

'NETTLES FOR TEXTILES'

"Nettles are the fibre of the landless."

We know, historically, that people have used the fibres from nettle plants to create textiles. Exactly how they did so, however, remains somewhat elusive. In Gillian Edom's seminal book 'From Sting to Spin – A History of Nettle Fibre' she included a number of tantalising quotes and extracts that give us clues as to how our ancestors may have approached this problem.

I became increasingly fascinated with exactly how this may have been done and as it was more than likely that it was being accomplished by people in the early Neolithic, without metal tools, I concluded that the process they used must have been both simple and effective.

I read books, watched Youtube videos and trawled through impenetrable academic papers, looking for a definitive, simple, start to finish 'How To Guide'. I experimented with the various methods – or at least some tantalising suggestions – that I'd uncovered in my research, but none appeared to produce the long, fine 'line fibres' that I'd seen extracted from flax and hemp.

As a result, it was only through practical experimentation - trial and error essentially - that I arrived at a method whereby I could extract, clean nettle fibres and spin them into a yarn with which I could weave.

Having spent a couple of years refining the process, a fortuitous collaboration with an old friend of mine, Dylan Howitt, resulted in a short film called 'Nettle For Textiles', in which I demonstrated the process of extracting nettle fibres, as far as I'd taken it, in the hope that by making it available more widely, there was a chance that it may prove helpful to other people, who were possibly ploughing a similar furrow.

As it turned out, there were thousands, from all around the world, who were either actively pursuing the same ends or at least interested in finding out more. As a result a 'Facebook group', 'Nettles For Textiles' was launched, as a virtual space in which all those interested in the process, could congregate and share knowledge, skills and observations.

It soon became apparent, however, that it was generating so much useful comment and discussion that these gems were fast disappearing down the page. Clearly some sort of website needed to be set up, on which practical tips and useful links could be compiled, ordered and readily accessed.

However, I possessed none of the skills necessary to make this happen and as has been the way thus far, two friends readily stepped up and volunteered their services, namely Brigitte Kaltenbacher and Gillian Edom. I'm indebted to both for

their expertise and support and together we hope that this website will not only prove useful to those looking for practical information on the processes involved in turning nettles into textiles, but a resource for those interested in the rich history and folklore of this wondrous plant, 'the Common Nettle'.

NETTLE PROCESSING

In Northern European countries, nettles, along with flax and hemp, are the plant fibres that we are most familiar with and historically the ones that we've worked most closely with. They are all 'bast' fibres and share certain similarities, not least that they all provide incredibly nutritious seeds and their fibres are long, strong and hardwearing. However, when it comes to processing their fibres, there are significant differences.

Although the nettle family is a large one, the particular nettle that we are primarily concerned with is '*Urtica dioica*,' otherwise known as 'the Common Nettle' or 'the Stinging Nettle'. (However, many of the processing methods discussed should be directly applicable to other urticae.)

Nettles are hollow stemmed and the fibres run longitudinally, up the outside of the plant. Unlike flax, nettles have a rough outer 'bark', which, unless removed, gives the fibres a coarse texture. It's important to understand that the fibres and the outer skin/ 'bark' of the nettle are distinctly different parts of the plant, in spite of the fact that they are both included in the 'bast'.

This 'bark' clings to the fibres like scabs to a knee. (You don't necessarily feel this coarseness when the plant is green but once dried it becomes all too apparent.) With flax, once the pith/ core has been removed, the fibres are ready for combing and spinning. Nettles, on the other hand require an additional, time-consuming step and that is to remove this rough 'bark' from the fibres – it is this step that, historically, has constrained our use of nettles as a textile fibre of choice.

Whenever other fibres were available, it appears they were usually utilised first, with nettles being left for times of scarcity, landlessness and poverty. However, this is not to diminish the quality of the fibre that can be extracted from nettles. It has been called 'the Silk of the North' and once fully processed is astonishingly soft, silky and strong.

I have the most experience and familiarity with the 'dew retted' method and I'm confident that this method will produce results for most people, in most parts of the world. This is the method I demonstrate in the film, 'Nettles For Textiles'.

<https://vimeo.com/225183045>

Nevertheless, whichever method you end up using, they nearly all start off the same way and that's with finding good tall nettles to harvest.

HARVESTING

If Stinging Nettles (*Urtica Dioica*) are native to your area, you will no doubt already be familiar with them - there aren't many of us that have never been stung by a nettle.

The growing season of the nettle will be specific to your area, but here on the South Coast of the UK, our harvesting season begins in late June and lasts until late October, although the onset of autumnal rain and colder temperatures mean that they're starting to look pretty tattered and sorry for themselves by November.

Nettles are a foodstuff and habitat for all manner of creatures, so, as with any foraging, you only want to harvest a few stems from any given patch and there's little point in harvesting more than you're realistically going to process and use. Nettles do produce numerous seeds, however, it's the underground rhizomes and stolons that are the primary means through which nettles spread. When harvesting nettles, I cut the stem a few inches up off the ground, leaving the roots and rhizomes undisturbed. In this way one is essential 'coppicing' the plant and ensuring that there will be plenty of healthy nettles waiting for you the following year.

Nettles grown in shaded woods will have a different quality to those growing in full sun on the edge of a field, just as those harvested earlier in the season will differ from those harvested later. Some nettles have purple coloured stems, whilst others are green, some are male and other female, but quite how these differences affect the resulting fibres is one of the many questions that we hope to get better answers to, through our collective endeavour and the sharing of our observations.

