



# VALUING NATURE

Sharing Stories, Sharing Collections: Valuing  
Biodiversity in Wales

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Host: Amgueddfa Genedlaethol Caerdydd/National Museum Cardiff,  
Amgueddfa-Cymru/National Museum of Wales.

Home: Sustainable Places Research Institute, Cardiff University.



Sustainable Places  
Research Institute  
*Sefydliad Ymchwil  
Mannau Cynaliadwy*



# Aims and objectives of the placement

- **Aims:** to investigate ways in which the **AC/NMW Economic Botany Collection** (which includes medicinal plants, food products, seeds, dyes and tannins) and associated activities can improve societal understanding and valuing of biodiversity (where value is understood to refer to nature's benefits to people (ecosystem services), including monetary and non-monetary dimensions).
- **Objectives:** to co-produce a **Framework of Value** with stakeholders (including gardeners, farmers, civil society groups, artists and members of the wider public).
- **Outcomes:** to improve AC/NMW understanding of how the Economic Botany Collection can **further societal appreciation of biodiversity** and **fulfil AC/NMW's duty of well-being** under the **Well-Being Future Generations Act (Wales), 2015**.

# The Economic Botany Collection at National Museum Cardiff

- Approximately 3,500 specimens of various items ranging from things like coffee beans, seeds, to vegetable oils, cotton and other fibres, aromatic resins, raw rubber.
- There are also some that have a pharmaceutical basis – AC/NMW have recently acquired the Materia Medica Collection from Prof. Terry Turner (former head of Cardiff University Department of Pharmacy).

# Moving from cataloguing and exploring archives...



Photo credits: HP 2017.

# To talking to people!



Photo credits: PN 2018.

# Co-production Methods

Exploring how co-production methodologies supports investigation of:

- i. the **valuing** of biodiversity within society;
- ii. the **building** of biodiversity within society;
- iii. meeting the Museum's duty of well-being.

Working with stakeholders to co-produce a framework of values that guides future work of the EBC in terms of acquisition, displays and activities.

# Taking groups down to the stacks to look where the Collection is stored...



# To introducing groups to the wider Botany Collections including Botanical Illustrations and Botanical Wax Models



Photo credits: PN 2018.

# National Wool Museum, Consultation with volunteers including gardeners, spinners, weavers and knitters.



Photo credits: PN 2018.

# Workshops

48 people participated in 7 workshops:

- Youth Forum (5 people aged 18-25)
- Gardening group (7 people)
- National Wool Museum (10 weavers, spinners, gardeners)
- Women Connect First Golden Age group (15 people in 2 groups)
- Bute Park Education Centre staff and volunteers (8 people)
- Roath Botanical Artists (4 people)

Also several informal discussions with families during half-term in the Discovery Centre.

# Internal Stakeholders

Over 23 meetings and discussions with members of Botany, Learning, Art, Conservation and Research Team (National Museum Cardiff).

- Curators and volunteers (National Wool Museum)
- Curators, Conservators, Gardeners and Weavers (St.Fagans National History Museum)
- Consultation with AC-NMW's Youth Forum and a group connected to the Diversity Forum, Women Connect First.

# External stakeholders

18 external stakeholders contributed to the consultation including representatives from:

- Food Cardiff;
- Federation of City Farms and Community Gardens;
- Cardiff and Vale UHW;
- Sustainable Places Research Institute;
- Cardiff University School of Pharmacy and Pharmaceutical Sciences;
- National Botanic Garden Wales;
- Bute Educational Centre;
- Three artists including a textile artist, fine artist, ceramicist and zine artist;
- Three food historians.

