# The mounting of Mites (Acari) in Modified Dioni's Mountant

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Abstract

The Acari or Mites are an often neglected group of invertebrates which could benefit from study by gifted amateurs. A major technical hurdle for some, is the recommended gum chloral mounting media used to produce slides for a reference collection, this paper aims to expand upon the paper by Chick (2010), and provide a methodology for the preparation of mites in Modified Dioni's mountant.

## Traditional Methods

Hughes (1973) states that traditionally mites are preserved prior to slide mounting in Oudemans fluid which is noted as having the following formula:

70% Alcohol- 87 parts
Glycerine- 5 parts
Glacial acetic acid- 8 parts

Oudemans fluid is noted to prevent the shrinkage of mites, however 70-80% alcohol is also useful if glacial acetic acid is not available (Hughes, 1973) alternatively Irwin (2010) notes that 5 parts glycerine to 95 parts 70% alcohol is a useful preservative.

Traditional temporary mounts are made in either lactic acid (between 50% and 100% dependent on how robust the specimen is) or if staining is required "lactic acid lignin pink" which has the following formula:

Lactic acid 60 parts
Glycerine 40 parts
Lignin pink trace*
(Hughes, 1973)

*Evans *et al* (1961) notes that Acid fuchsin can be substituted.

Evans *et al* (1961) also note that iodine saturated lactic acid is also a useful stain for the acari.

Hughes (1973) notes that Canada Balsam is unsuitable for use in permanent preparations and offers that either Faure's modification of Berlese or C-M media be used, which have to following formulae respectively:

Faure's Berlese
Distilled water: 50ml
Chloral Hydrate: 50g
Glycerine: 20ml
Gum Arabic: 30g

C-M Medium
Methocellulose 5g
Carbowax 2g
Diethylene glycol 1ml
95% Alcohol 25ml
Lactic acid 100ml
Distilled water 75ml

Both of these media present may present problems for the amateur based upon their ingredients for reasons outline by Dioni (2010)

This paper intends to outline the mounting of mites using chemicals available to amateurs this historical techniques included above are shown for completeness.

## Methodology

Mites are collected and stored prior to slide mounting in 95 parts 70% alcohol and 5 parts Glycerine, as the long term archival properties of gum Arabic media are disputed in the literature it is always wise to maintain a small collection of reference specimens in this solution.

Using mounted micro-insect pins either mounted in small dowels, or using a microbiologists loop holder/pin vice to hold the pins. Specimens are then transferred to a small dish such as a glass watch glass and cleared by gently warming in a solution made up as 9 parts lacto-glycerine (60% lactic acid 40% glycerine) to 1 part aqueous acid fuchsin. Clearing and staining time will depend upon the specimen

The mountant of used for mites is Chicks (2010) modification of Dionis the formula being:

Gum Arabic 3g
Distilled water 10ml
Glycerine 5ml
Liquid glucose 2.5ml
Lactic acid 6ml
Antiseptic 1ml*
*the original paper lists that the commercially available antiseptic T.C.P. was used.
The ingredients are added together stirred and warmed over night, the author used a Vivarium heat mat as suggested by Chick (2009)

The specimen is then moved to a fresh glass slide and orientated, a small drop of Modified Dionis mountant is placed atop the specimen to anchor it down, the slide is then warmed on a heat mat to set the mountant, before adding a cover slip layers of mountant a built up as suggested by Henderson (2001) to reduce the need for cavity slides or coverslip props. When the slide is finished it is left to dry upon a heat mat. Finally it is ringed with nail varnish, the authors preference is for coloured nail varnish as this allows for easier inspection of failures of the ringing media. It is hoped that this paper stimulates amateurs to study mites and fill some of the vast gaps in the knowledge.

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