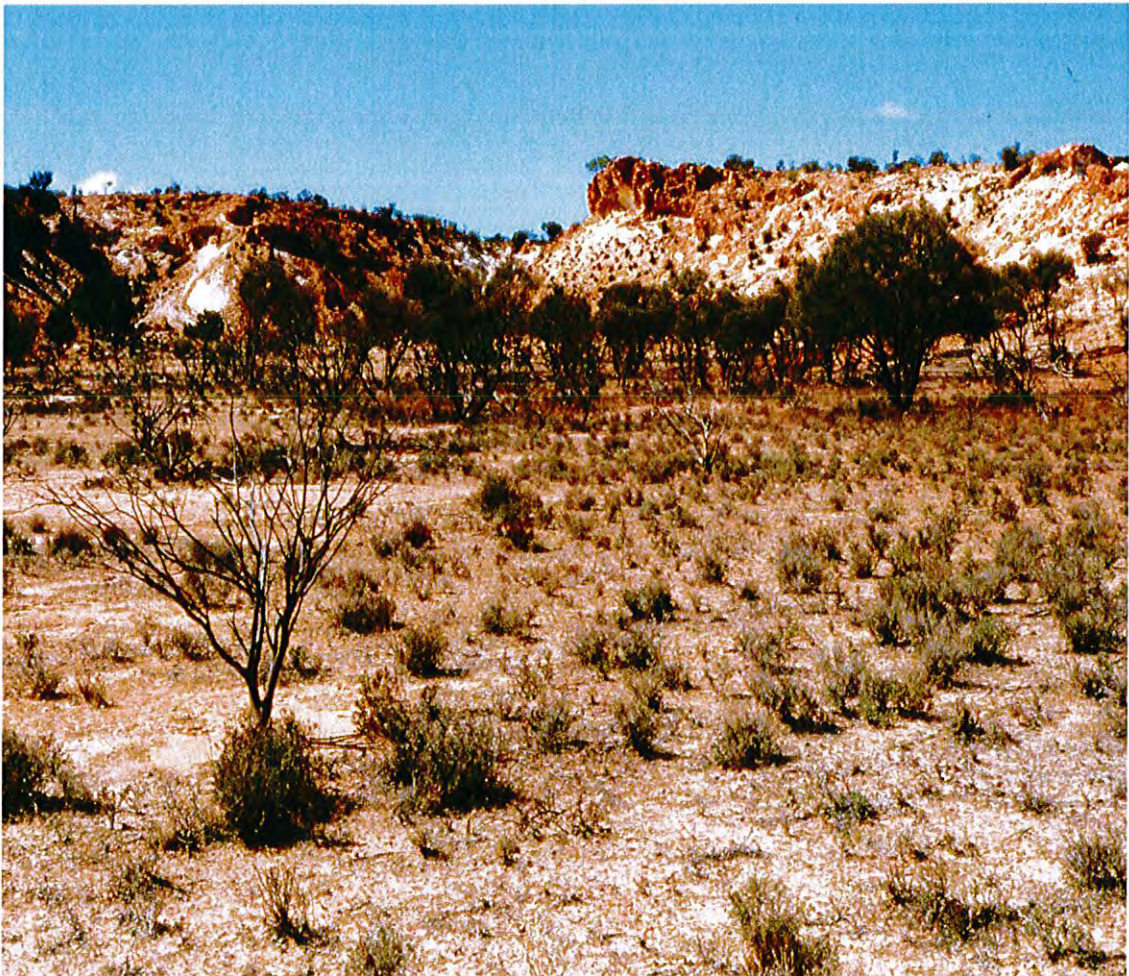


Cryptogam of the Month



2008-12



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Cryptogam of the month, 2008-12 / R. J
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Foreword

The compilation of these monthly cryptogam sheets is the culmination of five years of descriptions in an attempt to show case and stimulate public interest in the Western Australian cryptogam flora.

Each month a different species was prepared and posted onto the Department of Environment and Conservations web site thus allowing access to these descriptions and images to the general public.

Photographs depicting each species and occasionally inclusion of other supplementary images demonstrating pertinent features were included where needed along with a brief description of the species. A short note was included to indicate which substrate these species could be found upon. The occurrences of these described species for each state was provided as a guide to Australian distributions.

Coverage provided by these month by month descriptions is a mixture of lichens, moss and liverwort species along with a fungus and a hornwort encompassing a small portion of the flora group known as cryptogams.

R.J. Cranfield Botanist/Lichenologist
2007 Churchill Fellow
Science Division (WA Herbarium)
Manjimup

Cryptogam of the Month – January 2008



Kurzia hippurioides

Kurzia hippurioides is a multi branched liverwort with dingy green coloured leaves and stems that can be tinged dark brown. Forms an intricate interwoven mat of pinnate fronds composed of four lobed leaves that stand slightly away from the stems. Usually found on clay banks and occasionally on decaying wood in the understory of wet forests.

Similar to *Kurzia compactor* which is more khaki coloured and less tapered on stem tips. This similar species appear to have been thought to be in WA but has since been rejected and occurs only in eastern Australia

Cryptogam of the Month – February 2008



***Funaria hygrometrica* (Fire Moss)**

Funaria hygrometrica is a common yellowish green cosmopolitan moss species that grows on soil and is often found in unstable habitats. This species usually dominates after a fire, forming extensive dense mats on the ash beds. As the ash ages and becomes depleted of potash the dominance of this species declines and in long unburnt and undisturbed areas is reduced to small scattered clumps. This species can survive severe desiccation and produce abundant spores, especially after a fire. The spores develop in stalked often pendent red brown capsules with orange twisted teeth on the edging mouth opening.

Cryptogam of the Month - March 2008



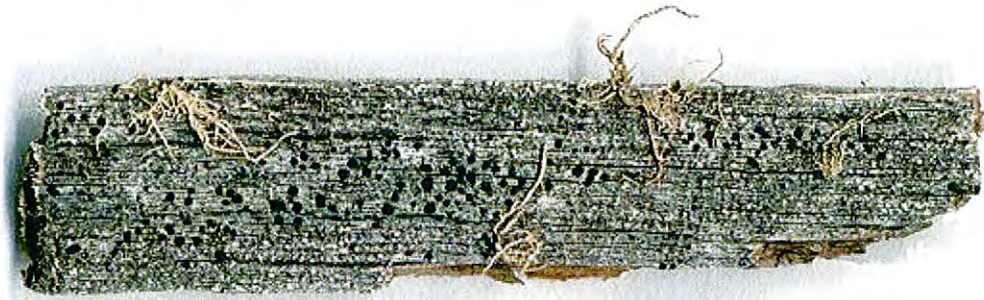
Xanthoparmelia semiviridis

Xanthoparmelia semiviridis is a remarkable free living soil lichen that is frequently found in the arid areas throughout Australia. Normally seen in the dry, rolled up state, it rapidly turns green and unrolls after a rainfall event. This species has been recorded as surviving extreme high temperatures in the desiccated state, a feature that helps it survive in desert areas.

Reproduction in this species appears to rely on vegetative spread, as no fruiting bodies have been seen to date. Vegetative spread occurs as the organism is blown around by the wind and fragments of the fragile, dry thallus are broken off, spreading across the soil. This degree of mobility is due to the absence of rhizines (a root like structure) to anchor the thallus to a substrate. . In the re-hydrated state the thallus is robust and flexible, temporarily restricting movement and spread.

Previously known as *Chondropsis semiviridis* a monotypic genus, but now considered to belong with *Xanthoparmelia*.

Cryptogam of the Month – April 2008



Ramboldia stuartii

Ramboldia stuartii is a small crustose lichen commonly found on decaying weathered wood and occasionally mature non flaking bark. This species prefers an elevated substrate but can occasionally be found on fallen material on the ground. Usually all that is seen are the masses of plane, disc-like, black fruiting bodies (apothecia). The pale thallus tends to be immersed in the substrate and is only obvious when wet. Spores of this species develop in a bag-shaped ascus located in the fruiting body and are elliptical in shape and may appear to be septate, which in fact is a transverse plasma ridge and not part of the cell wall.

A common species found in southern Australia and New Zealand growing in open dry sclerophyll forests and woodlands.

In Australia there are thirteen species of *Ramboldia* of which ten are endemic. Seven species occur in WA, with one known endemic.

Ramboldia named after the German lichenologist Gerhard Rambold

Cryptogam of the month - May 2008



Marchantia berteroana

A common species of liverwort found in damp situations on disturbed soils, wet urban gardens nursery propagation areas and flower pots. When growing in profusion in a flower pot the dense coverage of this species can lead to the pot drying out. In the garden situation this species tends to dry up and cause no problems.

A common southern hemisphere liverwort species usually growing on bare soil associated with stream banks.

This species is recognised by the abundant erect cup like structures with toothed edges (gemmae cups), on the upper surface of the thallus. The gemmae are round spore like structures within the cups, it is from these gemmae that new liverwort offspring develop. The male structure (sporophyte) is rare and erect, topped with a Jelly fish like umbrella structures.



Gemmae cup



Sporophyte

Cryptogam of the month-June 2008

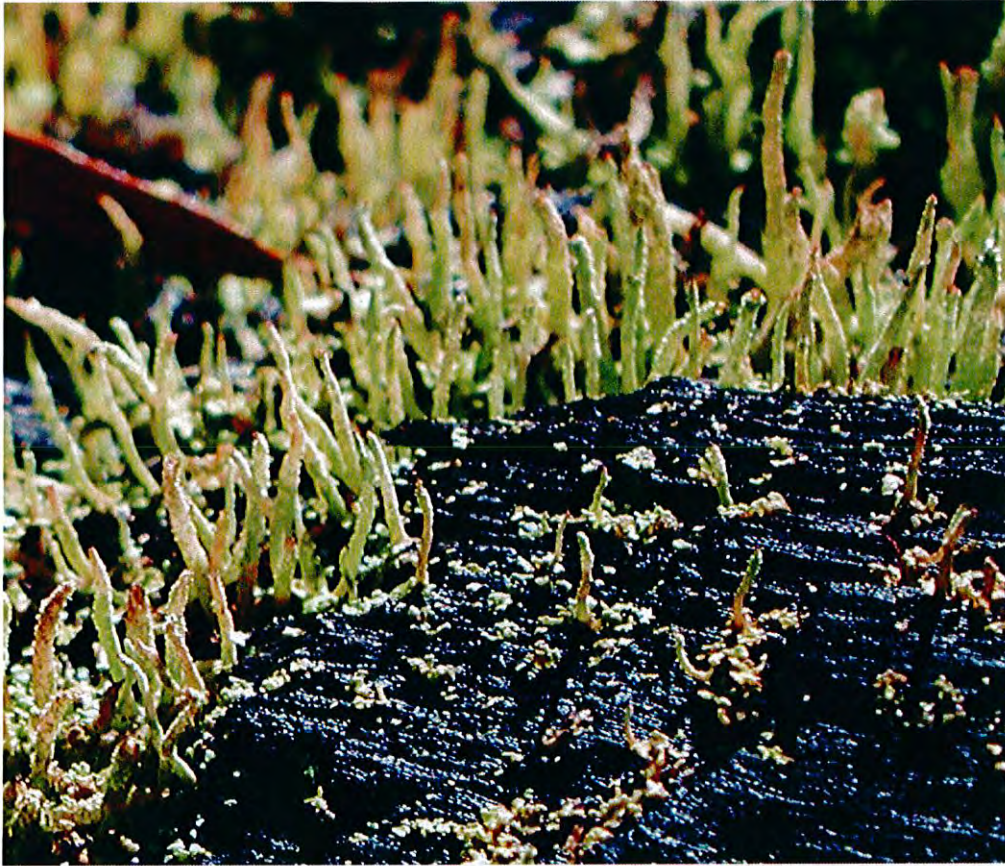


Grimmia laevigata (Pepper-and-Salt)

Grimmia laevigata is an unusual moss species found on rock outcrops, especially on exposed granite. This species is widespread in Australia extending into very arid areas where it forms large irregular, grey mats on the rock surface or sheltering in crevices. This group of moss is classified as cushion type life form. The development of a dense cushion ensures species survival in exposed habitats by acting as moisture and dust traps and provides protection for the individual strands

The common name is derived from the combination of ash grey leaves and long white hair points especially when dry.

Cryptogam of the month-July 2008



Cladonia rigida

Cladonia rigida is an Australian species of lichen, one of about 350 species which are widely distributed in both hemispheres. A common forest species in southern WA and is usually found on decaying wood or bark at base of trees. It is occasionally located on charred logs in wetter areas. The thallus is basal and is normally a small persistent tile like squamule. The massed erect podetia are powdery simple pole like structures rarely branching and have a tapering tip. The podetia's usually have terminal fruiting bodies (apothecia) which are not always obvious in this species.

