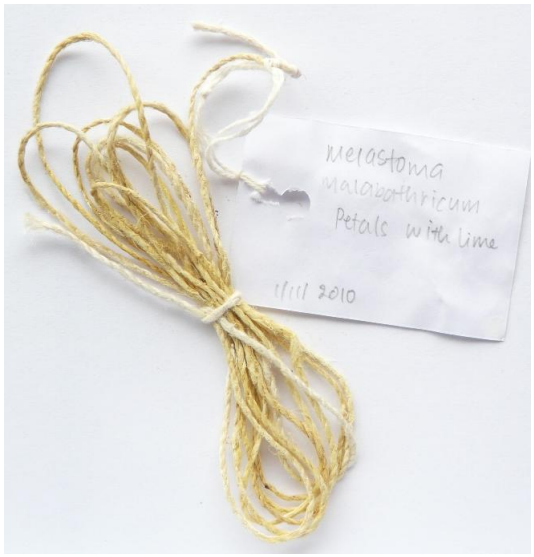
Supplement to String bag patterns and colour dyes of the upper Sepik basin and Border Mountains: Colour tests on pigment candidates

These experiments on *Melastoma* and *Morinda* were carried out by Dr Nura Abdul Karim, Plant Records Manager, and her team at the Singapore Botanic Gardens, using plant material sourced from specimens grown in the Gardens.

Melastoma malabathricum

Petals

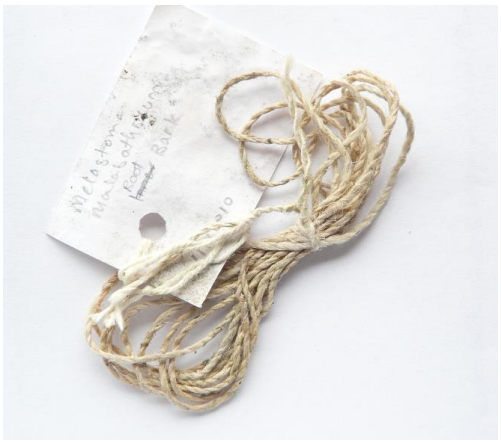
Large pink petals were crushed and rubbed onto dampened string, producing a pale greyish purple.

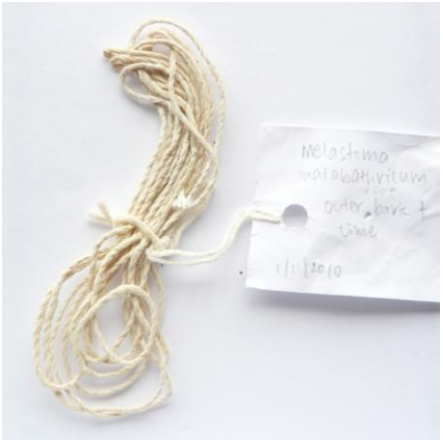


On application of lime to a second sample, there was an immediate change to a greenish colour which then transitioned to a yellowish brown. (This was not photographed as the change was rapid). On drying, this stabilised to a pale yellow. While these colours were fairly pale, they do have some resemblance to colours observable in the study area sample.

Root bark

Soil was removed from the root and the bark scraped off. The bark was then crushed with a small amount of water and allowed to steep. When applied to the string, this produced a grey-beige (left). The addition of lime to the second sample faded the colour to off-white, barely distinguishable from the base colour of the string (right).

