

Lecture to the Society of Cosmetic Scientists

22-24th.November 1992

**Anthony C.Dweck
Herbal Archivist and
Research Director**

Peter Black Toiletries, Cradle Bridge, Mortimer Street, Trowbridge, Wilts.

THE FUNCTION AND SUBSTANTIATION OF SOME NATURAL PLANT MATERIALS.

As an Herbal Archivist, I have now collected information on some 900 plant species and over 3000 sub species. Though this may sound very impressive, it pales into insignificance compared to some of the Chinese Court Herbals which list some five and a half thousand plants and their medicinal properties.

THE REASON FOR COLLECTING DATA

It would not be the first time that someone has asked why this information is collected in the first place. Well that is quite a reasonable question under the circumstances, since it does seem strange to be amassing all this knowledge, when much of it is available in one book or another already.

But let us look at the requirements.

Say for example, that Marketing decide they want to do an Oriental range. In the old days we would have spent days searching for relative books and then a few more days trying to fit the plant extracts to its possible usage.

Such an approach takes too much time and excellent plant materials could be missed, depending on which books were consulted, and the chances of finding sufficient substantive information quickly, is most unlikely.

The computer first offers potential plants that fit the description of the brief, and then from this list we can search for the specific benefits. Thus for a hair shampoo we would search for a plant under "hair" and "Oriental". If marketing specifically required a yellow flower, then we could include "yellow flower" in the search path.

The second and most important reason for collecting data is that of safety. The law requires that a company must be able to prove that it has not been negligent in verifying the safety of its products.

Some extracts are prohibited by law already, and these are all listed in the data base (for example Jaborandi, Bay Laurel and Foxglove). See Appendix I.

However, it has become increasingly obvious that this list is far from complete, and that there are many exciting plants that are extremely toxic which would not and should not be chosen for inclusion in cosmetic and toiletry products. It would be easy to pick up as many as three herbals that extol the virtues of a particular plant, and for not one of them to mention the unacceptable risk of using it.

NATURE OF THE DATA

The data is not restricted to topical application, and data on all medicinal and dietary properties is recorded. The most important aspect of any plant is its chemical content and its effects, and it is in this area that the paper presented will concentrate.

EFFECTS OF NATURAL MATERIALS

Natural products have been used for thousands of years, they were the basis of modern medicines. The same yardstick of modern medicines should not be used to compare natural materials.

Modern medicines work very quickly, they are concentrated, they are single components, the results are dramatic, the risks of side effects are very real.

Herbal preparations are slow, the result is measured in days rather than hours, in weeks rather days. Nature does things slowly, it is a blend of synergistic chemicals, it does it mildly and it generally does it without side-effects. It is better at preventing conditions from developing in the first place than rapidly curing them.

The growth of interest in natural plant materials continues with little sign of abatement. The consumer has developed an understanding of herbs and extracts that pushes the cosmetic industry to search for more and more exotic materials to tempt and satisfy those demands.

The more obscure the plant chosen, the harder it becomes to justify the use of the material on the grounds of efficacy and benefit.

SOURCE OF DATA

Data comes from a number of sources. It comes from published papers, herbals and data bases. Another valuable source is from the producers of natural extracts, though it has to be said that in many cases these sources can be extravagant with the promised effects.

It is impossible to give a full reference account for each of the materials discussed, but as a guide, the library of reference books used to compile the presentation has been attached in Appendix II.

THE VISUAL MATERIAL

The slide material is shown in Appendix III

THE PLANTS DISCUSSED

1. Achillea millefolium

Common names:- Yarrow, Milfoil

Part used:- Whole herb

Effects:- Used on sores, wounds, skin diseases, ulcers, inflammations, skin infections, rashes, to prevent baldness.

Chemicals present:- essential oil, achillein, stachydrine, choline, glyco-collbetain, poltines, apeginine, achilline, matricine, proazulenes, inuline, ascorbic acid, antibiotic substances, tannins, aconitic acid, asparagine, waxy oil, an enzyme, gum, benzaldehyde cyanhydrin-glycoside, flavones. The azulene content can be up to 40% or more.