I usually gather a bundle of 25 - 50 of the tallest and thickest nettles I come across over the course of a walk. How far I have to carry them will also have some bearing on my size of bundle. You will soon start to develop an eye for the sorts of places that nettles like to grow and will undoubtedly discover wonderful new walks and beautiful spots that you'd have no reason to visit otherwise.

The nettle harvesting equipment one needs is simple and light-weight, I usually carry a small knife (to cut the stems), some tough gloves (to protect my hands) and a small patch of leather (to strip off the foliage and side-shoots).

If you watch the video 'Nettles For Textiles' you can see me demonstrating how I strip off the leaves and side shoots, using a small square of leather, wrapped around the stem. This also flattens all the stinging hairs, rendering the stalks safe for subsequent handling. I usually carry a length of cordage in my pocket, so I can tie the bundle up - top and bottom - and sling it over my shoulder and carry it back home.

TO 'RET' OR 'NOT TO 'RET'

'Retting' is an old word for rotting – and one rots fibre plants in order to initiate a separation of the fibres from the pith or core of the plant, as well as the fibres from each other.

The fibres are primarily bound to each other and in turn to the core of the plant with pectin and gums, which begin to break down through fungal and bacterial action. In order to create the perfect environment for these bacteria to flourish, one either submerges the plant in water, or leaves them on the grass, to be moistened by the dew – named accordingly as 'water' and 'dew retting'.

'Water retting' is much faster than 'dew retting' - lasting just a few days - whilst 'dew retting' can take several weeks. However, both methods will be very weather and temperature dependent.

A very interesting article on 'retting' was linked to on the 'Nettles For Textiles' Facebook group. Although the author is primarily discussing hemp, he describes in great detail what is actually occurring biologically/ chemically when 'retting' and much of this information is certain to be applicable to nettles as well.

<https://www.hempbasics.com/hhusb/hh3fiber.htm>

In addition to these two types of retting, nettles have a third, entitled 'root retting' by author and nettle pioneer Birte Ford. (xxx link to Birte's book) This essentially involves letting winter do its thing and allowing nature to do all the decomposition for you. If your particular climate is just right, in early spring you may find weathered nettle stems still standing, largely devoid of vegetative matter, but with their fibres intact.

"But", you may be asking, "why bother with all this retting business at all?"

Retting may aid with the removal of the fibres from the core of the plants, the separation of the fibres from each other and in the case of nettles, possibly help with the removal of the coarse, outer 'bark', but it also weakens the fibre. The art of retting is being able to find that sweet spot between fibre degradation and ease of processing.

However, many people, will usually by-pass the retting stage altogether and choose to use nettle fibres straight from 'green'.

Before discussing, in greater detail, the alternative 'retting' methods, as well as ways in which the fibres can be used 'green', I will concentrate on the process demonstrated in the 'Nettles For Textiles' film.

'DEW-RETTING'

This is the method I'm most familiar with and the process is pretty well covered in its entirety in the 'Nettles For Textiles' film. ([xxx link to 'Nettles For Textiles' - vimeo](#)).

THE 'DEW-RETTING' PROCESS:

Since it is such an integral part of the process, perhaps the 'dew-retting' step itself could benefit from further illumination. Unlike 'water retting', where the plants are submerged in water, with 'dew-retting', the plants are spread out on a patch of grass and exposed to the moisture of the morning and evening dew and any rain that may fall whilst they are out in the elements. The stems are turned once a day, so both sides are exposed to similar amounts of sun and shaded, damp grass.

The length of time one leaves the nettles to 'dew ret' for is entirely dependent on the nettle itself (is it young/ green/ old/ tough? etc.), the elements (especially rainfall) and the temperature.

It's important to bear in mind, that all we're trying to achieve by 'retting' is to release the fibres from the woody core of the plant. Bacterial and primarily fungal action, encouraged by the moist and warm conditions, begin to break down the pectin, gums and other materials that bind the fibres to the core.

'Retting' the nettles, in and of itself, won't deliver you clean, long white fibres ready for spinning. It won't remove the rough outer bark and the fibres will still be largely bound to each other. However, if the plant has been sufficiently 'retted', when one goes to remove the fibres, they will come free from the core in long ribbons, without the core sticking to them. If you simply harvested a nettle and let it dry, when you came to strip the fibres off, they would only tear off in small slithers, with most of the fibres remaining glued to the stem's core.

As has been mentioned, 'retting' means 'rotting' and the fibres are gradually degrading all the while 'retting' is occurring. If you let your plants 'ret' for too long, you will discover that the fibres have rotted away completely and you're just left with a fragile, hollow stick.

The main advantage to 'dew-retting' over 'water-retting', to me at least, is that it's slower and as a result you have much wider margin of error. You really want to avoid over-retting and losing the fibres altogether. The way to ensure this doesn't happen is to keep checking on the state of the fibres by selecting the stalks that look like they're retting faster than the others, splitting them open and stripping off the fibres. If the fibres are still present, but not coming away from the core very cleanly, then this indicates that batch can remain retting for a while longer.

The tips of a nettle plant contain very few fibres and as a result you will notice that after a few days of retting, these tips will go a light, beige colour which indicates that any fibre and 'skin' or 'bark' present has decomposed and what you are seeing is the woody core of the plant.

This 'balding' or fibre loss is another very useful indicator. Whilst early 'balding' on the tips of the plant are to be expected, if that 'balding' starts to occur towards the middle of the stem, then you are alerted to the fact that you are losing precious fibres and the plants needed to be lifted and dried, to arrest the retting process.

