

Celtis africana

Sterkfontein Country Estates

August/Augustus 2015

Good day Celtis friends!

Believe it or not, but the Celtis is now three years old! I still enjoy doing it and I still enjoy getting feedback about it!

Remember in last month's Celtis we showed a cell phone photo of a piece of bread Southern Fiscals "saved" in its larder for the leaner times? Well, my dogs enjoy a bit of "mieliepap" with their breakfast and I always make extra to feed the birds, particularly during the winter. Just the other day the fiscal again grabbed a huge piece and pegged it in its "larder" on a thorn for leaner times! Have a look; it is actually quite sweet and very funny to us!



"Mieliepap" in the fiscal's larder (Cell Phone Photo by Garfield Krige)

Doing my early morning walk on our property, I have noticed that the *Helichrysum caespititium* (read more in Celtis of September 2014) has already started pushing its pretty little pink flowers out. And even though we had some of the coldest days of the winter last week, nature certainly seems to know that spring is around the corner. See photo in the Afrikaans section.

It being winter and nothing much going on in the veld, I thought I'd tell you about something that has always fascinated me and which, I am sure if you look around on your property, you will also find examples of on rocks or trees. It will always be on the southern side of the substrate.

This interesting “species” are lichens. Lichens are neither plants, nor animals; they are also not “moss” even though the word moss often occurs in their common names. Lichens are composite symbiotic organisms, arising from algae or cyanobacteria (or both) and other photosynthetic organisms, living among the filaments of a fungus in a mutually beneficial relationship (symbiotic relationship). The fungus benefits because algae or cyanobacteria (blue-green bacteria) produce food by photosynthesis. The algae or cyanobacteria benefit by being protected from environmental extremes (such as too much sun and water loss) by the filaments of the fungus. Fungus and lichens exist together and the fungus usually also provides an anchor to the lichens.

Lichens do not have roots that absorb water and nutrients as plants do. Neither are they parasites; where they do grow on plants, they use the plant only as a substrate on which to grow.

Lichens colonise some of the most inhospitable habitats on earth; they can survive in the extreme cold of the arctic on the highest mountains and also in extreme hot conditions like hot dry deserts and can grow on almost any surface! Lichens are of the oldest living things on earth. They come in many different colours and shapes and about 20 000 different species have been identified the world over. Although we use the word “species”, it is not the same as when we talk about a species of plant or animal or fungi for example. In the case of animals, plants or fungi, the word species implies a common ancestral lineage. As lichens are really combinations of species from two or three different biological kingdoms, there is *no* common lineage.

I can write books about this – there is lots of information available out there, but it would be a v-e-r-y long Celtis if I included everything in it! If this interest you as much it does me, go on, read up on it – you would be truly amazed!

Getting away from the more scientific stuff, I rather want to tell you about its interesting uses and qualities.

Before modern dyes were available, lichens were very important sources of colour for dyeing of clothes! Different ones were used for different colours and some were mixed to get all kinds of colours. In the Scottish Highlands, traditional colours for the Harris Tweed were derived from lichens!

In chemistry, the litmus dye is widely used as an acid/alkaline indicator – and this comes from lichens!

Lichens produce metabolites proven useful in the medical community. Some lichens have antibiotic properties and some lichen acids are used in drugs that are more effective than penicillin, in some instances. In ancient Egypt, lichens were used as “packaging” material for mummies – I guess much in the same way as we would use bubble wrap nowadays!



An example of a leafy foliose lichen on a tree (Cell Phone Photo: Elmarie Krige)



Examples of two varieties of crustose lichen (Orange and yellow-green discolorations on the rock)
(Photo: Elmarie Krige)

Lichenometry is a technique where lichens are used to determine the age of exposed rock surfaces. This technique is used in archaeology, palaeontology, and geomorphology. Lichens are also used to assess air pollution; many environmental studies with lichens emphasize their feasibility as effective bio-monitors of atmospheric quality.

Lichens have been used as a food source for centuries – some eaten only in times of famine, others are a staple food and some are even considered a delicacy! One particular kind of lichen is widely used in a variety of traditional Korean and Japanese food. It is tradition for people of the Northern parts of North America and Siberia to eat the partially digested reindeer lichen (*Cladina* spp.) after they remove it from the

rumen of caribou or reindeer that have been killed. Does that sound yummy or gross? It probably depends if you are a South African or from one of the countries mentioned – they might think eating boerewors is utterly gross (think of the casing of boerewors and what it is made of!).