2. Alchemilla vulgaris

Common names:- Lady's Mantle, Lion's Foot

Part used:- Fresh root, flowering stems and leaves

Effects:- Used as astringent, for leucorrhea, wounds, to stop bleeding, on cuts and abrasions, soothing, anti-inflammatory.

Chemicals present:- tannins, essential oils, saponins, bitter compounds, salicylic acid, gallic acid, fatty acids, sterols, amino acids.

3. Amaranthus caudatus

Common names:- Love-lies-Bleeding, Velvet Flower, Red Cockscomb, Prince's feather, Balder Herb, Floramor, Flower Gentle.

Part used:- Leaves, flowers

Effects:- tonic, demulcent, astringent, cooling properties, as a wash for ulcers and skin problems, reduce tissue swelling.

Chemicals present:- Mucilage, sugars, saponins.

4. Anemone coronaria

Common names:- Anemone

Part used:- not known

Effects:- may cause skin irritation

Chemicals present:- not known with certainty

5. Anthemis nobilis

Common names:- Roman Chamomile

Part used:- dried flower heads

Effects:- Antispasmodic, antiseptic, wound healing, sedative, anti-inflammatory, tonic.

Chemicals present:- azulene and some similar materials found in German Chamomile (see later)

6. Aquilegia vulgaris

Common names:- Columbine, Aquilegia

Part used:- root, flowers and leaves

Effects:- antiseptic, astringent, weakly sedative, used on rheumatic aches and pains, itchy or scabby skin, skin diseases.

Chemicals present:- cyanogenic glycosides, aquilegine, emulsin, enzymes.

7. Arctium lappa

Common names:- Greater Burdock

Part used:- root

Effects:- promotes growth of hair, treats skin disorders, used on skin eruptions, boils, dry scaly skin, eczema, psoriasis and skin infections. Regulates the sebaceous function.

Chemicals present:- inulin (a polysaccharide), glycosides (arctine), fatty oils, essential oil, polyphenols, tannins, sterols, some amino acids.

8. *Armeria maritima*

Common names:- Thrift, Sea Pink

Part used:- flowers

Effects:- antiseptic, some antibiotic action, may cause irritation.

Chemicals present:- iodine, fluorine, bromine, salt, plumbagone, naphthaquinone, mucilage.

9. *Bellis perennis*

Common names:- Daisy, Bruisewort, Bairnwort

Part used:- flowers

Effects:- for bruises, reduce swelling, burns, stiffness and soreness, wounds, skin disorders, spots. It is emollient and ophthalmic.

Chemicals present:- saponins, essential oil, tannins, mucilage, flavones, a bitter compound, resin.

10. *Borago officinalis*

Common names:- Borage, Bugloss, Burrage

Part used:- Leaves, seeds

Effects:- used as eyewash, in inflammation, demulcent, emollient, maintain or restore healthy skin, reduce moisture loss from the skin,

Chemicals present:- mucilages, tannin, essential oil, GLA and triglycerides in the oil, tannins,

11. *Brassica napus*

Common names:- Rape

Part used:- Seeds

Effects:- source of emollient oil, used as basis of vegetable derived ingredients

Chemicals present:- glycoside (gluconapine), erucic acid, various essential oils, fatty oil

12. Cakile maritima

Common names:- Sea Rocket

Part used:- leaves

Effects:- used as a salad vegetable

Chemicals present:- no data available at the present time

13. Calendula officinalis

Common names:- Marigold, Calendula

Part used:- leaves, flower petals

Effects:- Used for Athlete's foot, fungal infections of the nails, psoriasis, varicose veins, wounds, ulcers, burns, scalds, sprains, bruises and stings. Antiseptic, cicatrising, cleansing, anti-inflammatory, styptic, emollient.

Chemicals present:- Carotenoids, resin (calendulin), essential oil, sterols, flavonoids, bitter principle, saponin, amyryl, taraxasterol, oleanolic acid, xanthophyll and triterpene-saponins, tannins.