However, observations by members of the 'Nettle For Textiles' community, from a number of different locations round the world have highlighted a problem that I, luckily, have not experienced with any noticeable severity and that's the damage that slugs and snails can inflict on one's fibres. Fresh nettles have a high sugar content, which, as well as promoting fast fermentation, is nectar for ravenous gastropods. What I had always imagined to be natural 'balding', through the retting process itself, may, in many cases, be the results of slug and snail grazing and for some this damage has been fast and comprehensive. However, my personal observations lead me to conclude that it is only when the 'bast' has already started to 'ret' – to a greater or lesser degree – that the slugs and snails are able to start devouring it and eating it right down to the core.

Either way, whether through slug and snail damage, or 'retting' itself, when these 'bald' patches start to appear, you need to lift your stalks and allow them to dry out. An under-retted stem may be a little harder to process and stripping off the fibres will result in a slightly higher percentage of the core sticking to them, but at least you will still get useable fibres off the plant. If your plant has a number of 'bald' patches and is over-retted, you will end up with barely any and all your work up to this point will have been in vain.

I have found that one can, to a degree at least, control the retting process by raising the tips of the stems up off the grass slightly. I do this by propping a stick or bamboo pole across a couple of bricks and leaning the tips of the stems across it. This essentially ensures a more even ret, with the thicker, tougher fibres towards the bottom of the stems getting more moisture than the delicate tips.

As I'm usually dealing in bundles of nettle stalks, I will ret and lift them as a whole, by making a judgement call that on average, they will be roughly at the same point. However, given the differences that exist between any two given plants, it may well be that some will ret a lot faster than others. For the most part, you are removing these first, by using them to check on the state of the fibres. So in a batch of say 25 nettles, you may well have removed 5 or 6 before you decide to lift the whole batch.

I find the technique of lowering or raising the tips of the plant is both helpful for controlling and evening out the ret, but it can also help with discouraging slug and

snail damage, especially during the day, as the sun and drier conditions usually ensure that they beat a hasty retreat.

As well as retting, the stems are also drying out and as they do so they will start to lose their green or purple colour and turn into various shades of brown and grey. The colour of your stems - the reduction in 'greenness' - is another useful indicator, but not one on which too much emphasis must be placed. Stems will often be fully retted whilst there is still quite a lot of 'green' present, especially towards the bottom 1/3rd of the plant. Once lifted and allowed to dry out fully under cover, the 'greenness' will naturally disappear.

The indicators discussed thus far, are far more useful to you than sticking to suggestions of set 'retting' times. Roughly, I'd suggest retting will take from as little as 10 days, to as much as 3 - 4 weeks. If you were retting through a period of persistent rainfall, it's much like you are 'water-retting' them and you may be looking at days rather than weeks. Alternatively if you are retting through a very dry, hot period you're looking at weeks rather than days.

If your local climatic conditions are very dry, then you may have to manually moisten the plants in the morning or evening in order to create the optimal conditions for retting to occur. You may need to keep them out of direct sunlight or it may be that 'dew-retting' just isn't an option and you'll need to tackle the problem a different way, ie. 'water-retting' or 'processing the fibres 'green'.

If, however, you are experiencing very wet weather then you may want to slow or arrest the retting by lifting the stems and letting them dry out under the eaves of a roof until conditions have improved. During wet conditions you may find that your plants become quite discoloured, with black mould appearing along the length of the stem. Apart from alerting you to the fact that the fibres may well be rotting away beneath the surface, I have not found this discolouration a problem and is largely confined to the outer 'skin/bark' of the plant and will be scraped away later in the processing.

I usually begin 'dew-retting' as soon as I get back home with a bundle of nettles, so the indicators and descriptions I have given are predicated on this basis. However, I know from retting flax, that many people choose to first dry the plants and only then begin the retting process. Although I personally have not tried it this way, it seems to be a safe assumption that it would work just as well with nettles as it does with flax and hemp.

Although retting is a complex biological process, it's important that you don't feel intimidated by it. At the end of the day, you're just allowing the plant to start decomposing and by careful observation aiming to arrest it before the process starts to degrade the fibres and compromise their strength and length too severely. The first few attempts may or may not work for you - I lost hundreds of stems the first year I tried it out - but you will soon build up a feel of what's required and will

develop a keen eye. Nettles are in fact, much harder to ret than flax, not least because there is a greater variation between plants. This is obvious really, as your bundle will be most likely be made up of the tallest plants from several different stands, all with unique growing conditions, whereas flax will be grown by side in the same field, so there is much more uniformity between the plants.

Once you've decided the retting is complete and you've lifted your bundle of stalks up off the grass, you need to let them dry out fully before they can be stored. Leaning them up against a sun-facing wall, under the eaves of a roof is ideal. Once dried, they can be stored indefinitely, but I would recommend keeping them inside the house as nettle stems have a tendency to absorb moisture or dampness from the air and can develop a thick black mould. Whilst this doesn't, in and of itself, appear to affect the fibres too detrimentally, it's preferable not to have to work with them in this condition.

The fact that 'dew-retting' is fairly forgiving and the dried stems store indefinitely, make this method the most flexible and best suited for the realities of modern life.

STRIPPING OFF THE 'BAST':

If you have time and decide to strip the 'bast' off your 'retted' nettles, straight after they're lifted off the grass, there may be sufficient moisture present in them, that this can be accomplished quite simply by hand.