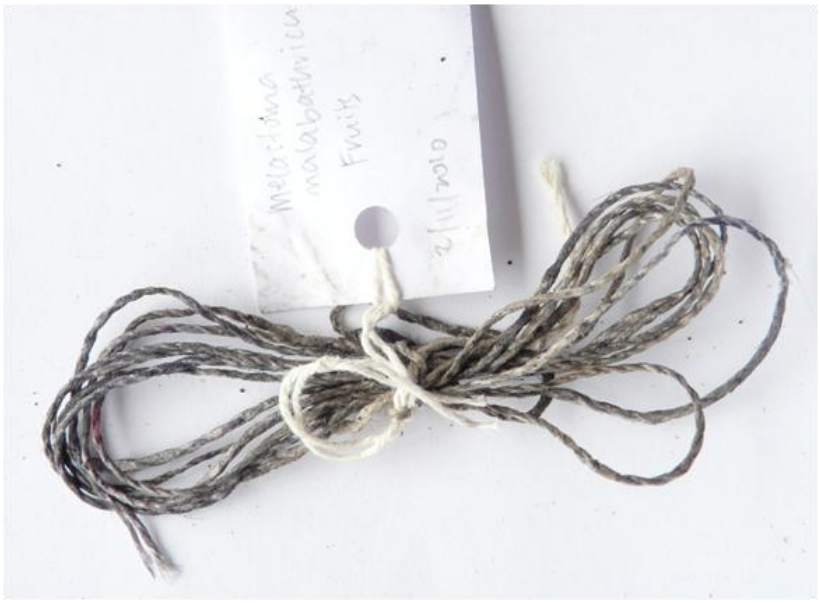




The crushed inner root used as before produced results which were very similar to that shown above for the root bark. In this case, neither the root bark nor the inner root results reflected any particular colour observed in the study area sample.

Fruits

Fruits (berries containing a dark pulp and many seeds) were crushed and applied to the string. This resulted in a deep purple which dried to dark grey having undertones of plum-purple, an example of which can be seen in the inner curve of the left portion of string in the top image below. Taking into account some variance in colour due to ripeness, this purple-black reflects pigments evident in the study area sample. The two images below the pigment test image are of the same string bag on which *Melastoma* fruits may have been used. Note the variability between the two dark stripes.

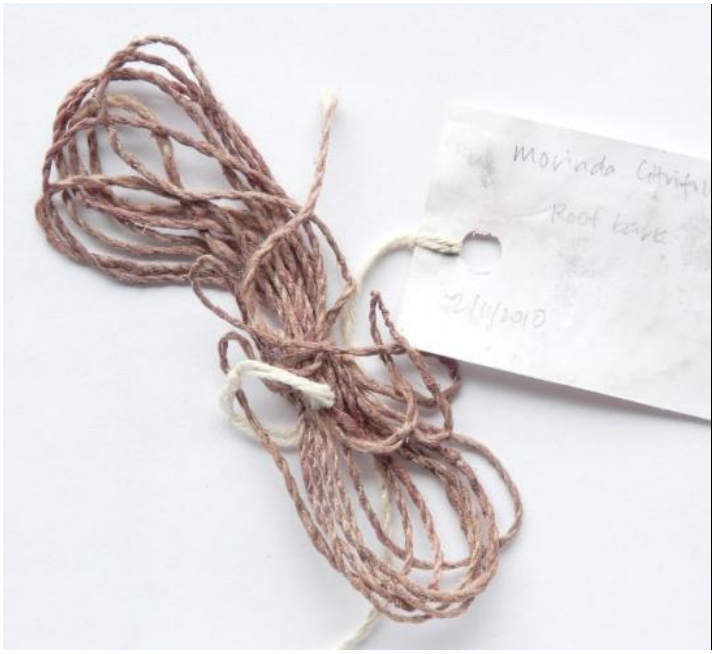


Rawei, Busa, AM E64596

The literature and correspondence with colleagues working with similar cultural material from New Guinea had led to the expectation of this kind of black/grey.

Morinda citrifolia

The bark was scraped from the root and pounded up with a small amount of water. After steeping, the preparation was applied to the string as before. A dark pink was produced, as seen on the image below (left). This colour does have some correspondence to colours found on Namie bags collected in the Yellow River area (right).



Tipas, Namie, Basel,Vb 15846

This test does not establish that *Morinda* is the likely source of any of the red-brown shades observed, as was conjectured previously, although a mordant is involved in producing such colours, rather than a direct application of plant material.