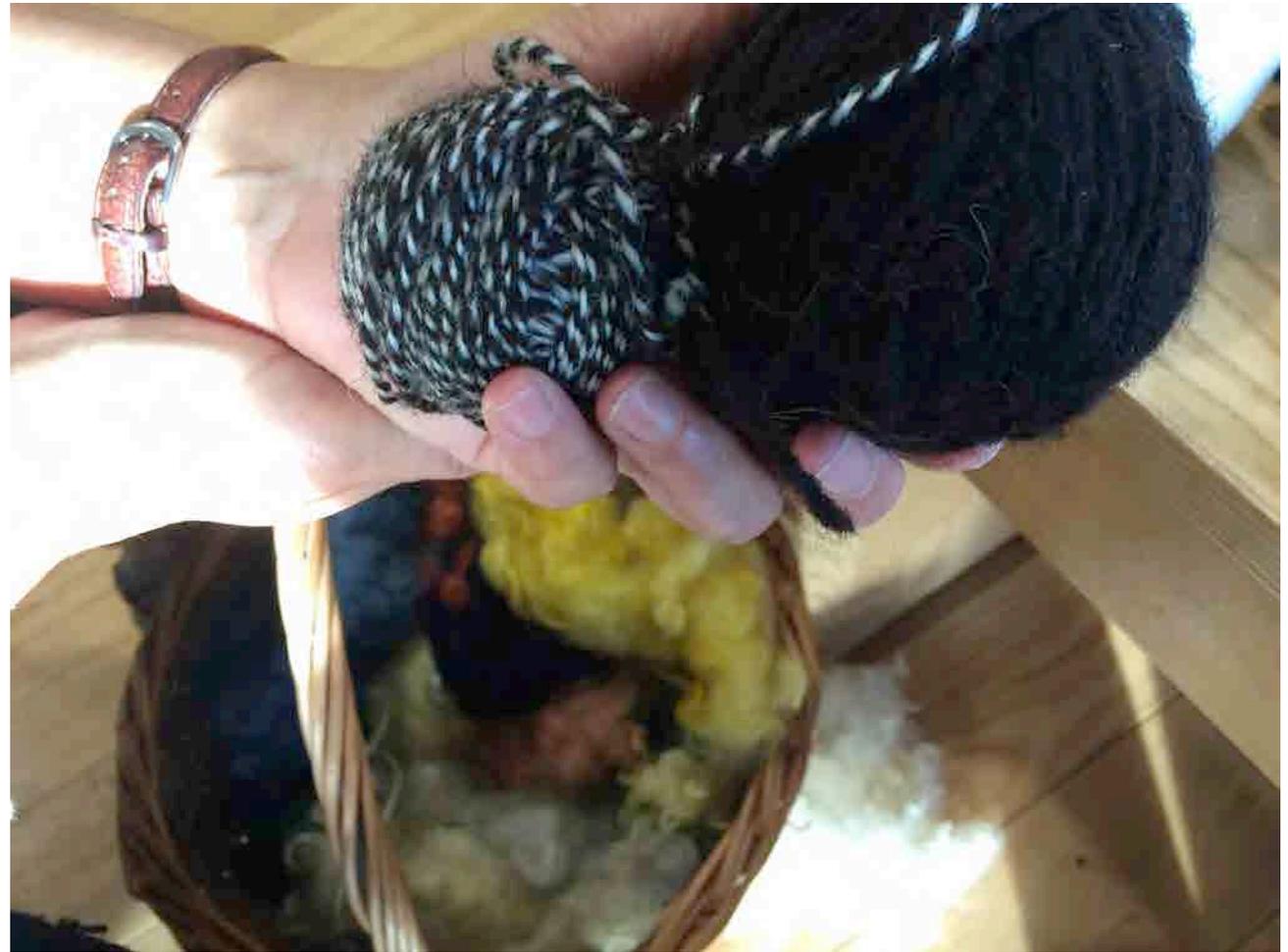
# National Botanic Garden of Wales



Photo credits: HP 2017

Photo credits: PN 2017.