If, however, your 'retted' nettles have been stored for some time before you get round to stripping them, the stems may well have hardened to such a degree, that you find it impossible to get your thumb nails into them sufficiently to split them open. If this is the case, you could use a rolling pin or baton to gently tap the stem until it cracks open a little, at which point you continue the process manually.

Traditionally, once 'retted', hemp and flax are 'broken' using a 'brake'. This essentially consists of a heavy wooden blade or blades, that smash down on the stem, crushing the inner core of the plant, thus allowing it to fall away, leaving the fibres free and largely intact. Whilst this works brilliantly for flax, with nettles, I find it preferable to try and strip the fibres off by hand as one develops dexterity in easing the fibres across the 'nodes' of the plant, ensuring a greater yield of longer fibres.

The fibres should peel off the core in ribbons. The fibres will run out before you reach the tips of the stems and they'll probably tear and come away in shorter sections towards the base, however, you should still be getting the majority of your ribbons to stay longitudinally intact along the length of the plant. But don't worry unduly about breakages and tears just try to remove the fibres as best one can. There'll always be a percentage of the 'bast' that adheres to the core and if it's just the odd little short strip, then it's not worth the effort trying to remove them.

Similarly, if bits of the woody core adhere to the stripped 'bast' – this will predominately occur towards the base of the stem – you could spend a bit of time easing any larger slithers off the fibres but for the most part you can simply ignore them as they will be removed in the 'hand-rolling' and 'scraping' stages.

You will notice that once the 'bast' has been stripped from the core of the plant it naturally suggests further division into finer ribbons. As each stem is stripped and the 'bast' roughly separated out into its component ribbons, they can be laid out on the floor and as you add to it you try to keep the root ends together at one end and the tip ends together at the other.

Once a whole bundle has been stripped, I tie them together with a bit of twine and coil them into 'doughnut' shape ready for storage.

HAND-ROLLING THE FIBRE BUNDLES:

Although you could progress immediately to the 'scraping' stage, I have found that softening up the fibres by rolling them vigorously between my hands helps with the 'scraping' process. I usually do it when I'm out walking in the countryside with the dog. I'll take a few bundles with me and simply roll them between my hands as I walk along. As this is a rather dusty job, I find it preferable to do it outside anyway. As you're rolling the fibre bundle, you feel the odd hard bit of core or pith, that you missed whilst stripping the fibres and this is a good opportunity to pick those out and discard them. As the fibres soften up, the easier these hard bits are to feel. You'll also be able to gently pick off any tough 'nodes' that are still adhering to the fibres – a little bit of care goes a long way when you do encounter them, as this is where the fibres will often split or break.

What is also starting to happen is that this hand-rolling and manual manipulation is removing some of that stubborn outer 'bark'. If you were to carry out this hand-rolling over a sheet, you would see a dusty pile of 'bark' beginning to build up on it.

As you are rolling, the odd ribbon of fibres will come loose and need to be reintroduced back into the main bundle. You would simply align the centre of the ribbon to the centre of the large bundle and then carry on rolling.

When the fibres are softer and more pliable – or indeed when you're sick to the back teeth of rolling them – they can be retied around the middle and coiled back into a 'doughnut' for storage or further processing.

SCRAPING THE FIBRES:

The next step in the process is scraping the 'bark' off the fibres. Some of the 'bark' will have been removed in the hand-rolling step just discussed, but the majority of the 'bark' will be removed by manual scraping.

However, more recently, I have found that at this stage, pulling the fibres through some 'flax hackles' slightly increases the amount of 'line fibre' extracted in relation to the 'tow'.

'Hackles' come in all sizes and shapes, but essentially they consist of several rows of thin, strong metal spikes or nails. I have made several sets, out of mattress needles, for processing the flax I grow on my allotment, so, as I have them at hand, I use them on the nettle fibres too. As you pull the 'strick' (bundle of fibres) through the 'tines' of the hackles it both removes the shorter and tangled lengths of fibre, as well as splitting the ribbons into finer and finer widths. The longer fibres, left in your hand, are called 'the line fibre', whilst the bits left in the hackles is called the 'tow'.

'Nettles For Textiles' member, Judy Kavanagh, posted up a very useful video of her doing essentially the same thing using wool-combs.

<https://www.facebook.com/groups/1648679398499874/permalink/1723954190972394/>

The chances are you may not have access to 'hackles' or wool-combs, so you can simply skip that stage and begin scraping the fibres. I use an old table knife that has no serrations. The blade is blunt, but relatively thin, with a slight flex to it. I primarily use it because it sits comfortably in the hand. I've also used other table knives, that do have serrations and if they'd sat more comfortably in the hand, I'd probably have ended up using them. I've also used several flint flakes, knapped by 'Nettles For Textiles' member and archaeologist Peter Bye-Jensen. Those do have serrations and as well as being comfortable to hold, they were just as, if not more, effective than the knives. The point being that you should experiment and find something around the house that feels comfortable and does the scraping effectively. I'd definitely advise against using a sharp knife!

I tend to do the scraping indoors as all the tow that is generated, falls to the floor and needs to be gathered as you go. It can get very light and fluffy and the slightest breeze will blow it away. I keep a firm hold on the fibres and usually begin scraping at one of the ends of the bundle. Almost immediately, strands of fibre will be tugged out, but just carry on gently scraping the fibres by pulling the knife blade and one's thumb over them, in a brushing motion towards the tip. I find putting a slight twist into the bundle of fibres with one's other hand, helps grip them and prevents them from being tugged out too easily by the knife blade.