Now don't go running out during your lunch hour to lick a lichen-covered rock – it may be poisonous; not all lichens can be eaten!

Late yesterday (Monday) afternoon, as I was feeding the dogs, Garfield realized he left a tap running to fill one of our fishponds on the other side of the house. As he was busy taking the hosepipe out and turning the tap off, he heard an unusual tap-tapping sound. Looking up, he noticed a “new” bird in the bushwillow (*Combretum*) tapping on one of the branches. He quickly ran to get his camera, and, luckily this little oke was so intent on getting his food, he did not think of doing a disappearing act! It turned out to be a Cardinal Woodpecker (*Dendropicos fuscescens*)!

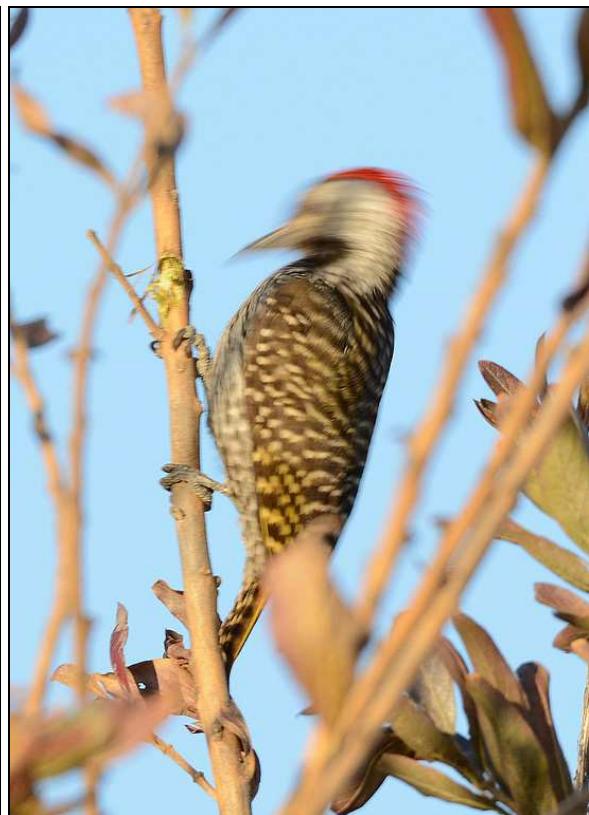
We are very happy to have them in the garden as there is a certain worm that gets into the *Combretum* trees, eating away at the inside, causing branches to die off and, as we hate using poison in the garden, we did not really know how to control this little garden pest. Well, no more worries, as the Cardinal Woodpecker will do the job just fine! What is interesting is that this bird will tap on a branch to find food. When it does; it will “open” up the bark and stick its barbed tongue inside to literally hook out its prey. Another method of “fishing” for food? Garfield was extremely lucky to actually get this all on camera!

I read something VERY interesting about woodpeckers, which I have to tell you about! Woodpeckers beat on trees with their powerful beaks to collect food or communicate with one another or to construct their nests, and I have often wondered if they don't get a headache from all of this! But, they have evolved some anatomical features to prevent brain damage (and headaches I guess!) in a very special way. A small brain size is one of them. The orientation, or placement of the brain within its scull, maximizing the contact area, is another. Additionally, in that millisecond before the beak makes contact with wood, a thickened, nictitating membrane (also referred to as the “third eyelid”) closes, protecting the eyes from flying woodchips. Even their nostrils are protected; they are often slit-like and have special bristles that cover them! Now is that not amazing?

I hope you enjoyed this edition and, until next month, stay warm and remember - spring is around the corner!



"I know you're in there..."



A-a-and... ACTION! - Trrrrrrrrrr...



"You've got no idea what my tongue can do!"

(Photos: Garfield Krige)



"Gotcha!"



Lyk hierdie pad bekend? Lugfoto van Malmaniweg en ons Estate, geneem op pad Kaapstad toe
(Selfoonfoto: Garfield Krige)

Goeie dag Celtis vriende!

Glo dit of nie, die Celtis is hierdie maand al drie jaar oud en ek geniet steeds om dit te doen en ook natuurlik om terugvoer van julle te kry!

