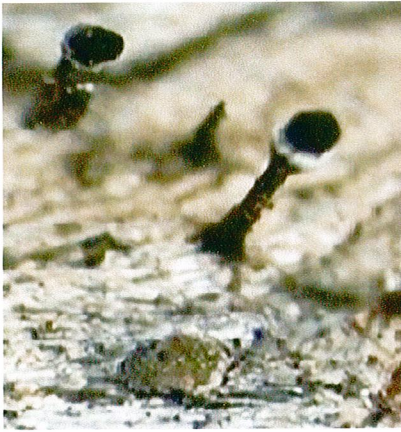


Collection of Lichen Specimens

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The collection of lichens is relatively easy and with less documentation required compared to that of the vascular and other non-vascular flora. Lichens can be collected either moist or dry and are usually sampled with part of the substrate.



Calicium tricolor

Photo by R. Cranfield

Equipment required:

- Note book or collecting book
- Knife
- Wood and cold chisels
- Hammer
- Secateurs
- Small paper bags
- Roll of toilet tissue or tissues
- Safety glasses
- Bag or box to carry samples

Collection data:

- Same as for vascular flora

Exception is the plant description.

Collection:

The mode of collection depends upon desired sample and the type of substrate the species is present on. In most instances the sample is either cut off or gouged out of the substrate and a portion can be easily removed.

With lichens the whole or a large portion of the plant is cut off with a portion of the substrate intact e.g. rock pieces are chiselled off, bark peeled, twigs lopped and pieces of wood removed with a chisel. When using both wood and cold chisels it is advisable to wear eye safety glasses.

Keep the collected samples bagged in separate numbered bags as they are easily mixed up. In the instance of lichens on a twig or branch place a 20 cm piece of twig into a bag and separate the lichen species later under a microscope.

These plants are true resurrection species and as required can be reactivated by spraying with water to make pliable or to record fresh colour. Samples can be placed into plastic bags but will require extra work to restore your samples because they can't be dried in plastic, unlike paper, but in field situations this may be the easy way to proceed. These plastic bags can be held in a fridge to retard growth and will allow you time to process away from the field. When

wet these species are robust but it is advisable to separate rock samples from other samples, especially fragile soil collections. Dry samples are extremely fragile and can be easily damaged in transport. Soil samples can be wrapped in toilet tissue for transport but will require stabilising with 10% solution of Aquadhere on the under side of the sample as soon as possible.

Do not keep damp samples in plastic bags for long periods as fungi will develop, especially in warm situations and will ruin your sample.

To dry, place numbered paper bag or toilet tissue in a warm air drying oven or a fruit drier until dry. At this stage your sample may become fragile and will require careful handling.

Duplicate material is desirable but be careful not to exterminate populations. Note that there are several rare species recognised and as such are protected just as for the vascular flora. As with vascular flora, a collection licence is required.

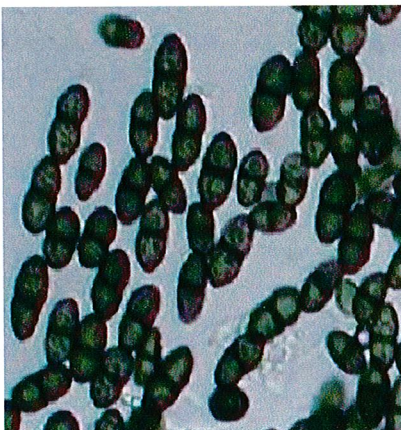
Processing:

The numbered samples are glued onto card or placed in folded envelopes after thorough drying. The samples are glued to the card and placed in a cardboard specimen box of which there are 3 sizes. Samples that are too large can be trimmed using a saw if on wood or carefully broken up if on rock. At this stage a specimen label is prepared, using the computer program Max if possible. It is required that vouchers be lodged at the Perth Herbarium with a duplicated set in your Regional Herbarium.

Identification:

Identification of lichens involves macro and microscopic examination along with chemical spot testing, and sometimes thin layer or gas chromatography to determine the chemical components of individuals. In most instances visual examination will help you to determine the family or genus with the species separated by either spore characters or chemical reactions. Several published keys and descriptions are available along with access to several web sites that may have an electronic type key. The matching of specimens with named herbarium samples is highly desirable as many species are variable in appearance so that when identified without this checking errors may result. It is anticipated that in the next couple of years the Herbarium FloraBase will have lichen images available to assist in the determination of lichens.