I turn the bundle around frequently and essentially work towards the middle from both ends. It's perhaps a little alarming and dispiriting to see how many of the longer fibres break up into shorter lengths and are tugged free of the bundle, falling down to join the growing pile of 'bark' dust and debris at your feet. However, there is also a sense of wonder, as the once stiff and wiry 'bast' ribbons are transformed into miraculously soft and silky individual fibres.

The cleaner one's fibres get, the smaller the bundle grows. However, it is worth stopping periodically and going through that debris at your feet. In amongst it will be plenty of longer fibres that got tugged out early in the scraping, because they were doubled up on themselves, or were attached to nodes and came out with them. I collect all these still viable, longer fibres together and either add them straight back into the bundle or scrape them for a bit separately and then reintroduce them.

I tend to scrape the fibres as clean as I can possibly get them as I think this aids with their spinning and results in a stronger, more even yarn or thread. There is no doubt, that once you've twisted the fibres and turned them into a yarn, boiling will remove a significant amount of any remaining debris, however, tough sections of poorly scraped ribbon fibres that have found their way into the finished yarn, will persist and can be prone to snapping.

What you are ultimately ending up with is a small – perhaps dispiritingly small – hank of clean, soft, 'line fibre' and a much larger pile of 'tow'. Your precious hank of 'line fibre' is not going to be of much immediate use, seeing as there is so little of it, so I choose to store them in a bag which I keep adding to each time I do some processing. I'm slowly amassing a bag of these beautiful soft hanks and at some point will spin it all up into yarn, preferably when I've developed a greater skill at spinning super-fine fibres.

Quite how these 'long-line' fibres are organised in order to spin them effectively remains a somewhat open question. Presumably treating them as one would do flax, with the use of a distaff, is a possibility, although I find just teasing them apart and laying them down individually side by side on the floor or table and adding them in as I go, works well and prevents tangling. This is the method I'm using when spinning the 'line-fibres' from 'green' nettles. Alternatively, just tucking one end of a 'strick' of nettle fibres into your belt and fanning out the other before you, in front of your spinning wheel, may help speed the process up.

'CARDING THE TOW'

The majority of your fibres will be on the floor at your feet. You will have already gone through it, several times, extracting the longer fibres that got scraped out and reintroducing them to the bundle of 'line fibres'.

Along with these shorter fibres is a mixture of 'bark' dust and fine nettle 'fuzz' – which is unusable because it's so light and insubstantial. The 'bark' and the 'fuzz' can be swept up and put into the compost, whilst everything else can be roughly sorted back into a bundle or hank and scraped again. The purpose here is just to try and scrape off the remaining sections of 'bark' and discard any tough, persistent fibre ribbons, which are usually from the base of the stem. So you're basically now cleaning up your tow as best you can, allowing any 'bark' dust and light 'fuzz' to fall away but hanging onto the fibres themselves.

When you've scraped all you can, you can finally put aside the knife and turn to your wool carders. Wool carders are an essential piece of your 'netting' kit. They basically consist of two boards with handles, each covered in a rubber mat, that has hundreds of little angled tines poking through them.

You place a small amount of tow onto one of the carders, teasing it out so that it is evenly spread across the carding surface. Then with the other carder, you simply start gently brushing the fibres at the edge of the static carder. This will do two things – it'll scrape away the rest of the 'bark' adhering to the fibres as well as starting to align the fibres along the width of the carders. You keep swapping the fibres from one carder to the other and continue brushing them, removing the 'bark' and other bits of debris. In amongst the fibres, you will notice that a small percentage of the fibres simply refuse to relinquish their 'bark', so I simply tug them out and discard them. As mentioned earlier, the cleaner you get your 'line-fibre' and 'tow', the better the resulting yarns will be.

When you've brushed the fibres until little or no dust is still falling from them, you transfer them all to one or other of the carders and then simply roll them up into what's called a 'rolag'. A 'rolag' is an organised curl of fibres, roughly aligned, but now in a form from which they can be easily spun, either on a drop spindle or a spinning wheel if you have one. I tend to prefer the drop spindle when spinning nettle 'tow' as I find that I do most of my spinning when I'm out walking, waiting for buses, travelling on trains etc. so it's far more portable and convenient. There is no doubt that the spinning wheel is faster, but there is a saying that goes, 'a spinning wheel wins over a day, but a drop-spindle wins over a week'.

Whichever way you go, you will soon develop a feel for how your nettle 'tow' spins up. The more thoroughly you process and card your fibres, the easier they'll draft. I use saliva when I spin on the drop spindle or have a little pot of water I dip my fingers into when spinning on the spinning wheel, both of which strengthen the fibres when spinning them fine and helps in sticking down stray ends and rogue strands, creating a smoother, harder yarn. I also add quite a lot of twist, but you will soon develop a technique that gives you the nettle yarn you want.

WASHING YOUR YARN

When you've spun up all your tow, or reached the end of a bobbin or spindle, you'll need to wind it into a 'skein' or ball. I usually wash the yarn at this stage and do so by boiling it in water. I've usually wound the yarn up into a 'skein', secured it well with lots of ties and simply dropped it into a pot of boiling water. However, due to the amount I've twist I've put into the yarn, it's very lively and coils up into a tight ball as it enters the water. When finished with boiling, I've often had great difficulty in finding the ends of the 'skein' and generally pulling it all back out into shape again.

As a result I recommend Judy Kavanagh's tip of wrapping the yarn around some plastic pipe, before introducing it into the boiling water, as this makes subsequent unravelling a lot easier.