The application of a spot of 10% Potassium hydroxide solution to the podetia results in an intense yellow reaction. This chemical reaction helps to sort out the identification of this species from other similar looking *Cladonia* species. This species is variable in appearance and has a named variety which is recognised in Australia that requires chromatography to segregate to this level.

Cryptogam of the month-August 2008



Pleurophascum occidentale

Pleurophascum occidentale is a moss species recently discovered, that is a natural curiosity in that it produces unusual yellow orange ball like fruit structures.

Pleurophascum is a genus of three species that occur in the southern hemisphere, WA, Tasmania and New Zealand.

The identification of the WA species *P. occidentalis* although partly resolved may in the future require the placement into another genera.

In Western Australia this moss has a restricted distribution and is considered an endangered species.

When found in the leafy stage the identification of this species is difficult along with a specific habitat requirement may account for its limited known locations. Usually located in sheltered moist positions on areas of decaying granite particles associated with organic litter.

Cryptogam of the Month-September 2008



Metzgeria furcata

Metzgeria furcata was formally known as *Metzgeria decipiens* and was considered as a rare liverwort species for Western Australia. The name change to a widely distributed Australian species was based on the identification characters of the two mentioned species being similar and is now considered not to warrant separation. *Metzgeria furcata* was the earlier described species, in 1835, and as such took precedence over *Metzgeria decipiens* (1890). This species can be found growing mainly on old mature bark of *Trymalium floribundum* (Soap Bush) shrubs and occasionally on other shrubs in wet forest areas. The sensitivity of this *Trymalium* species to fire and competition for establishment as a host plant has led this liverwort to be placed into a threatened ecological community classification and requires protection.

Cryptogam of the Month - October 2008



Xanthoria elixii

Xanthoria elixii a recently described foliose lichen, that occurs on the bark of shrubs and trees in semi saline areas of Australia. This species was described from material collected from the Mullewa shire in 2004 by a Ukraine lichenologist working in Kiev. A readily recognised wide spread species *Xanthoria parietina* that is found on bark of old fruit trees and other substrates in the wetter areas of Australia can be easily confused with *X. elixii*. In the mature state both species form rosettes but can appear cluttered forming an indistinct shape as they will grow into each other. *X. elixii* is a smaller species with rosettes growing up to 2.5 cm diameter whereas *X. parietina* is usually 6 cm in diameter. The colour of both species can vary from orange to yellowish green and this is dependant on the degree of shade provided by their host species.

Spot testing for a chemical reaction shows the same colour change and requires more advanced tests to use this process.

The species is named in honour of the well known Australian Lichenologist Jack Elix.

Cryptogam of the Month – November 2008



Photograph by R. Robinson

Phaeoceros carolinianus

Phaeoceros carolinianus is a commonly found species of liverwort that grows in the wetter forested portion of the southwest. Usually found on soils as a dense green thallus mats or seen occasionally on rotting logs. The development of the spore bearing structure (capsules) and the yellow powdery spores make this species easy to recognise in the field. The spores develop usually takes place in late spring to early summer as the moisture levels begin to fall. In the non fruiting stage it is easy to confuse this species with other thalline liverworts.

Cryptogam of the Month - December 2008



Peltigera dolichorrhiza

Peltigera dolichorrhiza is a lichen that is strange looking and has only been seen occasionally with fruiting bodies in WA. The lower surface of the thallus has a well defined network of veins with conspicuous rhizines (root like structures) which help to identify this genus when not in fruit. The upper surface is usually grey in colour and glossy. The fruiting bodies have incurved margins that help them to stand up and look like tiny fingers topped with a brown finger nail (apothecia). The thallus develops as a series of small rosettes on soil, bare or mossy and occasionally rock. Mainly occurring in eastern Australia but has been located recently in southern WA in open forest areas.

Cryptogam of the Month - January 2009



Usnea scabrada

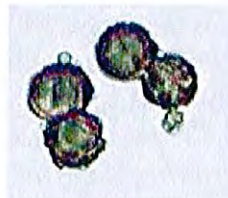
Usnea scabrada is a common epiphytic lichen species found in drier open forest areas of the south-western Australia. This grey green shrubby species (often 5 cm tall) is usually found growing on old fence posts, mature shrubs and trees but in many instances seen only on the ground after storms. Easily overlooked as it grows in the tree tops where it obtains nutrients and moisture from low moist clouds and mists. The rough texture of the dense short fibrils and large plate like apothecial discs are simple characters that help identify this species. When handling this species it feels sandpapery especially when dry. There are three subspecies occurring in Australia of which *Usnea scabrada* subsp. *scabrada* is the only one found in WA. This species can be confused with *Usnea subalpina* which has longer thinner apothecia with long fibrils (short simple thread like structures) and may occur together in the southern forest areas of WA. *Usnea* has a world wide distribution with about 500 species of which 37 occur in Australia.

Cryptogam of the Month-February 2009



Chaenotheca chrysocephala

Chaenotheca chrysocephala is a small lichen species from the commonly named whisker group. The thallus has an intense yellow colour when moist. The black stalked apothecia, is topped by a broad yellowish capitulum (head) in which the spores develop. The shining stalk which is often covered with a intense yellow granular powder. Spores are small spherical to elliptic with a coarse irregular, rough surface ornamentation.



Spores

This species grows mainly on decaying bark and occasionally well decayed wood in temperate cool shaded humid forests.

Easily recognised by the presence of its bright yellow powdery thallus, this species is not widespread in southern Western Australia. Found frequently in eastern Australia, New Zealand and several locations in the Northern Hemisphere.

Cryptogam of the Month – March 2009



Dry state

Moist state

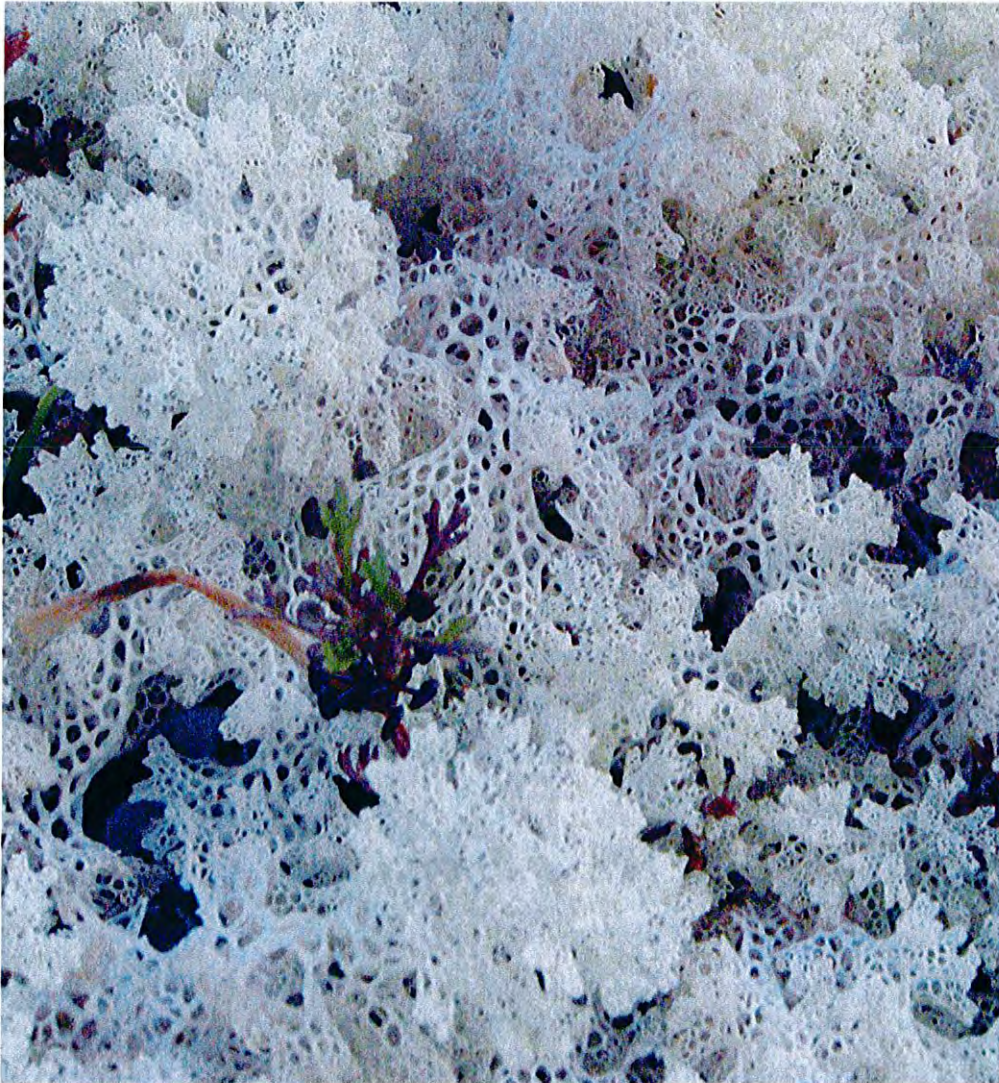
Riccia limbata

Riccia limbata is a common liverwort species usually found on soil in dry habitats. When dormant (dry state) the thallus folds up to display the blackish underside scales and these appear as black patches on the soil. In the moist state which can be rapid the top of the thallus flattens to show a green surface edged with black scales that protruding outlining the thallus shape.

The Sporophyte (fruiting body) looks like a bag of spores and is usually immersed in the thallus tissue

This species has been located in semi arid to forested areas on a wide range of clay soils, occasionally on semi saline lake edges.

Cryptogam of the Month – April 2009



© R. Robinson

Cladia ferdinandii

Cladia ferdinandii is a white to cream coloured, spectacular lichen found on several granite outcrops and is usually associated with moss and herb mats. Massed displays on several outcrops gives the appearance of snow drifts. The open net like appearance and texture when dry is reminiscent of a marine coral, In the dry state it is easily damaged and crumbles when stood upon but when moist is robust and can resist being broken up into fragments. Many of these fragments may develop in new individual clumps over an extended period free from stomping.

The type specimen (original sample) was collected between 1864 and 1890 in the Esperance area. In Australia this species occurs in South Australia (where it is considered rare) and the southern corner of Western Australia where it may be considered common.

Cryptogam of the Month – May 2009



Psora crystallifera

Psora crystallifera, soil lichen which was previously known as *Lecidea crystallifera*. The thick squamulose thallus is usually grey or brown coloured but occasionally greenish when moist. The upper surface appears cracked and covered with pyramid shaped polygon crystals. This crystalline appearance is unusual and spectacular looking like warts on the soils surface. These crystals may be the formed from gypsum mineral deposits in the thallus tissue.

The apothecia are common but can be overlooked as this species can grow in association with other soil lichens. The apothecia are flat or strongly convex and usually found on the margins of the squamules.

This species is common on arid and semi arid clay based soils in southern Australia especially in the goldfield areas of WA. At specific locations this species can form reasonable mats that help stabilise the soil surface and retard water runoff.