In verlede maand se Celtis het ons 'n selfoonfoto gewys van 'n laksman wat 'n stukkie brood aan 'n doringtak in sy "spens" gebêre het vir die maer tye. Nou-ja my honde geniet altyd 'n bietjie mieliepap soggens saam met hul kos en ek maak altyd bietjie ekstra, veral gedurende die winter, om vir die kiewiete en ander tuinvoëls uit te gooi. Die laksman het sowaar 'n lekker groot stuk kom gryp en ook aan 'n ander doringtak gebêre – ons dink dis te oulik en eintlik baie snaaks! Kyk tog in die Engelse gedeelte na die foto!

Ek sien nou die dag toe ek my vroegoggend stappie doen daar is sowaar al van die *Helichrysum caespititium* (lees meer in Celtis September 2014) wat hul piepklein, fyn pienk en wit blommetjies uitgestoot het. Al het ons van ons koudste dae die afgelope winter verlede week gehad, wys dit darem dat die natuur weet lente is om die draai!



Helichrysum caespititium (Selfoonfoto: Elmarie Krige)

In die Winter is daar maar min aan die gebeur in die veld, so ek het gedink ek wil julle vertel van iets wat my al van kleintyd fassineer. Kyk gerus op boomstamme of klippe in jul omgewing en altyd aan die suidekant, julle sal wel van dit kry! Hierdie interessantheid is ligene, of ook genoem korsmos.

Korsmos is nie plante en ook nie van dierlike oorsprong nie, nog minder is dit 'n mos - alhoewel die woord mos in baie van hul name voorkom. Ligene spruit voort uit samestellings van alge, cyanobakterieë (of beide) en ander fotosinterende organismes. Dit leef gewoonlik in 'n wedersyds voordeelige (simbiotiese) verhouding in filamente van fungus. Die alge of cyanobakterieë (blougroen bakterieë) vervaardig voedsel deur fotosintese wat voordeilig is vir die fungus en die alge of cyanobakterieë word beskerm deur die fungus teen omgewings-uiterstes soos te veel son of uitdroging. Fungus en ligene bestaan dus saam en die fungus dien gewoonlik ook as 'n tipe anker vir die korsmos. Ligene het, anders as plante, nie wortels om kos en water te absorbeer nie. Dit is ook nie 'n parasiet nie, en waar dit wel op plante groei, is dit slegs om die plant as basis te gebruik.

Ligene kom in die uiterstes van temperature voor – op die hoogste berge, in koue ysvlaktes en ook in droë warm woestyngebiede en groei amper op enige area. Dis ook van die oudste lewende dinge op aarde en kom in allerhande vorms en kleure voor. Meer as 20 000 "spesies" is al geïdentifiseer, maar in hierdie geval het die woord "spesie" nie die betekenis soos ons dit ken nie. Die woord "spesie" verwys gewoonlik na 'n gemeenskaplike erflyn of afkoms. Omdat ligene in werklikheid 'n

kombinasie van verskillende spesies van verskeie biologiese koninkryke is, **is** daar geen gemeenskaplike afkoms nie.

Maar laat ek wegbeweeg van die wetenskaplike goeters; as ek regtig in besonderhede oor ligene wil skryf gaan dit 'n baie l-a-a-ng Celtis wees. Daar is tonne inligting beskikbaar hieroor, en as julle, soos ek, regtig hierin geïnteresseerd is, gaan lees gerus 'n bietjie meer na, julle sal verstom wees oor al die interessanthede van hierdie merkwaardige "organisme". Ek wil julle liefs vertel van die meer interessante gebruik van ligene!

Voor moderne kleurstowwe beskikbaar was, was ligene 'n baie belangrike bron van kleurstowwe vir materiaal! Verskillende ligene is gebruik om verskillende kleure te verkry en soms was verskeie soorte gemeng om allerhande kleure te verkry. In die Skotse Hooglande byvoorbeeld, is die tradisionele kleure vir Harris Tweed verkry uit ligene.



Voorbeeld van die grys blaaragtige (foliose) en geelgroen korsagtige (crustose) korsmosse (ligene)
(Selfoonfoto: Elmarie Krige)

In chemie is die lakmoeis kleursel wat gebruik word as 'n suur/alkaliese indikator, afkomstig uit ligene!

Ligene vervaardig metaboliete wat baie bruikbaar is in mediese kringe. Sommige ligene het antibiotiese eienskappe en ander bevat sure wat in medikasie gebruik word wat baie meer effektiel is as penisillien. In antieke Egipte is ligene gebruik as

verpakningsmateriaal vir mummies – waarskynlik soos wat ons hedendaagse borrelplastiek (die Engelse woord, “bubble-wrap” is seker meer bekend) gebruik!