As the nettle yarn is introduced into the boiling water, you will notice the water turn a slightly dirty, amber colour and it may take several changes of water before they start running clean. I find simply boiling the yarn in water works just fine, but I've also had good results with adding a little soap or washing soda.

I tend to 'set the twist' – to try and alleviate my over-spinning – by stretching the 'skein' over a jig I've made and letting it dry out under tension. I've also achieved similar results by hooking the skein around a hook and hanging weights off the bottom.

By washing and setting the 'skeins' under tension now, will help you when you come to weaving with them. By not doing so and weaving with unwashed yarn I've had evenly woven pieces, distort drastically when taken off the loom and then washed and boiled. Even though the piece was woven from one bobbin full of nettle yarn, my spinning technique had developed over the course of that bobbin and the twist was not constant throughout, so, when introduced into boiling water, the piece pulled in on itself to different degrees along the length of the fabric. Pre-boiling the 'skein' and 'setting the twist' would have mitigated this to a greater degree.

HOME AND DRY

Well, if you've got this far – congratulations – you should have some sort of 'skein' or ball of locally sourced, hand-woven, magically potent, nettle yarn in your hands!

There's something deeply rewarding about the process and if nothing else, it certainly recalibrates one's appreciation of what's involved in turning plant fibres into useable threads and yarns.

But really, you are just at the start of things. Once you've built up a stock of yarns, you can start dreaming up ideas for what you're going to make with it.

EXPERIMENT AND INNOVATE

The method I've described is the way I've learned to process nettles, but this an ongoing investigation and I'm always finding slightly different ways of how to go about things. The 'Nettles For Textiles' Facebook group has also been an amazing resource and I've enjoyed watching and learning from all the innovative ways people are customizing the process.

One good idea, that has been suggested, for removing 'bark' from the fibres, is to soak or moisten them once they've been stripped off the retted stems. If these fibre ribbons are then laid out on a flat surface like a wooden floor or kitchen table, you

are able to scrape the 'bark' off the fibres with a blunt knife. Or at least you can scrape a good percentage of the 'bark' off, which comes off as sort of 'gunk', which in many ways is preferable than the dust you get when scraping them dry. It's very easy to dislodge the stubborn nodes, working with the fibres in this way and that helps with longer fibre retrieval.

If you watch footage of the traditional techniques used to process 'ramie', they do a similar thing, although the 'bast' is scraped 'green' as opposed to after retting.

<https://www.facebook.com/mbntv/videos/1384329971577497/>

After 'wet' scraping, the fibres will soon dry out and you can then continue scraping them as you would normally, but there should be much less tow produced and a greater percentage of the longer 'line fibre' retrieved.

I think whether or not one adopts this step, depends on the volume of nettles you are processing. When dealing with a lot of fibres, I tend to just use the 'dry' scraping method demonstrated in the 'Nettles For Textiles' film. Even though this produces higher proportions of tow, in actual fact, the tow is what I'm primarily spinning with and the longer the fibres there are in the tow, the better is to spin and the better the resulting yarn.

But, it all depends on what you're aiming for and if the additional labour gives you more of what you want, then it's worth doing.

WORKING WITH 'GREEN' FIBRES'

It is well known amongst bow-makers, that nettle fibres extracted 'green', from freshly harvested plants, are stronger than nearly all other comparable fibres. Furthermore, you extract a much higher proportion of the longer line fibres compared to the 'tow', than if you'd retted the plants.

Having overlooked this method in my earlier experimentation, in recent weeks I've returned to it and it is clear that I'd missed what is probably the best and certainly the most simple method of them all. I'm becoming increasingly convinced that this is the method our ancestors would have first used – primarily because of its simplicity and directness – but also because you end up with long, extremely strong fine fibres that can be easily rolled or spun into a thread.

The process involves simply harvesting a handful of nettles at a time, stripping of the foliage and side-shoots and then immediately splitting open the stem and removing the fibres – as shown in the 'Nettles For Textiles' film. The great advantage of this method is that removing fibres off a 'green' plant is very easy and almost akin to peeling a banana.

As soon as the fibres have been stripped off the plant, they begin to dry out immediately, so one needs to work relatively quickly. (Coils of stripped fibres can be kept hydrated in bowls of water but if left there for longer than a day or two, I imagine that they start retting and the strength of the fibres compromised.)

I usually longitudinally divide, the fibres of perhaps 3 or 4 stripped nettles, into their natural bundles, discarding any short, fat section of fibre from the base of the plants. (These bits always prove problematic – containing fewer fibres but a much higher percentage of vegetable matter – and are not usually worth the effort processing.)

Then, using some sort of scraper – a blunt table knife (perhaps serrated), or even a piece of flaked flint – you grip the bundle of fibres in the middle and simply pull the edge of the blade down the fibre bundles, or alternatively the fibre bundles across the edge of the blade, or probably a combination of both. As you do this, everything that is not fibre will be gradually scraped away, in the form of a vegetable 'gunk' – this is your 'tow' and by carefully going back through it and reintroducing any longer fibres that may have been removed back into your bundle, you eventually end up with a small bundle of clean nettle fibres and a bunch of tangled 'tow'. (I would suggest keeping this tow as it can be converted into useable fibre with the use of wool carders.)