# Speaking with artists and conservators



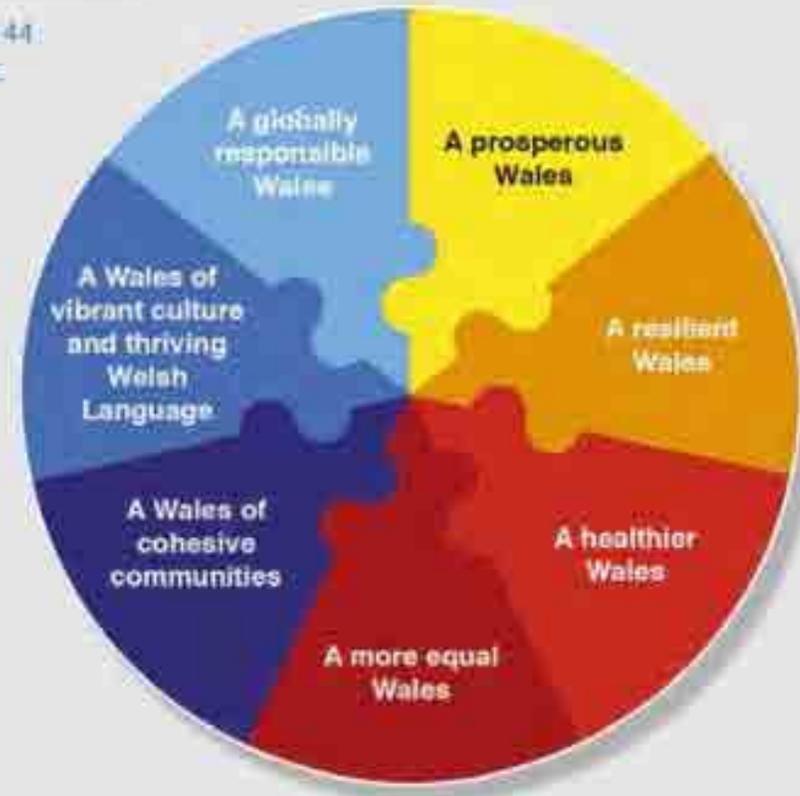
# How can AC-NMW fulfill its well-being duty through the Collections Strategy?

## Wales is doing things differently

Wales is one of the first countries to introduce a law like this. The Act says that 44 public bodies, such as Local Authorities, the NHS, Fire and Rescue and others, must work together towards seven well-being goals.

### The seven well-being goals:

- 1** A prosperous Wales – where everyone has jobs and there is no poverty
- 2** A resilient Wales – where we're prepared for things like floods
- 3** A healthier Wales – where everyone is healthier and are able to see the doctor when they need to
- 4** A more equal Wales – where everyone has an equal chance whatever their background
- 5** A Wales of cohesive Communities – where Communities can live happily together
- 6** A Wales of vibrant culture and thriving Welsh language – where we have lots of opportunities to do different things and where lots of people can speak Welsh
- 7** A globally responsible Wales – where we look after the Environment and think about other people around the World



# Consultation Findings – fulfilling the 7 goals

- A prosperous Wales
- A resilient Wales
- A healthier Wales
- A more equal Wales
- A Wales of cohesive communities
- A Wales of vibrant culture and thriving Welsh language
- A globally responsible Wales

# A Prosperous Wales

“An innovative, productive and low carbon society which recognises the limits of the global environment and therefore uses resources efficiently and proportionately (including acting on climate change); and which develops a skilled and well-educated population in an economy which generates wealth and provides employment opportunities, allowing people to take advantage of the wealth generated through securing decent work”

WBFGA 2015.

*“Sharing – it is like a bank of money.”*

(Excerpt from workshop)

## ...Sharing the Value

There is scope for collaboration with public institutions, industrial and commercial sectors and community groups. The Museum could facilitate networking and collaboration between various stakeholders through a programme of events.

**Research.** Exploring further the potential medical and commercial use of plants cultivated in Wales (for example, daffodils for dementia research at Cardiff University).

**Horticulture and local plant-based economies.** Linking production to pharmaceutical research.

**Information.** In order to support public engagement and future innovations, there is a need for further information about what is contained within the Collection.

**Learning.** For future generations including Education for Sustainable Development and Global Citizenship.

**Is AC-NMW sharing the value of the Collection?**

# A Resilient Wales

“A nation which maintains and enhances a biodiverse natural environment with **healthy functioning ecosystems** that support social, economic and ecological resilience and the capacity to adapt to change (for example climate change).”

WBFGA 2015

*“Being resilient is about knowing what is around you and knowing how to see it.”*

*“The trigger that makes you want to learn. Need for inspiration. Cultivating interest with children. School is where it starts. If you inspire just one person you’ve succeeded...there is real potential with these things.”*

(Excerpts from workshop)

## ...Enabling learning about plants, people and places

**Enabling connections with plants.** *“A wonderful resource of plant materials which would be very interesting to the general public if it could be shared more exhibitions etc.”*

**Enabling connections with environments.** *“A great resource to connect local people with the natural environment and how important it is. Most people don’t know this exists.”*

**Enabling connections with people.** *“By linking up with sympathetic groups on social media more could be shared, such as horticultural/gardening groups, exhibiting groups.”*

(Excerpts from workshops)

**Is AC-NMW currently enabling connections?**

# A Healthier Wales

“A society in which people’s physical and mental well-being is maximised and in which choices and behaviours that benefit future health are understood.”