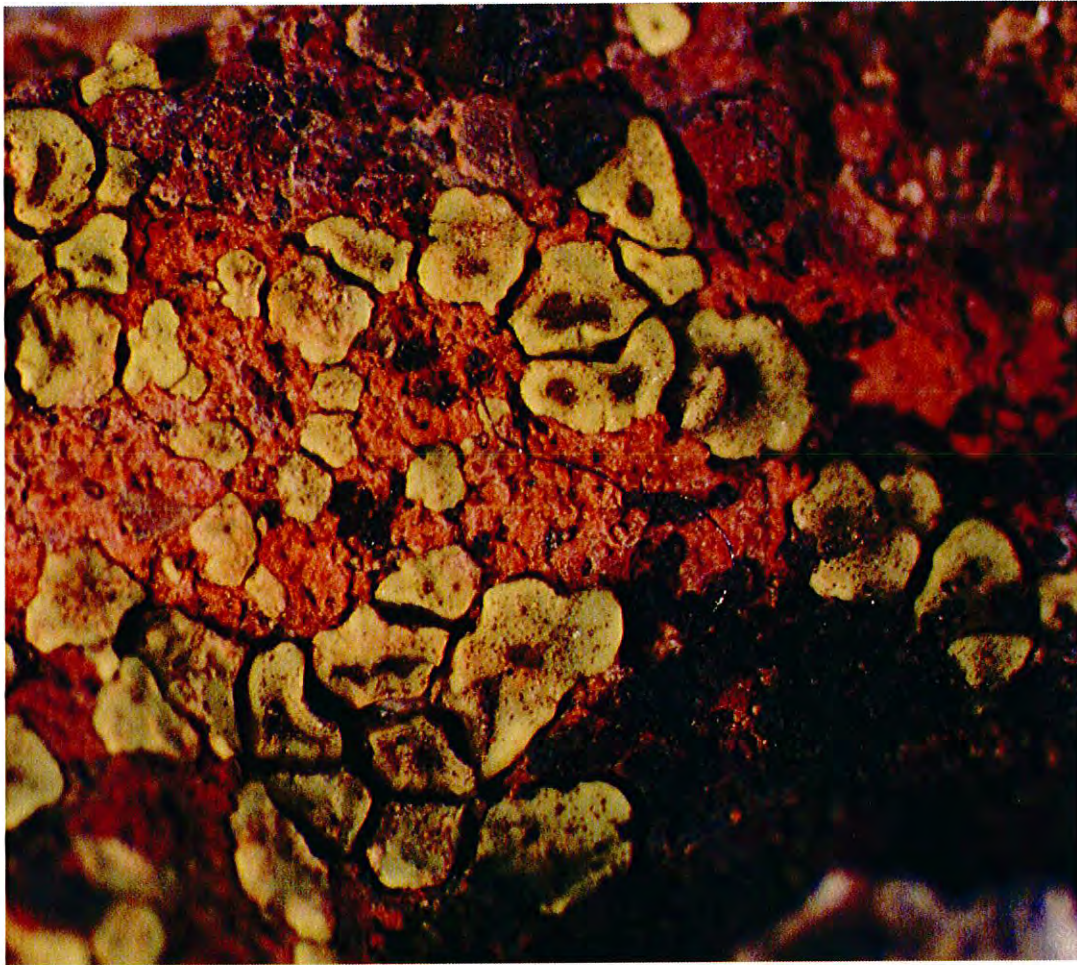
Cryptogam of the Month – June 2009



Targionia hypophylla

Targionia hypophylla is a thallose liverwort that has a waxy bloom and either green or bluish. The margins have ventral scales which are deep crimson red to brown, very obvious when dry as the thallus edge rolls inwards. Numerous air-pores can be seen on the thallus surface. Fruiting capsules develop in a spherical pouch on the apex of the stem. The spoon shaped thallus tip is obvious and helps to identify this species. This species can be confused with *Plagiochasma rupestre* but has minute inconspicuous air-pores and different reproductive structures. Grows on soils sheltered by rocks in dry forests and areas where shrubs fringe granite outcrops.

Cryptogam of the Month- July 2009



Acarospora citrina

Acarospora citrina a crustose lichen that can be located in almost every inland habitat. A common species occurring on a wide range of acidic rocks. In these extreme climatic areas this species can be seen clinging to underside of overhangs and rocky crevices. The lemon yellow thallus is composed of simple thick tile-like structure that may have a central reddish brown apothecia (fruiting body). This species can be found Australia wide in semi arid to sub tropical areas and some coastal areas but not associated with calcium based rocks. At present this species is well represented east and north of Perth with a record near Corrigin appears to be at its western extremity.

A related species that can cause confusion is *Acarospora novae-hollandiae* which is also lemon yellow and occurs on similar habitats and climatic areas. This confusing species can be separated from *Acarospora citrina* by the presence of a thinner thallus and closely clustered individuals appearing as a continuous tiled surface.

Cryptogam of the Month-August 2009



Haematomma eremaeum

Haematomma eremaeum is a crustose lichen that occurs mainly on the bark of *Acacia acuminata* (jam) and *Melaleuca hamulosa*. Occurring in open woodland areas where it is endemic to the dry inland and wheat belt regions of south-western WA.

The bright red to pink apothecia and the white rugulose or warty thallus, make this an easy species to recognise in the field. The long linear spores have 5-11 cellular divisions (septa).

Chemical spot testing shows that the thallus reacts with Potassium hydroxide (K⁺) and turns yellow. Application of Potassium hydroxide to the apothecial disc reacts positively to produce a dark red to blood red colour.

Haematomma is represented by 35 species with Australia and South America being the main regions. Australia has 11 species (WA has 4-5 species) occurring mainly on rock or bark

Haematomma is derived from Greek haema or haemat (blood) and omma (an eye) referring to the red apothecial discs.

Cryptogam of the Month-September 2009



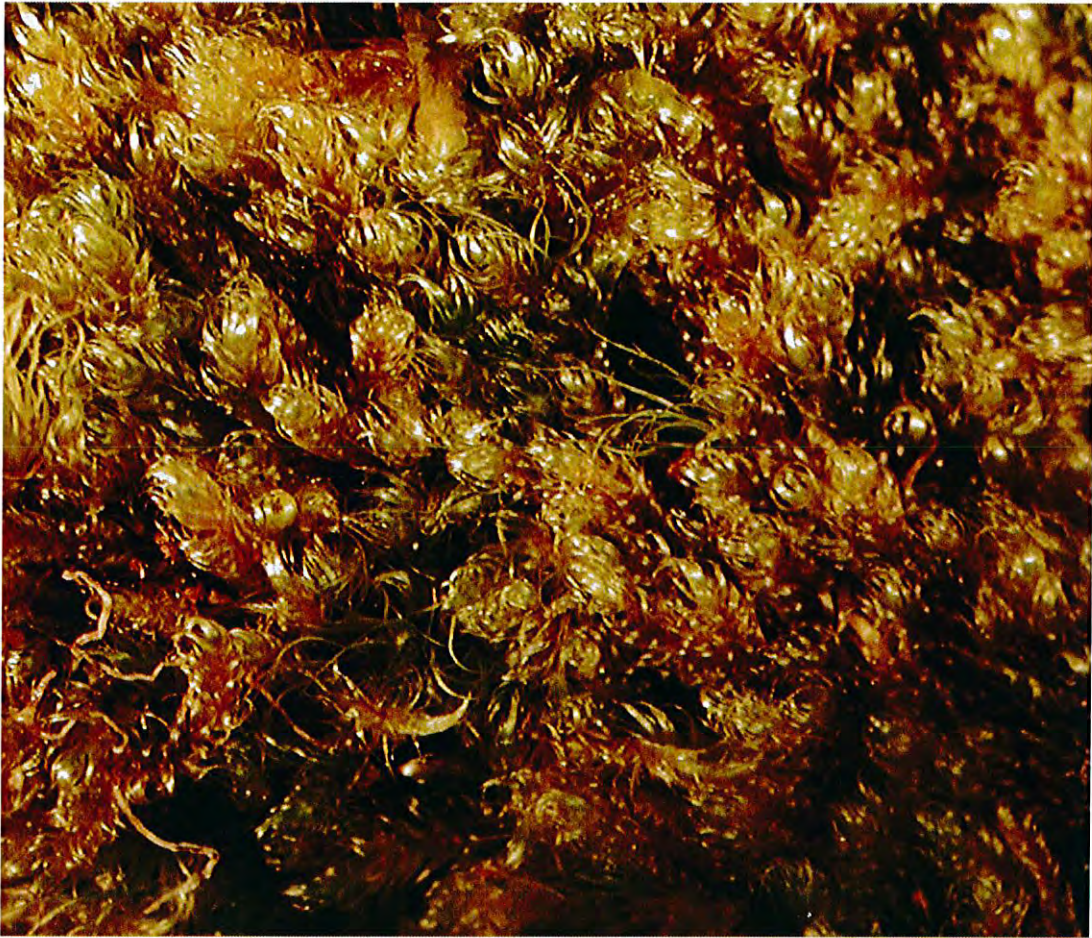
Cladonia sulcata

Cladonia sulcata is a small fruticose lichen that is found on the ground usually associated with old decayed organic material. This species is easily overlooked but common on the floor of Jarrah (*Eucalyptus marginata*) forests, as it usually only grows to 1-3 cm in height. The branching fruiting body tips with pale to dark brown apothecia make this species easy to spot. Splitting or grooving can occur on the fruiting body stalks.

The thallus is a small flake-like with a green upper surface and a white underside and forms small scattered mats sometimes hidden under litter.

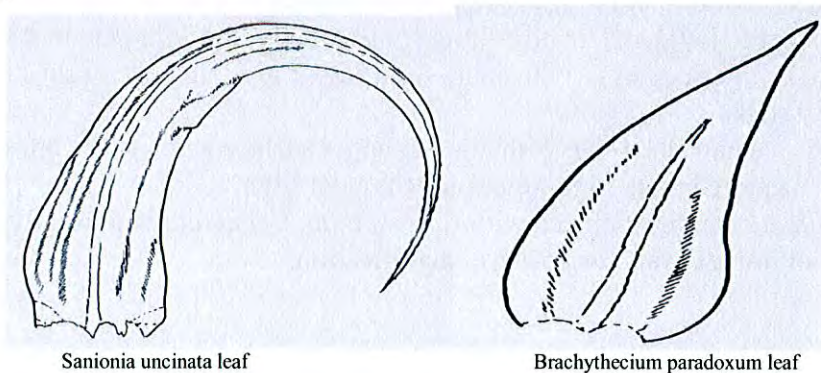
Cladonia sulcata can be confused with *C. tessellate*, *C. enentia* and usually requires a chemical spot test analysis for positive identification.

Cryptogam of the Month-October 2009



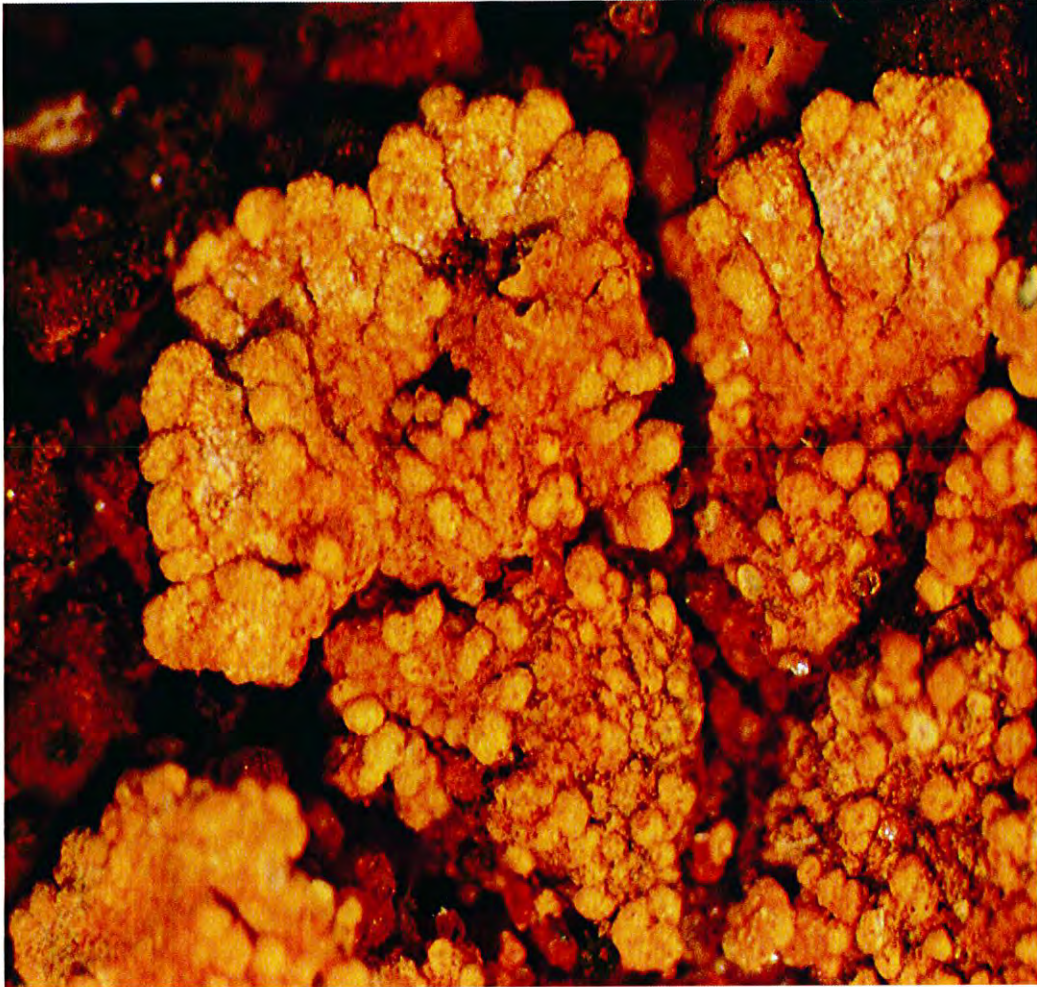
Sanionia uncinata

Sanionia uncinata is a rare moss species with green to bronze coloured shoots. Forms small mats in wet forest and can be easily confused with another moss *Brachythecium paradoxum* a species whose occurrences in WA is doubtful as it is normally located in alpine areas. The shape of the leaves separates these two species with the former having strongly folded (plicate) and curled leaves while the latter has leaves that are not folded.



Both species occur in Western Australia with occurrences in other Australian states.

Cryptogam of the Month-November 2009



Fulgensia isidiosa

This newly described small foliose soil lichen is from semi saline areas of Western Australia. The intense yellow colour of the thallus makes small rosette species stand out especially against the red soil. Closer examination shows finger-like protusions on the upper surface of the thallus (isidia) hence the species name. Another character is the crystalline or sugar-like granules (salt) on the tips of the thallus giving this species a soft appearance in a harsh environment.