Daar is ‘n tegniek om ontblote rotse se ouderdom te bepaal (in Engels bekend as Lichenometry) en ligene word ook hierin gebruik. Hierdie tegniek word in argeologie, paleontologie en ook geomorfologie gebruik. Ligene word selfs gebruik om lugbesoedeling te bepaal; in baie omgewingstudies waar ligene gebruik is, is ligene se bruikbaarheid as effektiewe bio-monitors van lugkwaliteit benadruk.

Dan is ligene ook deur die eeu as ‘n tipe voedselbron gebruik – sommiges is slegs in voedselskaarste geëet, terwyl ander bekend is as ‘n stapelvoedsel en ander weer as ‘n lekkerny. Een spesifieke ligeen word baie in tradisionele Koreaanse en Japanese kookkuns gebruik.

Mense in die Noordelike gedeeltes van Noord Amerika sowel as in Siberië eet graag die half-verteerde ligene (*Cladina* spp.) wat in die grootpens kariboe en rendiere wat gejag is, voorkom. Klink dit smaaklik of grillerig? Dit hang seker af of jy ‘n Suid Afrikaner is of iemand van genoemde lande – dalk dink hulle ons boerewors is walglik (dink maar waarin ons geliefde wors gestop word)!

Moet nou net nie gedurende jou etensuur uithol en die naaste ligeen-bedekte rots gaan staan en lek nie – dit mag giftig wees; alle ligene is nie eetbaar nie!

Laat gistermiddag (Maandag) toe ek my honde kosgee, onthou Garfield skielik hy het een kraan oop vergeet toe hy ‘n visdammetjie volgemaak het. Terwyl hy die tuinslang uit die water haal en die kraan toedraai, is hy heeltyd bewus van ‘n eienaardige klopgeluid in die boom bokant hom. Toe hy opkyk sien hy skielik ‘n voël wat ons nog nie voorheen hier gesien het, besig om met sy snawel te klop aan een van die vaderlandswilg (Combretum) se takke. Hy is blitsig die huis in om sy kamera te gaan haal en gelukkig was die outjie so besig om ‘n happie te kry, dat hy hom nie veel aan Garfield se doen en late gesteur het nie.

Dis toe al die tyd ‘n kardinaalspeg (*Dendropicos fuscescens*) en ons was te bly om hom hier te kry! Die combretums word gereeld deur een of ander worm of gogga aangeval wat binne in die boom leef en van binne af soveel skade aanrig dat die takke vrek. Ons is nooit gretig om enige gifstowwe in die tuin te gebruik nie, so ons is alte bly om die voëltjie te verwelkom. Nou wat interessant is aan die kêrel, is dat sy tong hakies aanhet. Hy sal klop-klop aan ‘n takkie tot hy hom van prooi daarbinne vergewis en dan met sy bek die bas “oopmaak” en sy lang tong insteek en letterlik die eetding “uithaak” met sy tong. Amper soos om ‘n vishoek vir visvang te gebruik! Kyk bietjie na die oulike foto’s wat Garfield kon neem in die Engelse gedeelte.

Toe lees ek iets BAIE interessants omtrent houtkappers en ek moet julle daarvan vertel! Houtkappers gebruik mos hul sterk snawels om voedsel te verkry of om nes uit te kap of selfs om met mekaar te kommunikeer; ek het al baie gewonder of die gekappery hul nie kopseer gee nie! Maar hul het anatomies op so ‘n manier ontwikkel dat breinskade (en ek veronderstel hoofpyn!) op ‘n gespesialiseerde

manier voorkom word. Eerstens het hulle 'n baie klein brein. Dan is daar die oriëntasie of plasing van die brein self binne in die kopbeen; dit is so geleë dat dit die kontak-area tussen die brein en die kopbeen baie groot is. Verder, in die millisekonde voordat die bek met hout kontak maak is daar 'n spesiaal verdikte membraan (ook genoem die "erde ooglid") wat toemaak en die oog self teen stukkies vlieënde bas beskerm! Selfs hul neusgate is beskerm teen so-iets – dis gewoonlik skreef-vormig en het spesiale haartjies wat dit beskerm! Is dit nou nie verstommend nie!



Wintersoggend (iPad foto: Lorinda Hattingh SCE169)

Ek hoop dit was vir julle 'n interessante Celtis en tot ons weer gesels, bly warm en onthou, lente is om die draai!

Totsiens, goodbye, adios, ciao, yia sas en do svidaniya!