WBFGA 2015.

*“Anything you can do to open up eyes to plants.”*

*“A healthier Wales. A natural Wales.”*

(Excerpts from workshop)

## ...Supporting health through connections

**Social exchange:** *“Social exchange (volunteering) supports well-being and social interaction.”*

**Connection:** *“The number of people in Wales who don’t speak to people in a day. Supporting mental health through being involved.”*

**Physical activity:** *“Society has changed it has become narrower and narrower. People need to be more active. People sit on their bottoms. It needs to more active!”*

**Engaging with nature and learning about plants as food and medicine:** *“children don’t know where plants come from. This material could help them learn.”*

(Excerpts from workshops)

Is AC-NMW currently supporting health?

# A More Equal Wales

“A society that enables people to fulfil their potential no matter what their background or circumstances (including their socio-economic background and circumstances).”

WBFGA 2015.

*“It is for Wales, for everyone. But up until now we didn’t know. For 30 years.”*

(Excerpt from workshop)

## ...Accessing the Collection – physically and digitally

*“It would be sad if just stored in a box sitting. Passing on info...should be sharing information.”*

*“It is not wheelchair accessible. You could make a film about ‘behind the scenes’. Accessing the stacks.”*

*“It is sad that they are just sitting in the drawer.”*

*“There needs to be more information about the Herbarium and the Collections. Opportunities to come and visit. Sharing.”*

The Youth Group said it could feel like it was *“being hoarded by the few”* appealing to more than one faction/group.

(Excerpts from workshop)

**Is AC-NMW enabling access to the Collection for all?**

# A Wales of Cohesive Communities

“Attractive, viable, safe and well-connected communities.”

WBFGA 2015.

*“Cooking brings people together, sharing ingredients and sharing company. Everyone eats. Whether Arabic, Indian.”*

(Excerpt from workshop)

## ...Connecting through Cultures and Practices

Several groups spoke about how food products and medicinal plants are a way of bringing cultures together.

*“More events and access would be great. Talks?”*

*“By linking up with sympathetic groups on social media more could be shared, such as horticultural and gardening groups, exhibiting groups.”*

(Excerpts from workshop)

The Collection can bring people together through shared interests such as food, medicine and art.

Is AC-NMW bringing people together through the Collection?

# A Wales of Vibrant Culture and Thriving Welsh Language

“A society that promotes and protects culture, heritage and the Welsh language, and which encourages people to participate in the arts, and sports and recreation.”

WBFGA 2015.

*“...there are descriptive, poetic descriptions of plants in Welsh.”*

(Excerpt from workshop)

These could inspire new as well as engaged learners.

## ...Learning from the past to inform the future

**Traditions.** One person asked whether access to the Collection could inspire reconnection with traditional cuisines of Wales as well as connection with traditions of diverse cultures beyond Wales. Gardeners, spinners, weavers and knitters also expressed interest in how local dyes could be used for traditional and modern Welsh costumes and clothing.

**Innovations.** Another person suggested access to the Collection could inspire new uses of plants in culture (whether as food, medicine, fabric, dye or other).

Is AC-NMW enabling learning about the uses of plants?