"Do not keep damp samples in plastic bags for long periods as fungi will develop"



Calicium tricolor spores

Photo by R. Cranfield

Collecting data:

Use the collecting forms: fill in as many fields as possible, but remember that the specimen will be useful even if only some fields are filled. ☀

Site No.: _____

Associated Vegetation: _____

Muir's Classification: _____

Life Form Density Classes (LFDC) [number of layers]: _____

Horizontal View Distance (HYD) [1.5m from ground level]:
 1-20m 20-50m 50-100m 100-150m 150m+

Floristic Richness: 0-20 21-50 51-100 100+ species

Seedling and Sapling Abundance: Very few Moderately abundant Abundant

Habitat: Plain/ Valley/ Breakaway/ Outcrop/ Hill/ Dune/ Ridge/ Flood Plain/ Water Course/ River/ Lake/ Pool/ Swamp/ Wetland/ Salt Lake/ Modified/ Road or Rail buffers/ Other

Micro habitats: Soil/ Stream banks/ Litter or organic mats/ Stones/ Rock sheets/ Overhangs crevasses/ Logs burnt unburnt decaying/ Shrubs alive dead/ Trees alive dead/ Other

Site Aspect: N S E W Site Modifier: open/ closed/ exposed/ mist layered/ disturbed

Slope of area (angle of inclination °): _____

Weed Abundance: nil few common Abundant

Dead Plants (in an area): Absent/ Present/ % of Population: _____

Fire History (year): _____ Time of Fire: A / S / SU / W / I.

Fire Type: Wild/ Controlled

Erosion/ Disturbance: Absent/ Present Type of Erosion: Water/ Wind/ other

Soil Surface: Bare/ Littered/ Gravelly/ Stony/ Cryptogamic/ Crusted/ Compacted/ Loose/ Soggy/ Moist/ Dry/ Modified/ other

Litter Depth (cm): _____ Litter Condition: new/ old/ broken down

Soil Colour: Red/ Brown/ Yellow/ Black/ White/ Grey/ Mottled/ other

Soil Type: Sand/ Clay/ Loam/ Sandy Clay/ Clayey Sand/ Peaty/ other

Soil pH: _____ Underlying Geology: _____

Type of Rock Outcropping: _____ % of Area: _____

Locality: _____

Map Sheet: _____ Contour Range (altitude): _____

Latitude: ° ' " S Longitude: ° ' " E

GPS Fixed: Y N Datum Used: WGS84, AUS84, AGD84, GDA94

Collector(s): _____ Date: _____

Cryptogam Collecting Book

Det Name: _____ Family: _____

Field Ident: _____

Collection No.: _____

Biotic Type: Epiphyte/ Saprophyte/ Parasite/ Free living

Growth Phase: Dormant/ Active/ Vegetative/ Fruiting/ Desiccated/ Stressed/ other

Growth Substrate: Exposed/ Sheltered/ Wet/ Dry/ Wood (alive/ dead/ decay/ ng/ charred)/ Bark (alive/ dead/ charred)/ Leaf (alive/ dead)/ Charcoal/ Ant Hill/ Soil/ Stone (epipetric)/ Dung/ Organic Material/ other

Facultative Host: _____

Associated cryptogams: _____

Stratal position: ground level (0-30cm) shrub layer (31cm-3m) tree layer (3.5m+)

Frequency of Occurrence (Micro): Numerous/ Frequent/ Occasional/ Solitary/ Localised

Site Area Frequency: Abundant/ Frequent/ Occasional/ Isolated/ other

Taxa Description

Lichen

Group: Filamentose Foliose Fruticose Leprose Squamulose

Thallus: erect immersed appressed not obvious

Thallus Colour: Wet/ Dry upper surface lower surface

Fruit Bodies: Absent/ Present/ other Colour: _____

Fruit Structures: Stalked/ Podetia/ Mushroom/ Lirillate/ Lecanorine/ Lecideine/ Perithecia/ Apothecia

Liverwort/ Hornwort

Thallus Colour: Wet/ Dry

Spore/ Fruit Bodies: Absent/ Present/ other

Moss

Plant Colour: Wet/ Dry

Spore/ Fruit Bodies: Absent/ Present/ other

ALGAE

Habit: _____ Colour: _____

Habitat: Marine/ Fresh Water/ Terrestrial/ Organoc material/ Other

Chemistry: Cortex Medulla

K K P

C C I N

KC KC UV