Future collections of this species will reveal the true range of this newly described species.

Other species of *Fulgensia* have similar colouring and do occur in similar habitats but can be separated from this new species by the absence of the finger-like isidia on the upper surface of the thallus.

Cryptogam of the Month-December 2009



Cladia schizopora

Cladia schizopora is an unusual fruticose member of this genus in most cases it is only seen as a green to yellow green powder on bark of trees. The fruiting bodies develop into small erect pseudopodetia, topped with dark brown-black clustered berry like apothecia. The pseudopodetia are hollow and branched, usually only 2-3 mm high, although it has been recorded to be 15 mm tall outside of WA.

This species occurs in the wetter areas of WA and occasionally found near Perth where it is reduced in size and is located in bark fissures or sheltering in protected locations. Samples have occasionally been located on sheltered laterite rocks. The rock surface usually has a layer of organic material trapped in the rough surface but is not common for this species to occur in this situation.

This species is found in southern WA, eastern and south-eastern Australia, NZ and Chile.

Cryptogam of the Month – January 2010

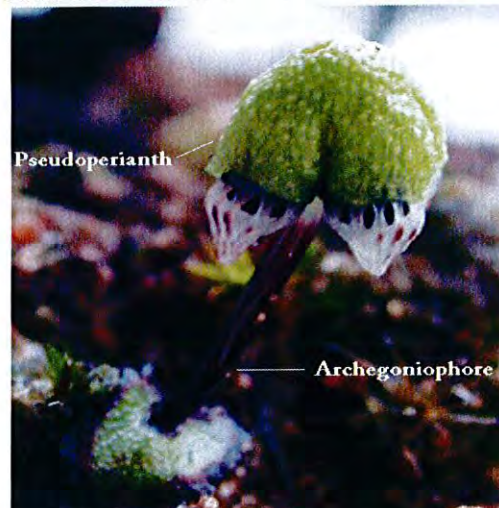


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Asterella drummondii

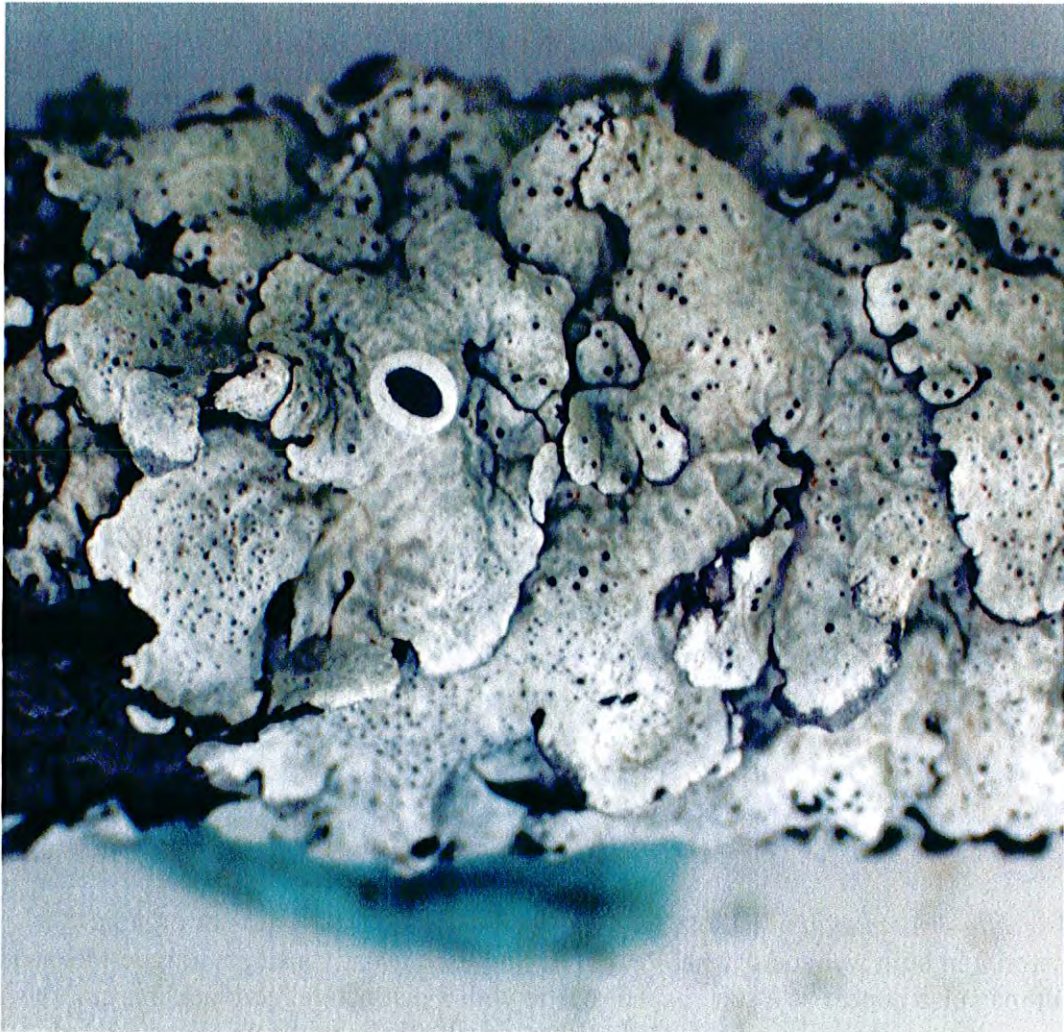
Asterella drummondii a thallose liverwort that occurs on soil crusts or organic material in both wet and dry habitats. The thallus is usually a single tongue-like shape but may also appear as a star shaped rosette with a distinctive red/black margin, this can make this species easily located. When dry the thallus rolls up exposing dark wavy margins. Fruiting bodies (pseudoperianths) are erect on dark stalks (archegoniophore) that form on the surface of the thallus. These fruiting bodies hang downwards and are adorned with a white frill on the lower edge that may be joined at the tip.

This liverwort can be found in all states of Australia in semi arid areas.



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Cryptogam of the Month – February 2010



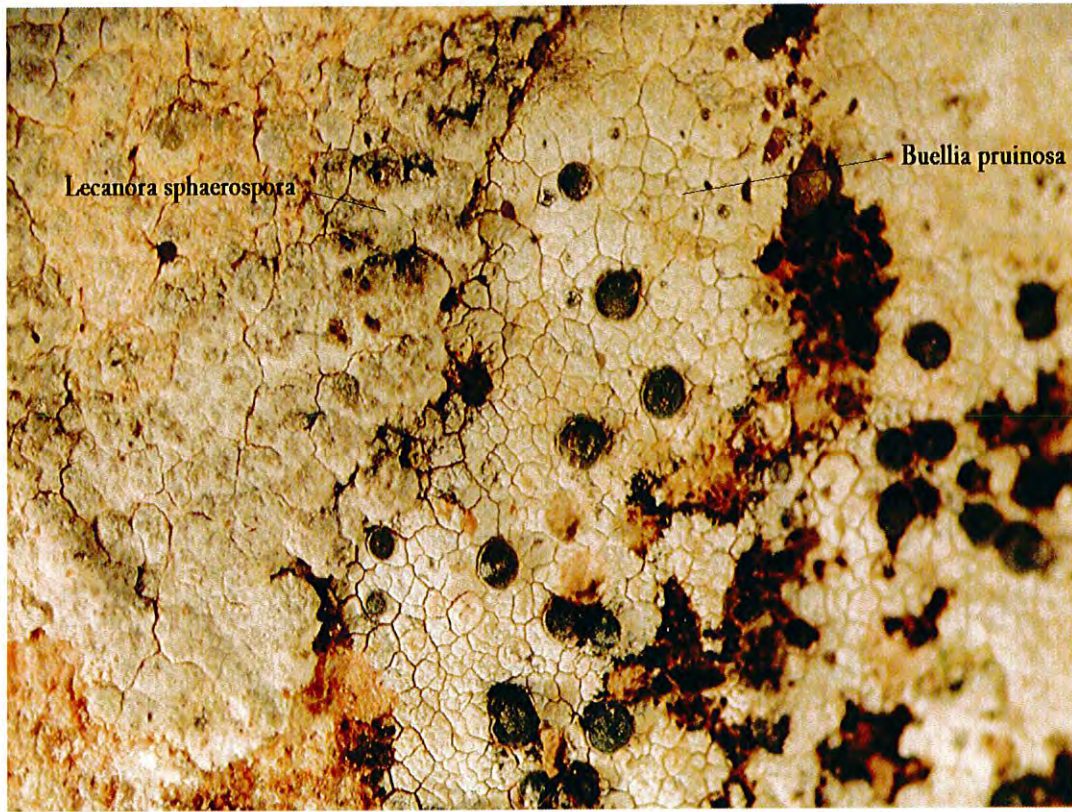
Austroparmelina subarida

Austroparmelina subarida a foliose lichen with crowded pale grey thallus and rounded lobes. Upper surface of thallus smooth to shiny, becoming rugulose with obscure surface pits. The lower thallus surface is ivory to tan with a darker marginal zone. Apothecia cup shaped to a flattened chest-nut brown disc with a smooth thalline rim. Chemical testing of cortex is positive (K+ yellow) and the medulla is C+ red and KC+red.

An Australian endemic that grows on twigs in drier area of Western Australia, South Australia and Victoria.

Previously known as *Canoparmelia subarida*.

Cryptogam of the Month-March 2010



Buellia pruinosa

Buellia pruinosa is common coastal crustose lichen occurring on limestone or other calcareous stone. The fruiting bodies are not always present but the white cracked thallus is obvious but would require chemical tests to positively determine. When present the apothecia or fruiting body appears as a black or grey disc that is frosted with a grey powder. It is this reference to the powdery pruina that the species is named after. On many coastal populations it can be found associated with *Lecanora sphaerospora* which has a thallus containing numerous crystalline structures embedded in the tissue. This mixed association can appear confusing as both species tend to grow together but the thallic characters will separate the species. *Buellia pruinosa* is found in all southern Australian states usually in exposed situations.

Cryptogam of the Month-April 2010



Endocarpon simplicatum var. *simplicatum*

Endocarpon simplicatum var. *simplicatum* is a squamulose lichen species that occurs on clay soils in semi arid areas. The squamules (thallus) are large, up to 10 mm in size, usually brown to almost brown black and can be seen scattered in an area or as a single thalli. The upper surface is usually flat but occasionally appears concave. The fruiting bodies show up as dark spots on the surface of the thallus and are in fact a sunken perithecia, which has an indistinct surface ostiole or pore. The spores are of the muriform type and appear to be only one spored in this species.

This species is reasonably common in the drier regions of southern Australia. In Western Australia this species can be found through out the wheat-belt and into the goldfields. Collections have been made near salt affected area but most are in patches where moisture pools.

It is closely related to *Endocarpon helmsianum* but differs in the large solitary ascospores.



muriform ascospore

Cryptogam of the Month- May 2010



©R.J. Cranfield

Xanthoparmelia fangii

Xanthoparmelia fangii has only been recently found and described. This foliose lichen has distinctive finger-like protrusions on the upper surface of the thallus. This species occurs on stone surfaces and has a grey green appearance. The edge of the thallus can appear dark but as it fully matures the long finger-like (isidia) tend to mask the thallus edge and cover the upper surface.

This poorly known species has only been located on two rocky hills in the wheat-belt region of Western Australia. Further sampling of this species is required to establish the full distribution and substrate preferences.