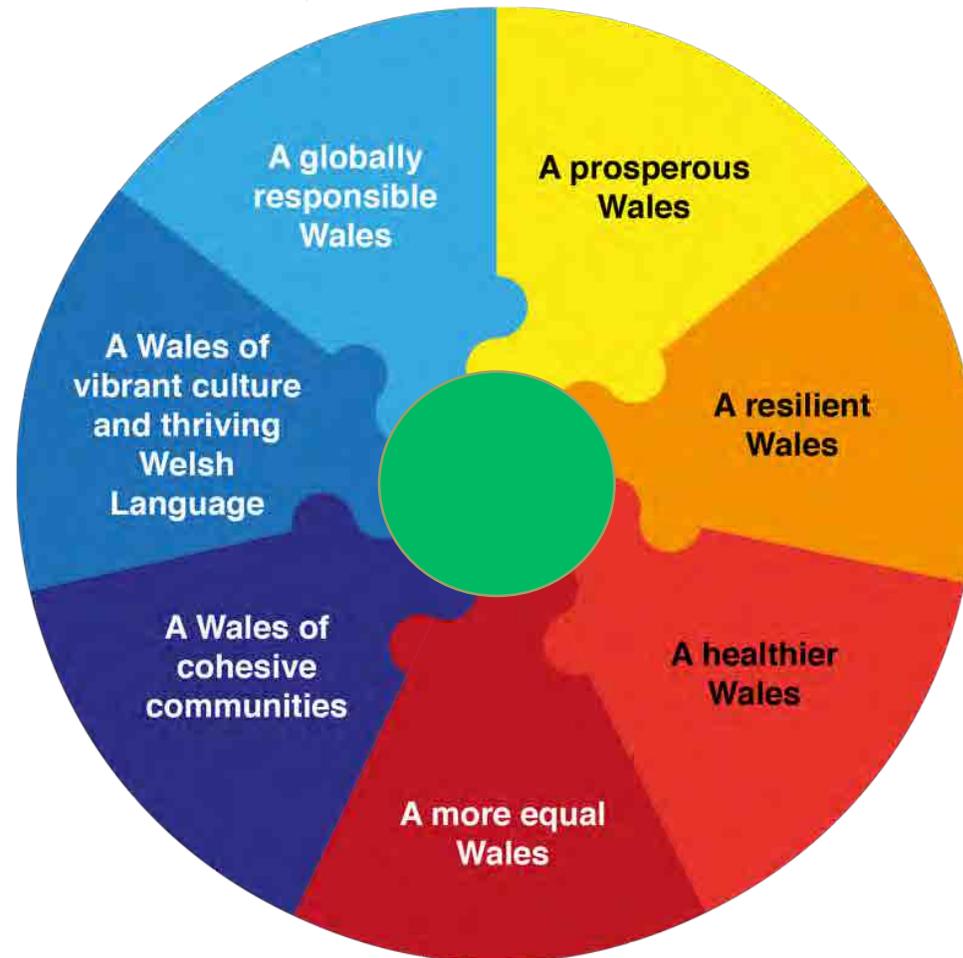
# A Globally Responsible Wales

“A nation which, when doing anything to improve the economic, social, environmental and cultural well-being of Wales, takes account of whether doing such a thing may make a positive contribution to global well-being.”

“Green is holding it all together”.

*(Excerpt from workshop)*

# Where is the green?



“Green is at the heart of this” - Weaver, Spinner and Gardener

## ...Integrating the Goals

*“Exhibiting the fantastic collection more widely. Link for Wales with other cultures. A way of linking in with other cultures.”*

*“Info here from the colonial past. Info relevant to global links. Make it accessible!”*

(Excerpt from workshop)

Participants suggested the WBFGA is missing green as a colour and concept.

**Is AC-NMW enabling learning about people, places and plants?**

# Recommendations

How the Economic Botany Collection can further societal appreciation of biodiversity and fulfil AC/NMW's duty of well-being under the Well-Being Future Generations Act (Wales), 2015?

- Sharing the values of the Collection.
- Enabling learning.
- Supporting health through connection.
- Enabling access to the Collections- physically and digitally.
- Connecting through cultures and practices.
- Learning from the past to inform the future.
- Integrating the Goals.

# Sharing the values of the Collection

## Raising awareness

**Outreach:** A programme of events including workshops, seminars, talks. Food festivals, arts and crafts workshops. Regular tours for community groups.

One of the women in the group had not been in to the museum and has lived in Cardiff for 11 years. She is now keen to bring her children in to look at the galleries. Another spoke of her daughter who works for National Gallery London and asked if there is a guide for forthcoming exhibitions and tours.

# Enabling learning

Currently there is no Botany based learning programme for KS1,2 or 3.

## Recommendations:

- Develop a series of **Learning Programmes** for schools.
- Work with **Creative Practitioners** to engage with the Collection through arts linking with the All-Wales Arts and Education Programme which has the aim “to integrate arts-based activities where appropriate in the training and support provided to schools to implement the Literacy and Numeracy
- Develop a programme of **activities** including workshops, seminars and talks for wider public .

# Supporting health through connection

## Recommendations:

**Social exchange:** Developing volunteer opportunities.

**Connection:** Develop a programme of regular activities and a 'Friends of the Collection' group.

**Physical activity:** Link with Bute Park, Insole Court, Roath Park and other green spaces.

**Engaging with nature and learning about plants as food and medicine:** linking with schools and forest schools.

# Accessing the Collections - physically and digitally

## Recommendations:

- Reconsidering **access** to the Collection for groups.
- Developing **the digital strategy**. Reaching out to different groups through the website, blog and social media such as twitter.