Compared to retted fibres, I think the proportion of line fibres to tow is much higher when working with them green. This is at because individual fibre cells are only about 3cm long in a nettle plant. The longer lengths of fibre you get when processing nettles are where the pectin and gums that glue the individual fibre cells together is

still present and viable. As discussed previously, retting or boiling nettle fibres in alkali solutions, dissolves the pectin and gums, allowing the fibres to separate into shorter and shorter component length pieces.

So it logically follows, that by not dissolving the pectin, but manually scraping away the excess matter, one is left with long, strong fibres.

The higher pectin content of nettle fibres processed green also means that when it comes to hand-twisting or spinning the fibres into yarn, this natural glue can be activated by 'wet fingers' or running the fibres through your mouth and wetting them with saliva, thus essentially gluing and twisting the fibres together to make an incredibly strong but very fine thread. I believe the enzymes present in saliva facilitate this natural bonding. If these 'singles' were then plied, the resulting yarn is almost unbreakable by hand.

The only real downside to this method of processing nettles, is that you have to work on them immediately after stripping off the fibres and it is slow work. As a result you are restricted to only processing nettle plants when they are in season, so processing work stops in the late autumn and starts up again in early summer.

The advantage of the dew-retting method is that the stems can be dried and stored and then processed at any time thereafter, so one is not so tied to processing as you go. However, in all other respects, I think working from 'green' is the superior method. Certainly for creating strong warps, I would recommend using threads processed this way. They will certainly take a much greater degree of tension and wear, with perhaps the softer, fluffier, dew-retted fibres being more loosely spun for the weft.

‘WATER-RETTING’

This is probably the most tricky method because it requires a significant amount of water to carry it out in. If you don't have a pond, which is the ideal, then you have to use containers, which can create a concentration of bacteria and rotting, rather than retting, will take place. If you are using a pond, you have to consider the impact of adding excess nutrients to the pond and so destroying the quality of the water. This is a problem that has been identified in the past by flax processors. (It has been suggested that floating barley straw in retting ponds helps clean the water.)

‘Water-retting’, as briefly outlined previously, usually involves submerging freshly harvested nettle stems in ponds, tanks, barrels or troughs. Slow moving streams can also be used, but in reality few of us have convenient access to those. The leaves and side shoots are usually removed before the stalks are submerged – either vertically, in a barrel or horizontally in a trough or tank.

In his ‘Youtube’ video, Michael Taylor, demonstrates the basic method.

<https://www.youtube.com/watch?v=361YVBkFylo>

I have only tried ‘water-retting’ a couple of times and I didn't get very satisfactory results on either occasion, so I'm unable to shed much light on the nuances of how it's done. Received wisdom informs us that the water the stems are submerged in must be changed after the first 24 hours. This is primarily down to the initial build up/ concentration of bacteria although the high sugar content of the nettle plant may have a part to play. Either way the plants will begin to ferment and the fibres will be compromised if the water isn't changed.

If you are using a barrel or water butt, you need to think through how you're going to tip all that water out – twice - and deal with a bunch of slimy stems. A tap at the bottom of the butt could be a solution, but you need to ensure it doesn't get clogged.

For that reason, I imagine a trough or tank would be a preferable option. Either way, once the water has been changed, the retting should only be a matter of days, again dependent on the weather and the temperature of the water.

I'm not sure what one specifically looks for when inspecting the retting stems, to assess their readiness, so hopefully the ‘Nettle For Textiles’ community will provide answers. However, regular inspections of the stems should give you some gauge. The fibres should come away from the core with relative ease. As with ‘dew-retting’, don't expect to find strands of lovely clean fibres, floating freely in your trough. You're primarily aiming to dissolve some of the pectin and gums that bind the fibres to the core and loosen unwanted vegetable matter from them. So don't mistakenly over-ret your stems because you don't see beautiful fibres – they'll come later down the line.

If you've over-retted the stems, the gums and pectin that bind the individual fibre cells together will have dissolved and the fibres will come apart into their basic staple length, which may only be 2 – 3cms. I think when testing your stalks, if the fibre bundles come off the core in long ribbons, some the length of the stem itself, then you're still within bounds. Once those ribbons start sliding apart in a glutinous manner, into shorter lengths, you've probably crossed the line. Unless you actually want to produce 'cottonised' fibres.

Once deemed suitably retted, I believe you can go one of two ways. You can either remove the fibres whilst the plants are still wet - they should almost slide off the core and everything will feel a little slimy and sticky – or you can dry the stems out and strip the fibres off later, as demonstrated in Michael Taylor's video.

In the video, Michael immediately cards the fibres on stripping the stems. I would suggest that a gentle scraping or combing would soften the fibres and remove any remaining bark. I think that if retted properly, fairly long line fibre could be extracted, with perhaps only the shorter tow being carded.

In principle the fibre shouldn't be that different to what you end up with 'dew-retting'. The colour and quality of the fibre may differ slightly but the fibre length should be similar.

Zarla Harriman, from the 'Nettles For Textiles' group, suggests an alternative approach to 'water-retting'. Rather than putting whole stems into water, she strips the fibres off 'green' and only then puts them in to ret.

To quote Zarla: "I lay them out in a bundle...tie it in a couple of places along it's length...with a wooden stick in the middle to make the bundle easier to handle when wet...then put them into water for a week or two".

'ROOT-RETTING'

Nettle pioneer, Birte Ford, describes yet another retting process, in her book 'Yarn From Wild Nettle', which she has named 'root-retting'. She gives a brief synopsis of the method on her website

http://www.nettlecraft.com/Root_Retting_Recipie.php

'Root-retting' simply involves leaving nettles to over-winter, in situ, and allowing natural processes and the weather to do most of the work for you. The standing stems are gathered in February or May and then stored in a warm, ventilated space to dry out. Birte recommends leaving them for a year or two, but presumably this can be accelerated.