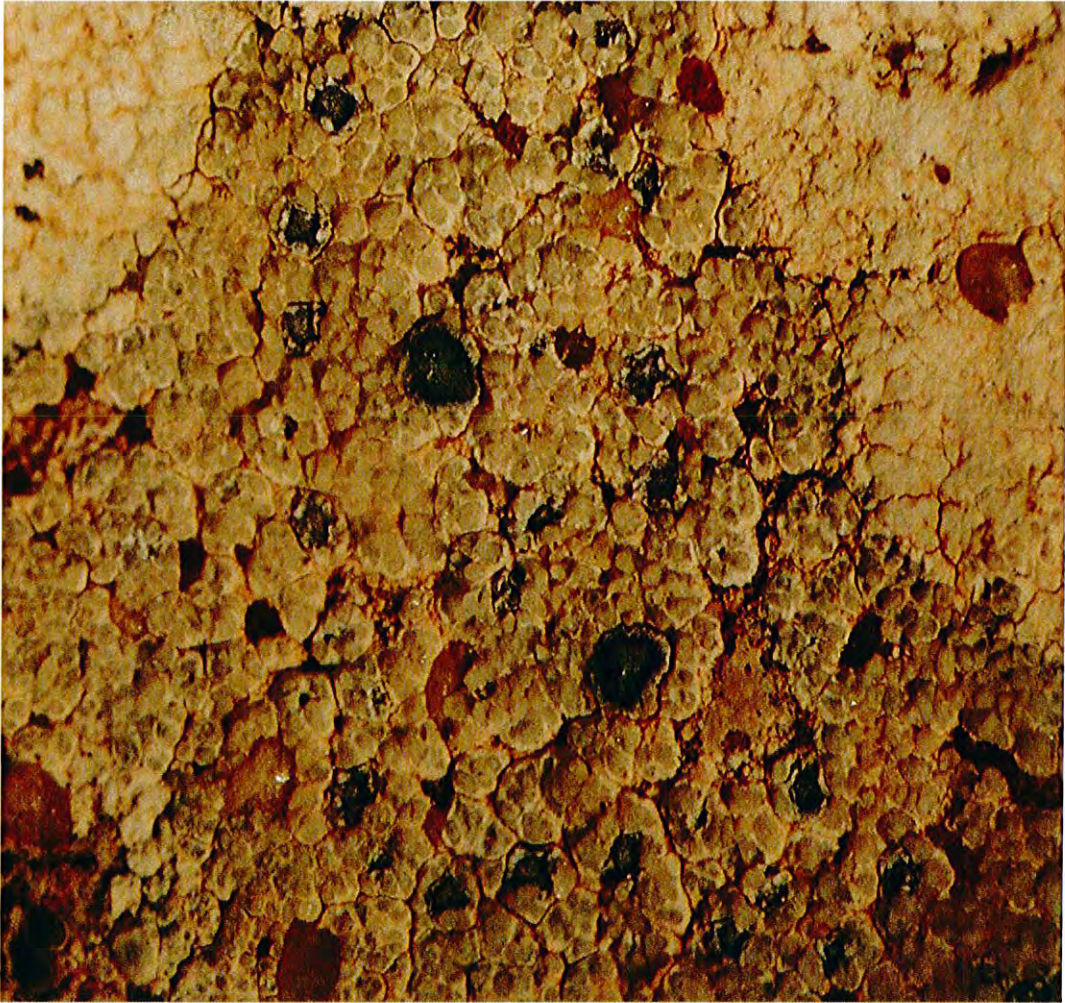
This species is named to honour Chang Sha Fang who was the collections manager at the Western Australian Herbarium Perth



Close up of thallus protrusions

©R.J. Cranfield

Cryptogam of the Month – June 2010



Lecanora sphaerospora

Lecanora sphaerospora is an interesting crustose lichen with a crystalline appearance that occurs on limestone rocks. Thallus is grey to greenish grey and heavily cracked into angle to give it the crystalline appearance. The crystals dissolve in potassium hydroxide solution. Apothecia bluish grey pruinose with large and small crystals. Chemistry test of thallus K+ yellow and apothecial margin K+yellow. This species can be confused with *Aspicilia contorta* that can be separated by the different chemistry reaction.

Cryptogam of the Month-July 2010



Graphis mucronata

Graphis mucronata a common twig and bark species of the southern forest wetlands. The scribble-like appearance of the closed lipped black lirellae slits (fruiting bodies), against a greyish white background (thallus) are easily spotted. This species can be observed growing on trees and shrubs in all states of Australia and New Zealand. Over the past few years the taxonomy of this species has been in a state of flux and has been known as *Phaeographis mucronata*, *Phaeographis australiensis* and *Platygamme mucronata*, but the resolving of the correct name has now been achieved.



Cryptogam of the Month-August 2010



Diploschistes conceptionis

Diploschistes conceptionis is a under collected crustose soil lichen that occurs mainly on clay based soils. Appearing as a flat circular blob, it is characterised by the white powdery thallus along with the presence of black immersed urceolate fruiting bodies. This species reacts to chemical spot applications of bleach (C+) by turning red at point of application but will not respond to a spot of Potassium hydroxide (K-). *Diploschistes thunbergianus* appears similar in appearance to this species but will react to potassium hydroxide to turn the chemical spot yellow (K+). *Diploschistes conceptionis* occurs in South America and in the semi-arid regions of Western Australia but appears to be absent in the other Australian state.

Cryptogam of the Month – September 2010



Ptychostomum angustifolium

Ptychostomum angustifolium is a tufted moss that is either pale to bright silky green to a reddish brown. Leaves erect and forming a coma when wet and slightly twisted when dry.

Common cosmopolitan species growing on dry sandy or silty soils and rocks in forest areas of all southern Australian states.

Previously known as *Bryum caespitium*.

Cryptogam of the Month – October 2010



Bacidia millegrana

Bacidia millegrana a crustose lichen that appears to have no thallus (immersed in bark tissue) with numerous scattered large black domed shaped apothecia. The spores are multi-septate and long spindle shaped. Chemical spot testing along with UV light testing are negative reactions. Usually found scattered on fibrous bark of trees. This cosmopolitan genus needs further study in Australia. This species can be seen in the wetter areas of southern WA.



Bacidia spores (multi-septate)

Cryptogam of the Month-November 2010



Goebelobryum unguiculatum

Goebelobryum unguiculatum is a shy but easily recognised liverwort that occurs in peaty wetland areas of southern Australia. In Western Australia it is confined to the south west. This species is usually hidden under dense shrubs layers and occasionally amongst the more open sedges.

It is characterised by the large prostrate shoots that are an intense green but tend to decrease in size and turn chestnut brown to red with exposure. The leaves flex upwards from a flat base and appear to be spaced in rows. The margins are distinct with a fringe of long white teeth giving the plant a spiky silky appearance.

A common name has been coined in the eastern states where it can be known as Mister Whiskers.

Cryptogam of the Month-December 2010



Hypocenomyce scalaris

Hypocenomyce scalaris a small squamulose lichen that can usually be located either upon charred bark or decaying wood. The small green to cream coloured shell like thallus is usually curved upwards with the underside exposing a powdery mass (soredium). Apothecia are rarely seen but when present are grey pruinose discs. This species appear to be a primary coloniser on bark and has been noted to appear 2-3 years after a fire.

This species can be confused with another species of *Hypocenomyce* but easily separated using a chemical spot test of chlorine bleach. The negative reaction of the confusing species separates this species which has a positive reaction C+ red.

Cryptogam of the Month – January 2011



Hypogymnia enteromorphoides

Hypogymnia enteromorphoides is a foliose subalpine species that occurs on bark and twigs recently recorded in southern Western Australia. Thallus lobes are pale grey with black lines or markings, inflated with a large hollow cavity and perforations near the lobes tips. The apothecia appear clustered and are shortly pedicellate with a distorted urn shaped base when young. The disc is pale reddish brown, deeply concave but becoming flattened and cracking upon maturity. The spores are ellipsoidal, simple and colourless 6-8 μ m long.

This species occurs in south eastern Australia and in southern South America. *Hypogymnia* is a genus of c. 45 species widely distributed in both hemispheres with twelve species in Australia and five species presently found in WA.

Cryptogam of the Month-February 2011

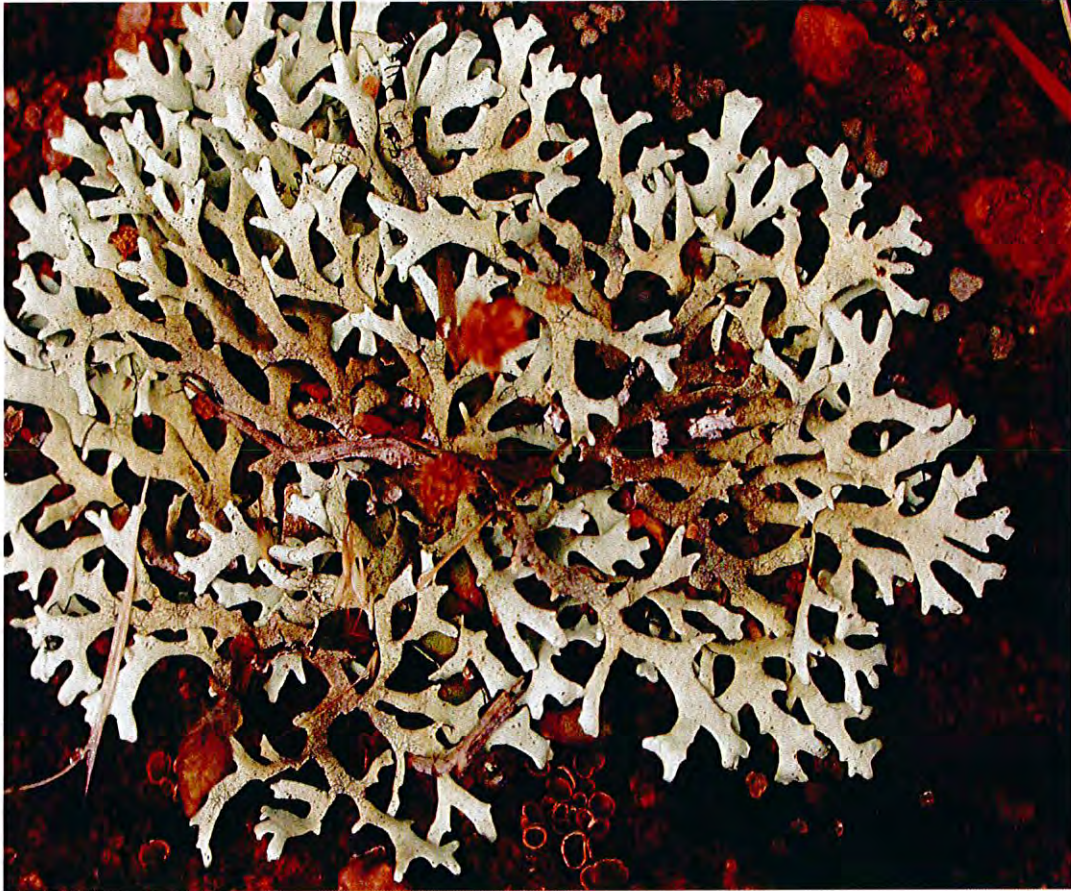


Bryum lanatum

Bryum lanatum is an attractive small silvery white tufted moss growing dry soil in semi arid areas. This species is fairly widespread in Australia but either overlooked or confused with *Bryum argenteum* and *Gigaspermum repens*. The presence of a long costa (mid rib or thick leaf nerve) that extends the whole length and beyond the leaf separates this species. Fruiting capsules which appear on long stalks are rare but when present further separate the two genera mentioned.

This species is located in all states except Tasmania but is more common in tropical and subtropical areas.

Cryptogam of the Month- March 2011



Xanthoparmelia reptans

Xanthoparmelia reptans a foliose lichen that is common on drier soils in semi arid areas. Forming scattered rosettes loosely attached to the surface of clay soils and range in size from 1-5 cm wide. The pale yellow to greenish yellow thallus is multi branched and the lower surface is brown. Simple dark rhizines (1-2 mm long) are present but sparse and can be easily seen protruding from the lower surface. A spot test of the medulla with Potassium Hydroxide (K) reacts positively and shows as a brown colour.

This species occurs in most Australian states and has also been reported from the South Island of New Zealand.

Closely related to *Xanthoparmelia amphixantha* and *Xanthoparmelia willisii* both species occur in WA and can be found in similar habitats. Character do exist that separate these species and can be found in the Flora of Australia volume 55.

Cryptogam of the Month-April 2011



Diploschiste ocellatus

Diploschistes ocellatus a crustose lichen, that occurs on calcareous clay soils and occasionally located on rock surfaces. Usually located in drier areas associated with mallee species where it forms patches of a thick mat-like crust. The thalline crust can appear to lay flat on the soil surface or buckle and lift off the soil as it ages. The dull to glossy grey-white colour of the thallus and the lumpy (bullate) appearance of this species makes recognition easier when other *Diploschistes* species are present. The presence of numerous large apothecioid fruiting discs compared to the other known species in this genus has made identification easier. The reaction to Potassium hydroxide (K test) shows as a positive yellow-red colour.

Occurs in most Australian states but also can be located in several other countries.

Cryptogam of the Month – May 2011



Metzgeria consanguinea

Metzgeria consanguinea is a recently rediscovered liverwort from southern WA. The thallus of this is a yellowish green colour and superficially resembles the similar looking *Metzgeria furcata*. Locally both species grow on the bark of mature *Trymalium* stands in humid situations. The tips of the thallus help separate the two species. This species has long tapering thallus apices while the other species has obtuse blunt thallus apices

M. consanguinea has a known world wide distribution but only known from a few locations in Victoria and now WA. The original material of this species was collected in Indonesia (1890) on a mountain top.