#botanicalmondays

#molluscmondays

@Cardiff\_curator

# Digitising the Collection

- i. Summary of the EBC online;
- ii. Themed sections of groups of specimens;
- iii. Complete online digitisation of Collection.

Search terms that could include Country of origin; use; region; ecosystem; cultural system. Search terms and categories enable exploration of certain cultures/groups and classifications of things without necessarily physical browsing.

This could make the Collection more relevant to a wider range of groups.

# Kew Online Economic Botany Collections

## Advanced search

Catalogue number: <input type="text"/>	Locality: <input type="text"/>
Entry book number: <input type="text"/>	Collector / Donor: <input type="text"/>
Family: <input type="text"/>	Description: <input type="text"/>
	Genus: <input type="text"/>
	Collector / Donor number: <input type="text"/>
<b>TDWG region:</b> Search all Abkhasiya Acre Adzhariya Afghanistan	<b>Kew use:</b> Search all Abortifacient Abrasives Adhesives Agricultural implements
<b>ISO country:</b> Search all Afghanistan Albania Algeria American Samoa	<b>TDWG use:</b> Search all ANIMAL FOOD ANIMAL FOOD - Camelidae ANIMAL FOOD - Equidae ANIMAL FOOD - Suiformes
<b>Plant part held:</b> Search all Aerial roots Arils Bark Bulbs/corms	<b>Storage Area:</b> Search all Archaeological Archaeological Large Bottles etc, outsize Bottles, boxes etc
Exclude Woods? <input type="checkbox"/> Specimens with Images <input type="checkbox"/>	
<input type="button" value="Clear"/> <input type="button" value="Search"/>	

Source: Kew Economic Botany Collection Online Catalogue, 2018.

# Missouri Botanic Garden Collection

Search

Genus:

Become a Master Gardener

Determine Your Growing Zone

Plant Finder

Plant Type: [dropdown]

Zone: [dropdown]

Sun: [dropdown]

Water: [dropdown]

Height From (feet): [input]

Height To (feet): [input]

Spread From (feet): [input]

Spread To (feet): [input]

Color: [dropdown]

Bloom Time: [dropdown]

Maintenance: Select a Maintenance [dropdown]

**Flowers**

- Showy
- Fragrant
- Insignificant
- Good Cut
- Good Dried

**Quick Search**

- Missouri Natives
- Missouri Natives Including Cultivars
- Plant of Merit
- Tried and Trouble-free

**Wildlife**

- Birds
- Hummingbirds
- Butterflies

**Plants that Tolerate**

- Rabbit
- Deer
- Drought
- Heavy Shade
- Erosion
- Clay Soil
- Dry Soil
- Wet Soil
- Shallow-Rocky Soil
- Black Walnut
- Air Pollution

**Other**

- Winter Interest
- Thorns

**Fruit**

- Showy
- Edible

**Leaves**

**Uses**

- Annual
- Ground Cover
- Hedge
- Shade Tree
- Street Tree
- Flowering Tree
- Water Plant
- Herb
- Vegetable
- Naturalize

Source: Missouri Botanic Garden online Collection, 2018.

# Youtube: Ethnobotany Video Series and Podcasts

## Introduction to Ethnobotany Video Series

### Video Library

- ʻawa & Cultural Conservation
- Alcoholic Beverages
- An Introduction to the Ethnobotany of the Canoe Plants: Five Trees Introduced from Polynesia
- Carving a Future: 10 Lessons for Sustainable Woodcarving Enterprises
- Crops in Pacific Island Cultures
- Cultural Diaspora and Culinary Ethnobotanical Knowledge
- Cultural Interactions with Spices and Herbs
- Culture and Ecology in Micronesia: Plant use and forest conservation
- E Kāne-au-loli-ka-

[Video Library](#) >

## Origins of Plant Uses: Mythology as Truth

### Education Modules

### Multimedia Resources for Ethnobotany Curriculum

[Video \(48 min\)](#)

[Audio](#)

[Documents](#)

## Origins of Plant Uses

"Myths" or cultural stories often contain truths and historical information. Myths are valid from the perspective of members of the culture regardless of the "validation" status given by scientists. Ethnobotanical myths commonly contain elements of conservation, plant origin/histories, considerations of relative importance of plants to the culture and comments on correct usage and respect for plants. This episode examines some of the ways that plants are incorporated within myths as means of organizing information about everything from observations of natural history to the meaning of life.

