit of the prickly pear gel in a poultice is that it tends to normalize the tissue state around a wound very well. When using poultices for wound care, it is very important to watch the tissue state of the wound and not allow it to become too wet (boggy) or too dry. Prickly pear, similar to Aloe and honey, maintains that state much better than using water or even saline solution in your poultice.

There are several ways to use the nopal gel in a poultice. You can scrape it off and use it the same way you would use Aloe, honey or water to mix directly with the dried or fresh herb, then apply it to a gauze (or in some cases directly on the skin). Or in a field environment you can cut a crisscross pattern in the mucilaginous layer (but not all the way through, stop at the inner layer of the outer skin) and then sprinkle or rub the dried or fresh herb on that area and apply the inner, her cactus pad directly to your skin, then wrap with an ACE wrap or some other way to keep it snugly fitted to the skin.

Heated poultices are highly effective in the care of infected tissue, and should be discussed as a separate subject. However, if you are familiar with using heated poultices, prickly pear is plant material that is almost custom made for this type of treatment. You can heat the Opuntia gel in several different ways while it is on the pad if you're using it that way rather than scraping it off first. It's best to keep all the water content in the gel, so my preference is to steam the pad (if you have the apparatus to do that, at home for instance) or cover it in some way and put it on coals in a field environment, if you can't steam it there. Any kind of covering, from aluminum foil to grasses, will wrap and keep it very moist. If you can't do that, you can still heat it directly on coals or a heated flat rock, but just need to be aware that it will start to dry out after 2 or 3 rotations, so you will have to consistently rotate through multiple pads in that case.

If you are removing the gel to use it off of the pad, then it's easiest to use a fork first to break up the gel. Scrape the fork across the inside of the pad in several stripes from one side of the pad to the other in a crisscross pattern. This makes it very easy to then scrape all of the gel off of the pad. You can then mix this pile of goo in with other herbs, or dry it (it dries very quickly and easily in a food dehydrator, or on a screen in a dry, shady area)

and reconstitute it later. I have found it works far better as a dried herb to reconstitute than Aloe Vera does, and dried Opuntia is my choice for an herbal, field, first aid pharmacy for that reason.

Another poultice that the nopal pad gifts us with is a tooth/gum infection poultice. Cut a piece of the pad to the right size and shape, and insert between the gum and cheek. It will hold itself in place very well. You can use it for a drawing poultice first (again, you can heat it first – which is best done by cutting several pieces to the same size and shape and letting them sit over steam and rotating through them every 10-15 minutes), and when ready you can also add powdered herbs to the surface (as explained above)if you prefer. For the mouth, I usually use Elecampane (Inula helenium) and Myrrh (Commiphora molmol).

There are even more ways to use prickly pear as a poultice, but these are some of the most common and important ones in my experience.

Finally, I'd like to bring up another little-known (yet historical and very successful) usage of Opuntia. It can be used to purify water in the field with some pretty amazing results. The gel itself becomes a flocculant and collects clusters of bacteria and other pathogenic microbes of that size and greater, to the tune of around 96% filtration rate of said microbes. If you know anything about water purification, you should know that this is a pretty phenomenal result from plant-based water purification.

To clean your drinking water in this way, first run your water through any kind of filter to get rid of all turbidity. This could be a handkerchief or cravat from your first aid kit, or a clean t-shirt, etc. Once the water is relatively clear, fillet the pad in half and cube the halves into approximately ½ inch squares. This helps increase the surface area of the gel as it is dispersed throughout the water.

Place the cubes into the container of water. I fill with between 30 -40% of the overall volume of the container with the Opuntia, depending on how dirty I suspect the water is. To be safe, you could go much higher, to even 50% or 60% of the volume taken up by the prickly pear cubes. Strain the water and enjoy.

As a final note regarding the caretaking of Opuntia, I mentioned the fact that prickly pear was considered an invasive species in certain parts of the world for many years over the past few centuries. Here is some disturbing information to the contrary:

There is a moth called the "cactus moth" (Cactoblastis cactorum) whose larvae feed on the prickly pear voraciously. This moth was introduced to different locations around the globe that were outside of its normal ecosystems where it is otherwise kept in check, in order to control the prickly pear growth. As a consequence, the moth has almost eradicated prickly pear in many regions around the planet. The cactus moth has recently made its way from the Caribbean into Florida and is slowly spreading through the southeast USA, endangering the prickly pear as it spreads. For this reason, please be cognizant of overharvesting this wonderful medicinal plant, and help it proliferate in an appropriate manner within whatever ecosystem you may be harvesting and working with it.