14. Calluna vulgaris

Common names:- Heather, Ling

Part used:- flowers

Effects:- Used in skin problems, wound healing, acne as a cleanser, remove freckles, on cutaneous eruptions, shingles, antiseptic in wound cleansing

Chemicals present:- flavone glucosides, quercitrin, myricitrin, arbutin. 7% tannin, and an alkaloid ericodin, silicic acid and resin, citric and fumaric acids, arbutin, tannins, an oil, ericinol, a resin, ericoline.

15. Campanula persicifolia

Common names:- Harebell

Part used:- root

Effects:- starchy gum used as glue, cooked as vegetable

Chemicals present:- starch-like compounds

16. Centaurea cyanus

Common names:- Cornflower, Batchelor's Button, Bluebonnet, Bluebottle, Blue Centaury, Blue Cyani, Hurtsickle, Blue-Blow

Part used:- flowers

Effects:- Used as an eyewash, inflammation of the eyes, weak eyesight, wounds and skin ulcers, hair tonics, bruises

Chemicals present:- sterols; cyanin; cyanin chloride and fragasin, organic pigments (anthocyanins) -principally cyanidin - a glycoside (cichoriin), saponins, mucilage and tannins, a bitter compound centaurine (also called cnicine, from **Cnicus** the Blessed Thistle), some traces of heteroside, cichoriin.

17. Centaurea scabiosa

Common names:- Greater Knapweed, Knapweed, Common Knapweed

Part used:- roots, seeds

Effects:- Used on cuts, bruises

Chemicals present:- plant is not completed in data files

18. Chenopodium album

Common names:- Fat Hen

Part used:- leaves, seeds

Effects:- cleanses and heals skin sores. Source of rich oil from the seeds which are nutritious.

Chemicals present:- leaves contain iron, vitamins and minerals. Data still being collected.

19. Clematis recta

Common names:- Clematis

Part used:- leaves, fresh flowers

Effects:- used as a wash for infected skin eruptions, inflammations of the ganglia, rheumatism.

Chemicals present:- bitter compound protoanemonine, clematitol glucoside, clematidin.

20. *Convolvulus recta*

Common names:- Lesser Bindweed

Part used:- flowering plant, rootstock.

Effects:- used in fevers and as a purgative, helps reduce the inflammation of mucous membranes.

Chemicals present:- data not currently available

21. *Crithmum maritimum*

Common names:- Samphire, Sampier, Sea Fennel, Crest Marine

Part used:- whole plant, growing tips

Effects:- makes an excellent, aromatic pickle, used in obesity, choleric, vermifugal, remineralising. One reference only says bacteriostatic, anti-inflammatory, cleanses epidermis.

Chemicals present:- mineral salts, oils, volatile oils, iodine, vitamin C, anethol and fenchol, pectin, sulphates, pinene, eugenol, carvacrol and dilapiol.

22. *Cydonia japonica*

Common names:- Quince, Japanese Quince, Japonica

Part used:- fruits and seeds

Effects:- soothing, demulcent, for irritations of mucous membranes, eye lotions, burns, eye inflammations, chapped lips, hair fixative, wounds, ulcers, chilblains

Chemicals present:- mucilage (cydonin), fatty oil, amygdalin, tannin, vitamin C, pectin

23. *Cytisus scoparius*

Common names:- Broom

Part used:- flowers

Effects:- use against head lice, not for cosmetic use

Chemicals present:- sparteine sulphate, scoparin, tannins, essential oil, bitter compounds

24. *Daucus carota*

Common names:- Carrot

Part used:- root

Effects:- stimulates the production of sebum, accelerated the formation of skin tissue, used for dry scaly skin, clears complexion, softens blackheads, sores, ulcers, eye problems, acne.

Chemicals present:- provitamin A, crystallisable and uncrystallisable sugar, a little starch, extractive gluten, albumen, volatile oil (on which the medicinal properties of the root depend and which is fragrant, aromatic and stimulating), vegetable jelly or pectin, saline matter, malic acid and a peculiar crystallisable, ruby-red neutral principle, without odour or taste, called carotin, vitamins A, B, and C and contains small amounts of E and K, as well as phosphorus, potassium and calcium.