### Readings

Balick, M. & P.Cox. 1996. Plants, People, and Culture: The Science of Ethnobotany. Scientific American, New York. Pages 72-81

### Supplemental Readings

### On-Line Resources

Source: Ethnobotany Video Series, Google site 2018.

## ...Learning from the past to inform the future

**Traditions.** One person asked whether access to the Collection could inspire reconnection with traditional cuisines of Wales as well as connection with traditions of diverse cultures beyond Wales. Gardeners, spinners, weavers and knitters also expressed interest in how local dyes could be used for traditional and modern Welsh costumes and clothing.

**Innovations.** Another person suggested access to the Collection could inspire new uses of plants in culture (whether as food, medicine, fabric, dye or other).

Is AC-NMW enabling learning about the uses of plants?

# Connecting through Cultures and Practices

Exhibitions

Events

Festivals

Bringing the Collections in to the public domain.

Exploring the history of the Collection.

# ...Integrating the Goals

## Recommendations:

The Collection is about PLANTS, PEOPLE AND PLACES.

Integrate Aichi Targets particularly 1, 13, 18 and 19 into all of work done by Natural Sciences Department.

Explore rare, endangered species in Collection.

Integrate traditional/indigenous/local knowledges, innovations and practices into stories accompanying specimens.

Target 1: By 2020, at the latest, people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably.

Target 13: By 2020, the genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives, including other socio-economically as well as culturally valuable species, is maintained, and strategies have been developed and implemented for minimizing genetic erosion and safeguarding their genetic diversity.

Target 18: By 2020, the traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of indigenous and local communities, at all relevant levels.

Target 19: By 2020, knowledge, the science base and technologies relating to biodiversity, its values, functioning, status and trends, and the consequences of its loss, are improved, widely shared and transferred, and applied.

# NEF 5 Ways to Well-being

- How can these goals be implemented under well-being principles?



NEF 2008 Five ways to Wellbeing.

# Unexpected challenges and opportunities #1

Art and botany: value of artist-led approach and the connections between art and science.

- How can artists contribute to the shaping knowledge?
- How can artists shape our understanding and appreciation of nature
- How can artists open up a collection?

Contributes to further understanding of value (where value is understood to refer to nature's benefits to people (ecosystem services), including monetary and non-monetary dimensions

# Art and Economic Botany



Photo credit: PN 2018.

## Unexpected Challenges and opportunities #2

- Largely acquisitions from India, West Indies and South East Asia, East Africa. Predominantly acquired in the 1920s-1930s. Uncovering the stories, people and places attached to specimens.
- Tension between passive collecting and active collecting into the future.
- Time as a dimension when we consider values.

# Youth Engagement: Exploring Tea and China



Photo credit: Wiki Commons 2018.

# Final steps...

- A co-produced **Framework for Value** will inform the AC/NMW Collections Development Strategy regarding acquisition, display and activities.
- A mobile **'Pop-Up' Exhibition** will trial the FFV and target diverse audiences that might not normally engage with the EBC or Museum.
- **Journal article** for Environmental Values.
- Applying for funding for **seminar series** on valuing the EBC and connecting communities.

# References

- Xunaxi Cruz Velasco 2013 Participatory Action Research (PAR) for Sustainable Community Development. [postgrowth.org/participatory-action-research-par-for-sustainable-community-development/](http://postgrowth.org/participatory-action-research-par-for-sustainable-community-development/)
- Introduction to Ethnobotany Series <https://sites.google.com/site/introtoethnobotanyvideos/>
- International Union for Conservation of Nature 2018 <https://www.iucn.org/>
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- Missouri Botanic Gardens Plant Finder 2018 <http://www.missouribotanicalgarden.org/plantfinder/plantfindersearch.aspx>
- Mobile Museum <https://www.royalholloway.ac.uk/geography/research/mobile-museum/home.aspx> *Royal Holloway, University of London*
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# VALUING NATURE

Thankyou to everyone who contributed to the projec and thankyou to my home, host and Valuing Nature for this opportunity!



Sustainable Places  
Research Institute  
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