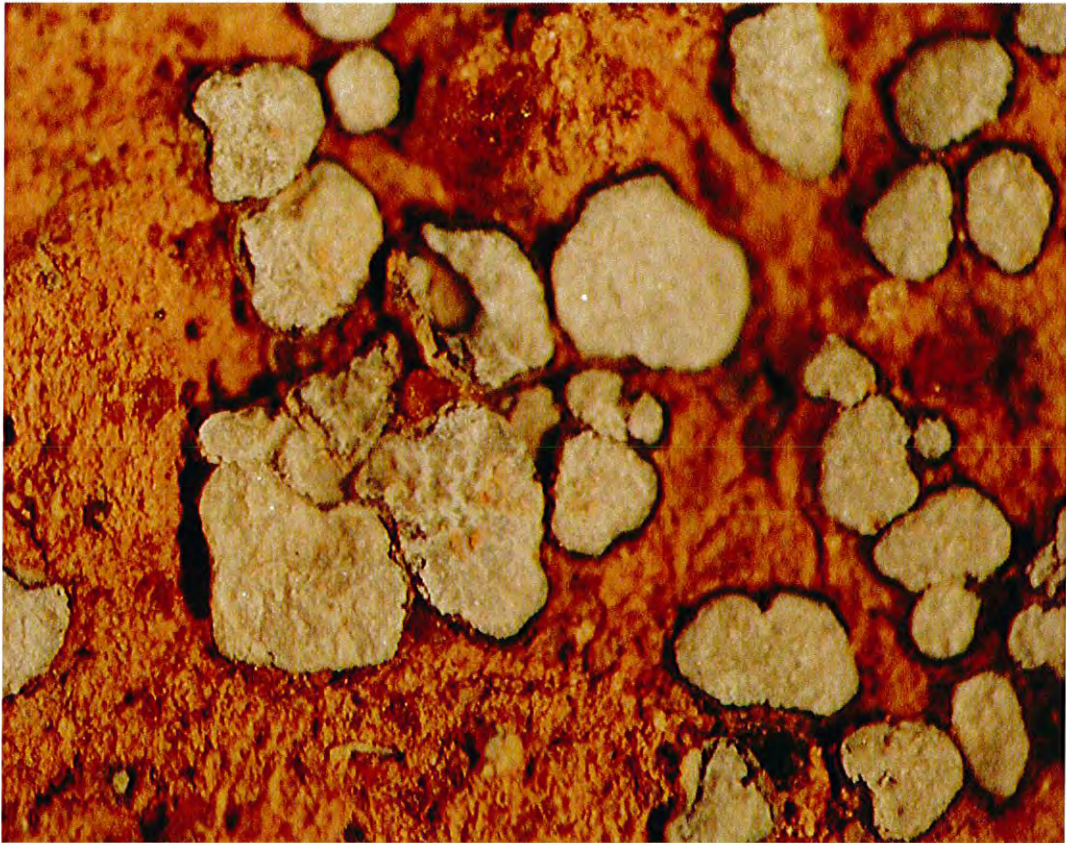


Metzgeria consanguinea apices



Metzgeria furcata apices

Cryptogam of the Month – June 2011



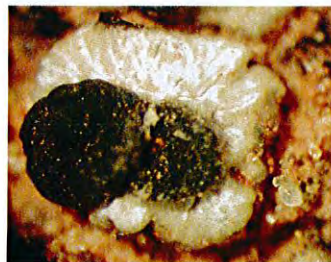
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Lecidea globifera

A squamulose soil lichen that has a degree of confusion as to which name should be applied. It is known as *Psora globifera* in American lichen papers and is noted as having other close species which at present are not recorded for Australia.

The flat to slightly concave-convex squamules are around 5 mm in size and the top surface is covered with a white sugar like crystalline coating. Apothecia are attached to the top surface of the squamule and resemble a fried egg but appear to be dark brown or black in colour. No positive reactions are noted when using the standard chemical spot tests.

This species occurs in the southern arid regions of Western Australia and South Australia. Further collections and research on this species is required to determine the true identity of this unusual lichen.



Lecidea fruiting

Cryptogam of the Month-July 2011



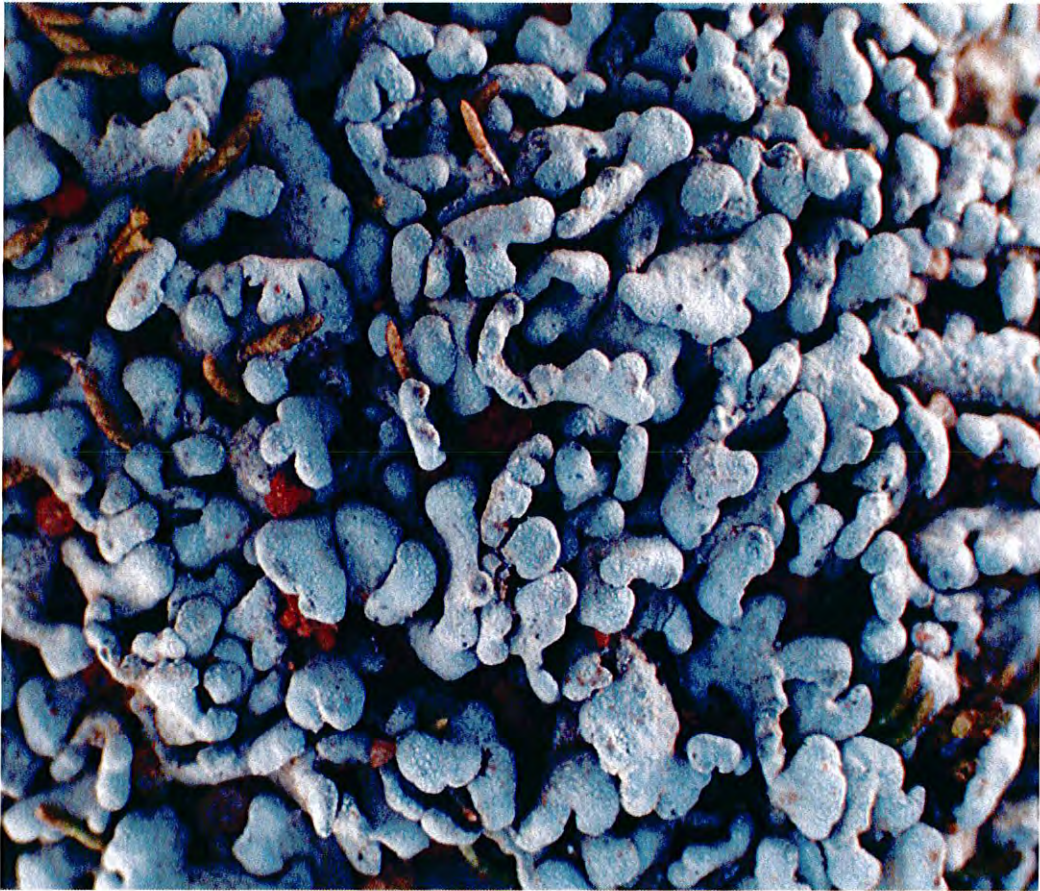
Goebelobryum grossitextum

Goebelobryum grossitextum has possibly been recently rediscovered in the Walpole area, considered to be a rare endemic species to Western Australia. Found growing in wetlands that are composed of peat deposits that remain moist for extended periods. Occasionally seen in open areas but more often found in sheltered positions on the ground associated with other moss and liverwort species.

The large thallus has a rolled up appearance that may be either green or chestnut brown. The edge of the thallus has short spines which is similar to *Goebelobryum unguiculatum* which is generally green but may also become tinged chestnut brown. The main character difference appears to be the presence of blue oil bodies contained in the cells of the thallus tips.

Further collections of this species in the fresh state are required and will help to confirm this species or place it as a variant of *G. unguiculatum*.

Cryptogam of the Month – August 2011



Siphula coriacea

Siphula coriacea a fruticose lichen with erect thick densely clustered grey lobed thallus bodies. Fruiting bodies are rare and have not been seen in W.A. A variable species in which several forms can be seen growing together. If dug up a robust root-like structure can be seen spreading into the soil clod or moss mat. Commonly seen growing on exposed to sheltered positions on rock platforms that have shallow soil patches and dense moss mats and on soils in arid to wetter areas.

A common species found throughout Australia and overseas.



Siphula coriacea showing two growth forms

Cryptogam of the Month – September 2011



Lecanora caesiorubella

Lecanora caesiorubella a crustose lichen that grows in the shrub to tree layers of forests and woodlands. The thallus is verrucose (warted) to areolate (cracking) whitish grey to greenish grey colour. The apothecia a large thick dish shaped disc, white to pinkish coloured and heavily grey pruinose in the centre with a prominent thick margin. Spores are simple elliptic in shape and colourless. Thallus and apothecia margin reaction to spot testing positively, K+ yellow or yellow to red.

Found growing on bark of a wide range of tree species.

Occurring on trees in most states of Australia, the exception being the Northern Territories. Also found occurring in NZ and the America and Asia.



Lecanora spores

Cryptogam of the Month – October 2011



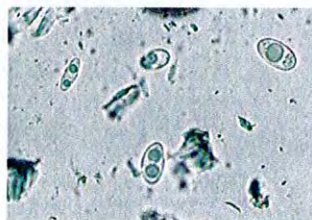
Ramboldia sorediata

Ramboldia sorediata, crustose lichen with a distinctive powdery yellow to tan thallus. The thallus appears to be heavily cracked and undulate under the powdery covering. Apothecia are rare and when seen are a small black to dark brown dish shaped disc with a thin margin appearing to be immersed into the thallus tissue. Spores are small, simple ellipsoidal in shape and colourless.

Spot test of the thallus with Potassium hydroxide (K) results in an intense yellow reaction.

Located on bark of shrub branches and found only in the Wheat belt region of Western Australia.

An endemic species that can be overlooked as it can be confused with *Cladia shizopora* and a *Calicium* species especially when the fruiting bodies are absent.



Ramboldia sorediata spores

Cryptogam of the Month – November 2011



Cladonia krempelhuberi

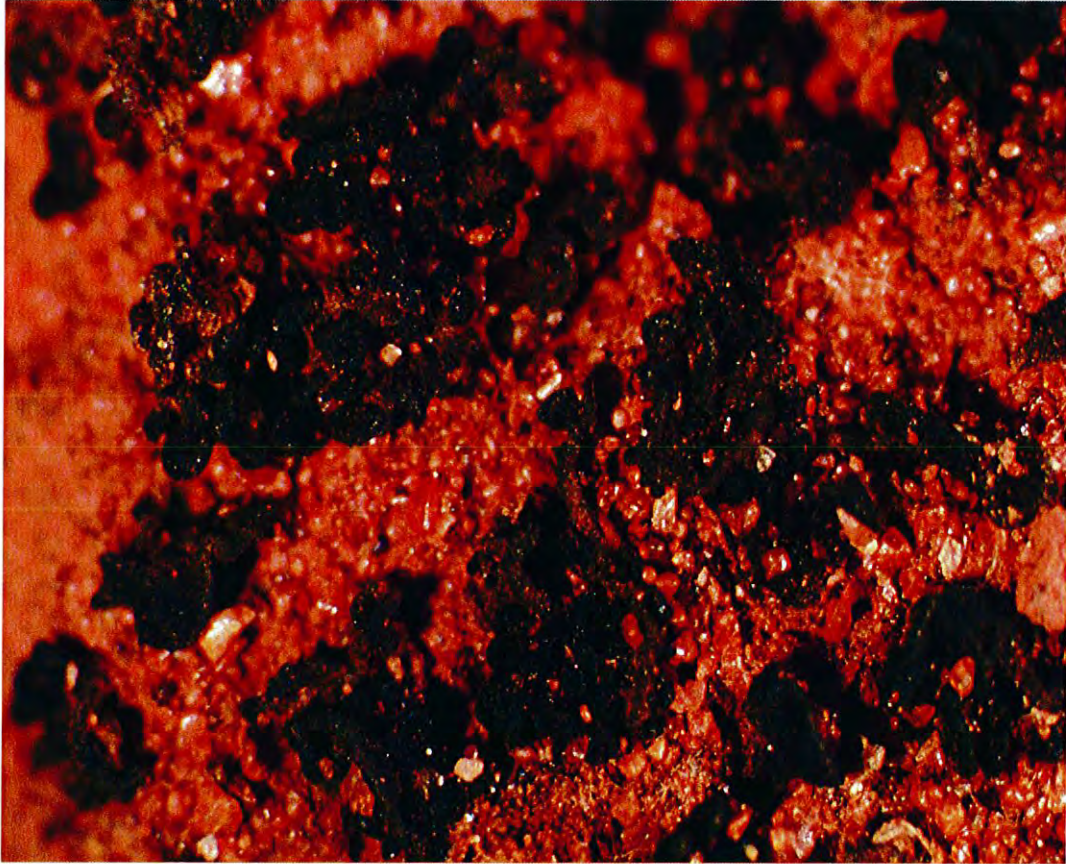
Cladonia krempelhuberi a fruticose/squamulose lichen with erect grey green trumpet shaped (scyphi) podetia edged with dark brown globular fruiting bodies and the presence of basal squamules. Fruiting bodies can be rare on Australian forms but common in Tasmania and to a lesser degree southern WA.