When deemed sufficiently dry, the stalks are brought inside and Birte bakes them in an oven, so that when she manually breaks them over a slatted board, the pith falls away, leaving one with largely detritus free fibres. The resulting fibres appear quite short and are simply carded and spun off a 'rolag'.

This method is very dependent on suitable climatic conditions. Birte lives in the lowlands of Scotland and her particular climate is conducive to 'root-retting', yet a few hundred miles further south and come spring, there are simply no nettles left standing – at least none with any fibres still present - the damp, wet conditions have simply rotted everything away. However in some Northern European and American climates, this appears to be the traditional way of gathering nettle fibres.

Another, related method was shared on the 'Nettles For Textiles' Facebook page. By Lynne Isaacson. Apparently, the traditional method in Washington, on the NW Coast of the USA, was to harvest the nettles after the first frost.

To quote Lynne: "We usually get our first frosts in October and it can be sudden. We also have a lot of micro-climates zones in the greater Seattle area and they can range from not very much rain to lots, all due to the shadow effect of our Olympic Mountain range. When I was still able to gather it was usually in the drier areas. If I remember correctly the nettle stalks still had healthy leaves and green stalks just before the frost. My instructor emphasized that we needed to wait for the frost, even if it comes in later weeks or months... This is what I believe is happening: 'When ice forms between plant cell walls, it causes the cells to shrink. During a quick thaw, the shrunken cell swells so quickly, the walls may break.'

We soaked the nettles overnight, then let them dry. We then cracked the core by rolling a branch or rolling pin over it. Separated the core from the fibres, then spun. Very easy."

THE 'BOILING IN WOOD-ASH' METHOD

The other method of dealing with freshly stripped 'green' nettle fibres is to remove the unwanted vegetable matter through boiling the fibres in an alkali solution, most commonly wood ash dissolved in water, although caustic soda, soda ash, lye and even pool cleaning tablets have been used.

This is the method that the Nepalese nettle workers use on their particular nettle, known as 'Allo' or 'Himalayan Nettle' (*Girardinia diversifolia*).

The process, to the best of my knowledge, most commonly involves dissolving wood ash in a pot of water and then bringing it to the boil. The 'green' stripped nettle fibres are ordered into small bundles and tied together at several points along their length to prevent tangling and felting. The bundles are then placed into the bubbling alkali solution and boiled for some time.

The Nepalese then remove the fibres, which are now largely devoid of unwanted vegetable matter and the fibres are packed in a mineral clay and left to cool. This step appears to stop the fibres sticking to each other and aids with subsequent processing, which is simply to comb them.

Whilst some of our group have worked with the Nepalese directly and seen this process first hand, I have not, so my knowledge is severely limited. Although I have tried processing nettles this way on several occasions, for me, the results have never been successful so I've not much time on it, concluding that perhaps this method is better suited for their particular type of nettle.

The issues that I and several others, who have also been experimenting with this method, typically encounter is that the fibres either come out looking lovely, clean and soft, but with a greatly compromised staple length (i.e. length of fibre) or they come out partly cleaned but with enough vegetable matter and pectin and gums present to essentially glue the whole lot into a tangled, matted mass which proves impossible to clean and comb successfully. The presence of the wood-ash appears to dissolve away the glues and unless one gets the alkalinity and boiling time exactly right, one risks the fibres separating into their individual cells, thus essentially turning the fibres into a sort of cotton wool. (This actually seems to be the consistency that textile manufacturers utilising nettle fibres in their materials require.)

So, having written this method off, I was amazed to watch a Russian 'Youtube' video that one of the members of our group posted and it shows a gentleman processing, what look to be common Stinging Nettles, '*Urtica dioica*', using the 'boiling in wood-ash' method and the fibres that he ends up with are amazing – beautifully soft, clean and all of a decent staple length.

<https://www.youtube.com/watch?v=XfovzAu2dZ0>

So, given that the Nepalese have and indeed continued to process their nettles in this fashion and Gregory, the 'Russian Bushcraft Maestro' demonstrates it so beautifully in his video, tells us that this method can work. However, it would appear that it's a skill to be learned and will probably require much experimentation to master.

There are a number of questions that we currently don't have definitive answers to, like what the specific PH of the solution should be, how long to boil them for and whether one should include the 'wrapping the fibres in clay' step the Nepalese use and if not, what other natural ways are there of achieving the same results? How many nettles should one ideally put into the pot at any given time and how to best order them so they don't tangle and felt?

The primary drawbacks are that it requires firewood and a fire that may need to last several hours, water for boiling and cleaning the fibres and you need to collect the nettles, strip them and then boil and process them within a given time frame. (Obviously one could use gas or electric cookers, but this would soon prove to be expensive if one were processing a large quantity of nettles.

The advantages are that one could strip the fibres off in the field and not have to carry heavy bundles of nettles back home with you. Also, the results although problematic, do hint at the possibility of this being an effective method.

Time and further experimentation will be needed

Given the uncertainties involved with this process, I would probably steer clear of it, especially if you're a beginner. Hopefully the brave amongst us will forge ahead and set about mastering it and relay their wisdom back to us.

This document will be updated on an ongoing basis, as more experience and insights are gained. It is based largely on my personal observations and interpretations and it is in no way meant to be a comprehensive or definitive guide. There is still so much to be learned and worked out.