Chemical spot testing of the podetia with Potassium hydroxide (K) can give no reaction or a weak positive reaction (K+ weak yellow).

Found growing on soil or decayed organic material rich soil surfaces in forests and woodlands.

Very similar in form to *Cladonia cervicornis* subsp. *verticellata* and *Cladonia calyciformis* but can be separated by the consistently negative (K-) reaction of these 2 species.

Cryptogam of the month-December 2011



Collema coccophorum

Collema coccophorum is a small dark olive green to black foliose to subfoliose lichen. The distorted thallus becomes slightly jellied when moist but solid when dry. Surface of the thallus may be covered with short isidia-like lobules giving this species a rough appearance. Apothecia when present can be numerous, usually black or reddish brown coloured flat to convex discs.

This species is commonly located on limestone, granite rocks and various soil types. In Western Australia this is one of eight species common in arid to semi arid areas. Populations of this species can also be seen within other Australian states and several overseas locations.

A similar soil species is *Collema novozelandicum*, which is rarely covered in lobules but has densely covered in isidia. Other species of this lichen group tend to be mainly located on bark tissue in more temperate environments.

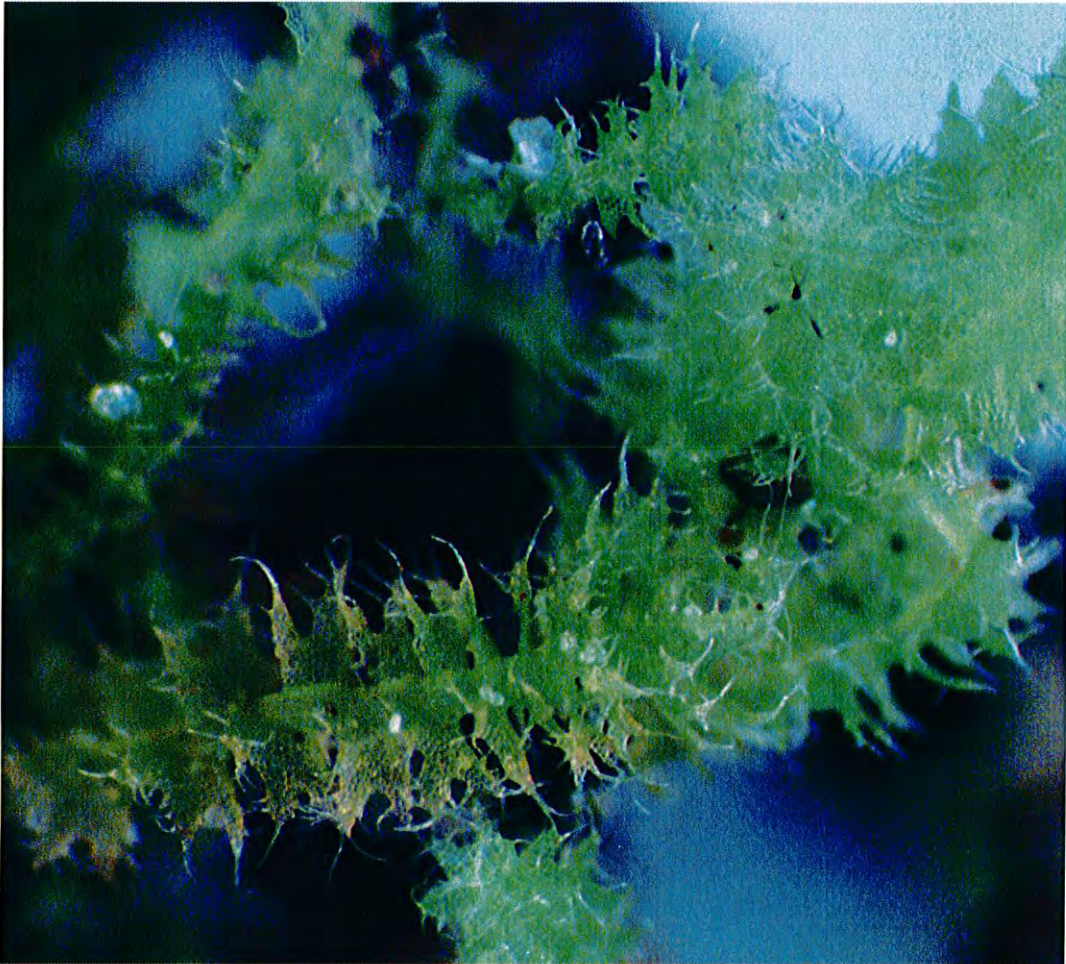
Cryptogam of the Month January 2012



Hypocenomyce foveata

Hypocenomyce foveata a squamulose lichen that is usually located on decaying wood in the shrub layer (31cm to 3m). The squamules although singular appear massed and range from brown to green in colour often with a raised dimpled thallus. Apothecia appear to be rare and when present appear as a flat disc. Testing the squamules with chlorine bleach shows a negative reaction (C-) separating this species from both *H. australis* and *H. scalaris* both of which give a positive reaction (C+).

Cryptogam of the Month February 2012



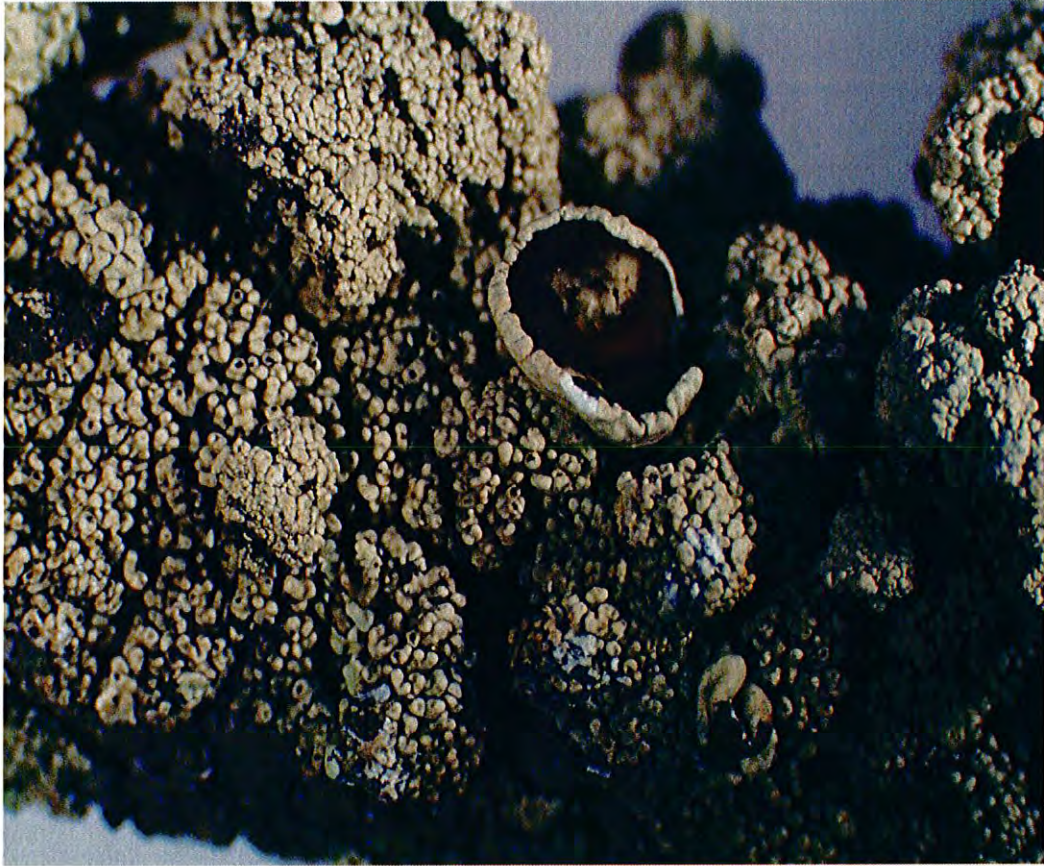
Chaetophyllopsis whiteleggei

Chaetophyllopsis whiteleggei an attractive liverwort that is quite common but easily overlooked on sandy heath lands and southern sclerophyll forests. Usually located hiding under low shrubs or tangled within the bases of some grass or sedge species. The plant greenish stems appear to be silky due to the white hair-like teeth on the thallus edges. The thallus structures align along the stem to form a square shape. Fruit capsules are uncommon.

This species is wide spread with scattered occurrences in the southern part of WA and other Southern Australian states.

This species is one of the few Australian liverwort species that has a common name: Furry Worms.

Cryptogam of the Month – March 2012



Flavoparmelia marchantii

Flavoparmelia marchantii, distinctive recognisable foliose lichen described in 2005. This species occurs on dead and burnt wood and bark of trees/ tall shrubs in fringing thickets associated with rivers and wetlands. The thallus varies in colour from yellow-green, brown to greyish with distinctive globose to cylindrical dactyls which gives the upper surface a pimply wrinkled appearance. Apothecia are common and usually have cinnamon brown centre and rim with dactylate protrusions.

A similar looking species that may cause some confusion is *Flavoparmelia haysomii* that prefers to grow on rock (saxicolous) while *F. marchantii* occurs on bark. (corticolous).

At present this species occurs mainly in a number of locations in south western Western Australia.

The former director and botanist Dr. N Marchant was honoured by naming this species after him.

Cryptogam of the month – April 2012



Buellia georgei

Buellia georgei, subcrustose lichen which has a definite shape (effigurate) and may form a rosette 3-7 cm wide. The margins of the thallus can appear to have short lobes or remain undefined. Thallus surface appears chalky white or greyish when a lichen parasite is present. Apothecia are numerous and convex dome shaped usually black or slightly greyish when covered with a white frosting (pruina). The spores are one septate olive green to dark brown in colour and elliptic in shape. The outer wall of the spore has a coarse ornamentation.

Chemical spot testing of the thallus with bleach (Chlorine) gives a positive orange reaction.

A common limestone species located on the ground level that occasionally occurs on calcareous soils.

This species is endemic to Australia and occurs in all of the southern states.

Cryptogam of the Month – May 2012



Psora crenata

Psora crenata, squamulose lichen that occurs on soil and occasionally on stone. The thick thallus varies in colour from pink, brownish red to orange and occasionally masked by a coating of mineral salts or pruina. Mature squamules tend to undulate and may have a fissured surface with a sunken depression in the centre. Margins may be slightly turned up with a white crenulated fringe but are usually turned downwards. Apothecia are marginal and convex to hemispherical, dull to shiny black and sometimes covered in a white pruina. The species is prone to a lichen parasite that appears as a black brown spot on the thallus surface.

This species can be easily confused with *Psora decipiens* that can co exist in a population and have similar colourations. The thickness of the thallus and the presence or lack of depressions can separate the species. Chemical analysis can also separate these two species as *P. crenulata* contains norstictic acid while *P. decipiens* lacks lichen substances.

Recently separated in Western Australia from *P. decipiens* and occurring in southern Australia in semi arid regions.

Cryptogam of the Month – June 2012



Austroparmelina pruinata

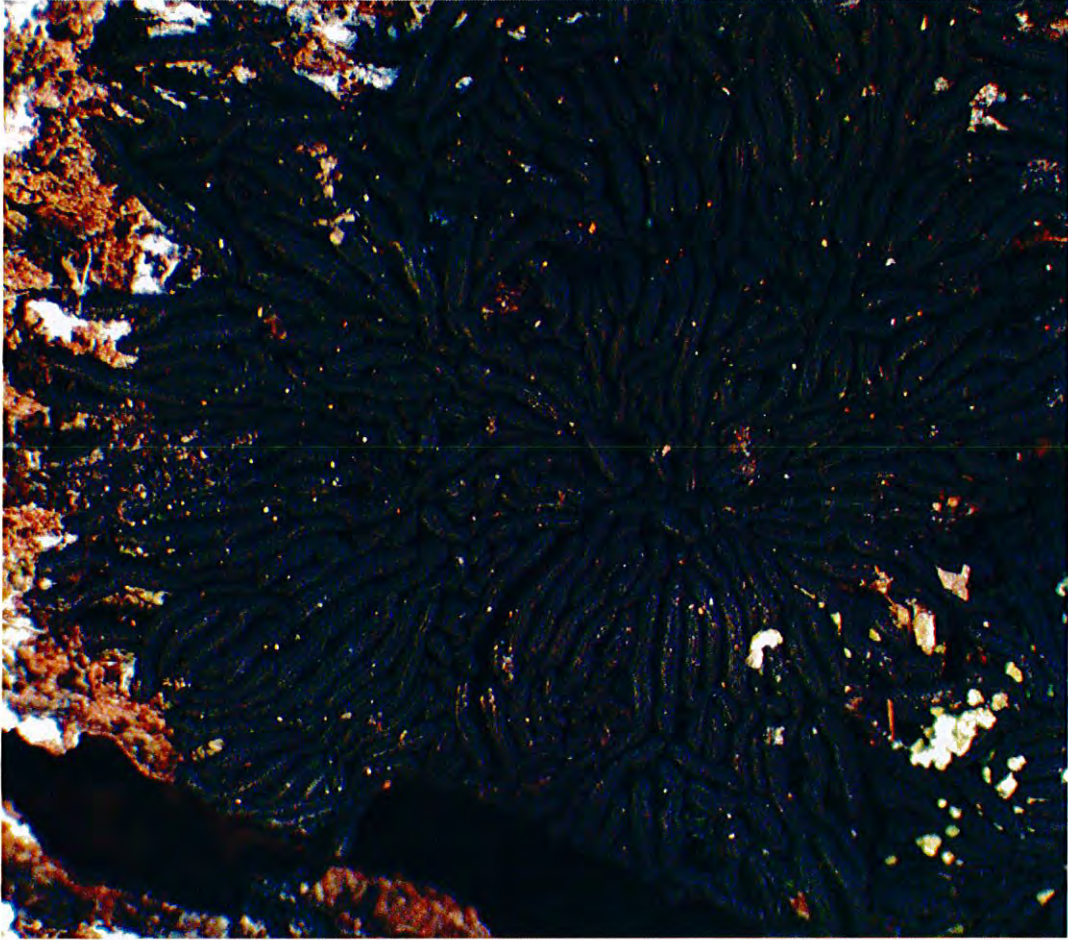
Austroparmelina pruinata is a common foliose species that usually occurs on bark of tall shrubs and some trees. The upper surface of the thallus is whitish grey but often pruinose near the rotund apices. Presence of dark spots (maculae) on the thallus surface is a feature of this species. Apothecia are common and large distorted disc shaped with a bluish pink surface which is usually pruinose.

Spot testing of cortex with Potassium hydroxide (10%) is positive yellow (K+ y) and the medulla is Potassium hydroxide plus Chlorine bleach positive (KC+ red).

Endemic to Australia this species also occurs in South Australia and Victoria.

Previously known as *Canoparmelia pruinata*.

Cryptogam of the Month – July 2012



Glonium circumserpens

Glonium circumserpens is a non lichenised fungus that occurs on well decayed wood and very occasionally upon stone surfaces. This species is usually noticed on the ground in semi shaded positions. The black worm like rays and the presence of a long surface slit that is usually closed has led to this species being misidentified as a lichen species. *Graphis* species look similar but have spore differences that can separate this species along with the absence of a lichenised crustose mat.

To date this species appears to be found in the wetter areas of southern Western Australia and Tasmania. Collections of this species have been made in jarrah / she oak forest areas and appears to be a primary coloniser on fallen logs and branches and may appear after a fire in some areas.

The identification of this group is not well understood and several closely related species may be collected as this species or placed into *Graphis* or *Opegrapha* collections.

Cryptogam of the Month – August 2012



Dicranoloma diaphanoneuron

Dicranoloma diaphanoneuron is a tufted moss that forms small dense mats on moist decaying logs, tree trunks and in some areas rock surfaces. In most instances this species is usually located on substrates slightly elevated above the ground level. The golden yellow green colour of the long contorted linear leaves is distinctive and a aid to identification of this species. In the southern WA forests the dome shaped tuft and colour of this moss is easily spotted on logs but fruiting structures appear to be rare and not often sampled.

This species occurs in southern WA and also found in wetter areas of South Australia, Victoria and Tasmania.

Cryptogam of the Month – September 2012



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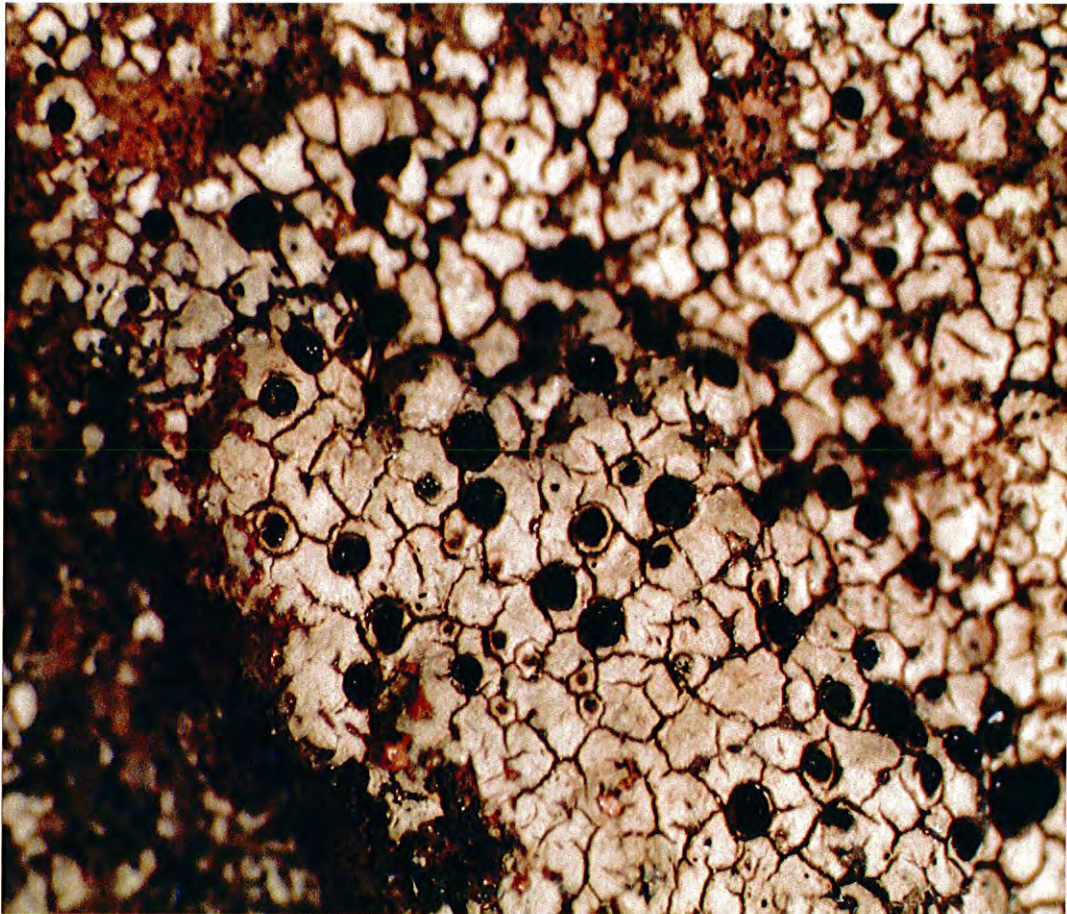
Jackelixia ligulata

Jackelixia ligulata brightly coloured foliose lichen that has been recently renamed. This species was previously known as *Xanthoria ligulata*.

A common species that is found growing on various rock types usually in coastal areas. The yellow to orange coloured thallus is distinctive but may appear greenish when located in shaded positions.

Jackelixia is a close relative of the common *Xanthoria parietina* the common orange yellow lichen on fruit tree bark. The two genera can be separated by the thallus shape which is flat in *Xanthoria* and the surface appears domed (raised) in *Jackelixia*. This genus was named in honour of Jack Elix a world renowned Australian lichenologist.

Cryptogam of the Month – October 2012



Buellia kimberleyana

Buellia kimberleyana poorly known crustose lichen from the Kimberley region of Western Australia.

Thallus is grey to brown or ochre coloured with a matt finish. Thallus has a crazy path-like appearance (areolate) with slightly convex angular portions. Apothecia are initially immersed but become slightly adnate (on the thallus surface) as they mature and coloured black with an obvious grey rim and a convex centre. The apothecia have numerous asci with eight one septate brown spores.

Thallus spot test reactions are K⁺ yellow to red (Potassium hydroxide) and the medulla K⁺ yellow then red. Bleach reactions are negative and UV reaction is also negative.

Located growing on silica based stone and is endemic to the Kimberley area and part of the Northern Territory.

Cryptogam of the Month – November 2012



Peltula euploca

Peltula euploca strange shy squamulose lichen with disc-like plates that can grow up to 10mm in diameter with smooth to slightly lobed or entire thickened down turned margin. The upper surface is olive to brown or black smooth to slightly soresiose or rugulose. Apothecia are rarely seen but are usually solitary or few and sunken into thallus surface.

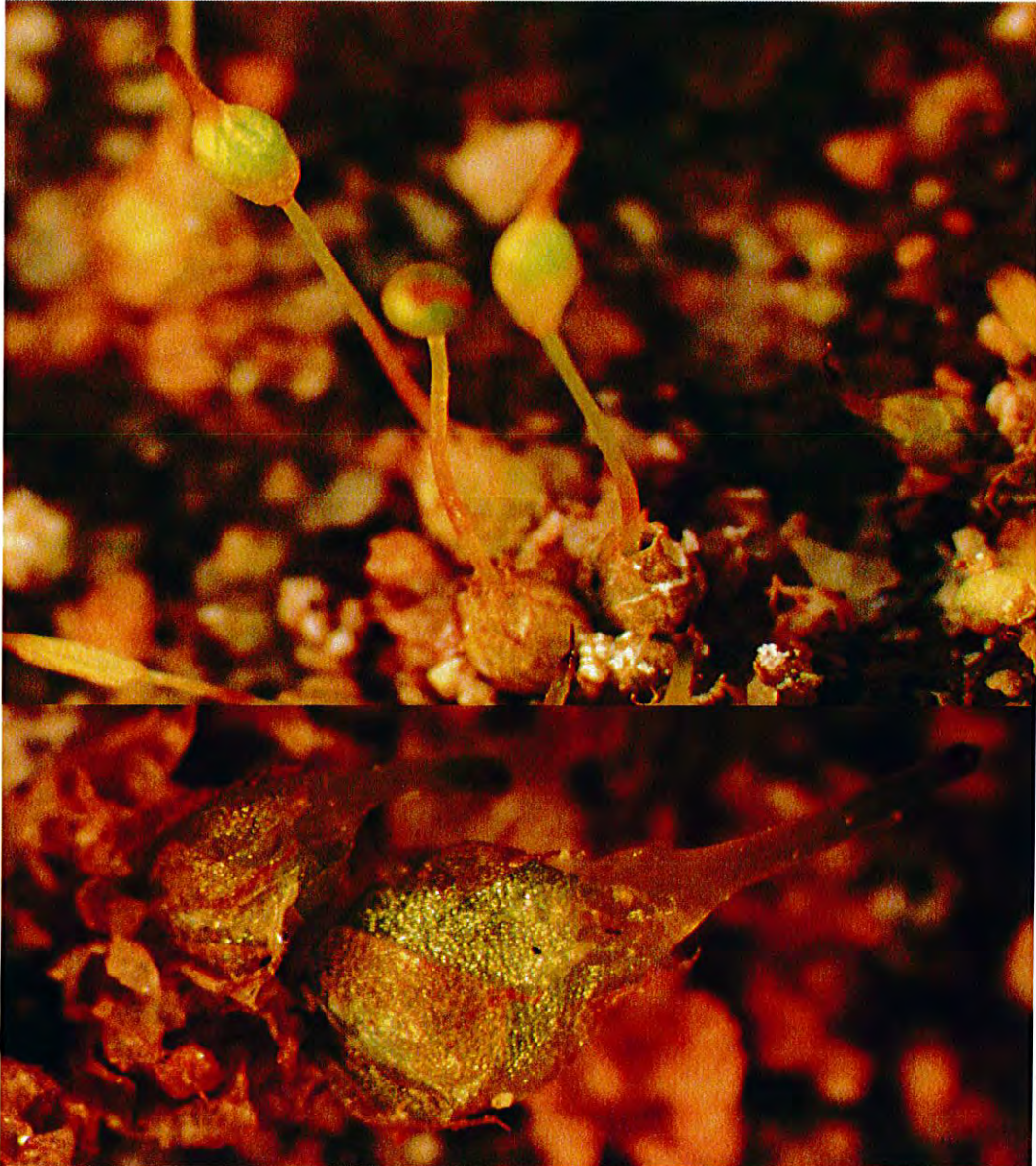
Usually found in sheltered positions on overhangs, in caves entrances or deep fissures in rock surfaces on outcrops or breakaways in semi arid areas.

In Australia this species has been found in most states that have semi arid areas and include Victoria, NSW, SA and the NT.



Peltula fruiting

Cryptogam of the Month – December 2012



Entosthodon subnudus* var. *cuspidata

Entosthodon subnudus var. *cuspidata* a very common small species of tufted moss that grows on compacted soils. The leaves are broadly ovate with a small point at the apex. The small capsule is thistle shaped (when open) and held straight on thin seta up to 25mm in length but can be easily broken off.

Usually found on soils in dry forests or woodlands and occasionally on mallee soils. Located in all states of Australia except NT and also occurs in New Zealand.