25. *Dicentra spectabilis*

Common names:- Bleeding Heart

Part used:- dried tubers

Effects:- chronic cutaneous affections

Chemicals present:- alkaloids: corycavine, bulbocapnine and corydine; corydaline is a tertiary base; bulbocapnine is present in largest amount and was originally called corydaline. Corydine is a strong base found in the mother liquor of bulbocapnine and several amorphous unnamed bases have been found in it. All these alkaloids have narcotic action. Protopine, first isolated from opium, has been found in several species of **Dicentra**

26. *Dipsacus fullonum*

Common names:- Teasel

Part used:- the herb

Effects:- used for eye ailments, styes, whitlows on fingers, reducing facial wrinkles, inflammation of the skin

Chemicals present:- insufficient data at the present time.

27. *Epilobium angustifolium*

Common names:- Rosebay Willowherb, Fireweed, Flowering Willow, French Willow, Persian Willow, Rose Bay Willow, Blood Vine, Blooming Sally, Purple Rocket, Wickup, Wicopy, Tame Withy

Part used:- flowers, root

Effects:- haemostatic, demulcent, astringent, tonic and cutaneous skin care problems, emollient, used cosmetically on reddened and delicate skins.

Chemicals present:- pectin, mucilage, tannins (up to 20%), mucilage, flavones, sugars, and vitamin C

28. *Equisetum arvense*

Common names:- Horsetail, Equisetum, Shavegrass

Part used:- Whole plant

Effects:- helps to keep the skin, hair, nails and teeth healthy, preserves the natural elasticity in the skin, restoring skin tone, keep the hair healthy and strong, soothe skin irritations and help to heal minor abrasions, soothe puffy eyelids, healing wounds and soothing chilblains

Chemicals present:- silicic acid and water soluble silicic compounds; saponins; phytosterol; flavonoids; aconitic acid; traces of alkaloids, nicotine, palustrine and palustrinine

29. *Filipendula ulmaria*

Common names:- Meadowsweet, Queen of the Meadow

Part used:- root, flowers

Effects:- restores elasticity to muscle, reduce rheumatic pain in muscles and joints, wash for wounds and sore eyes, astringent, used to bathe cuts, scratches and abrasions.

Chemicals present:- contains (in the form of a glycoside) a salicylic aldehyde, spireine; also methyl salicylate, gaultherine, 10% tannin and a sugar, volatile oil, also methyl salicylate; vanillin, heliotropin, ethyl benzoate; also flavonoid glycosides including spiraeoside; sugars; mineral salts.

30. *Fucus serratus*

Common names:- Serrated Wrack, Seaweed

Part used:- whole plant

Effects:- in hair care is said to improve split ends and enhance the condition of hair that has been damaged by frequent bleaching or dyeing. Stimulate the hair and scalp. Combines with the protein in the hair by means of ionic interaction and so acts as a protective moisturising agent, increasing hair lustre and softness and decreasing its electrostatic charge. Treated hair has more body and is less fly away. Beneficial in anti-cellulite preparations, and it has been used in a number of slenderising products for the hips, thigh and neck areas. Pronounced moisturising effect on the skin, softens the hands and body, and produces soothing face packs or masks. An emollient with smoothing and anti-inflammatory properties. It acts as a moisturiser by its hydrating and protective action of forming a layer on the skin that reduces loss of skin moisture through evaporation. Tissue renewal action, reduces facial wrinkles. In another reference the anti-wrinkle effect is attributed to the silicon that seaweed contains.

In cases of psoriasis (where it can be used as a wash) and for the treatment of seborrhoeic skin conditions. Soothing and skin softening such as the elbows, knees and feet. In the treatment of acne, improve the blood circulation in the skin. The iodine in seaweed exerts a positive action on inflammations and secretions of the skin whilst having a disinfectant property. Speeds up the healing process, improves healing of burns and other wounds when incorporated into dressings, beneficial for sprains and bruises.

Chemicals present:- vitamins which include A (beta-carotene), vitamin B1 (thiamine), vitamin B2 (riboflavin), B3 (niacin), B5 (pantothenic acid), B12 (cobalamine), C, D, E, K, folic acid, choline. Minerals: iodine, calcium, phosphorus, iron, sodium, potassium, nitrogen, magnesium, sulphur, chlorine, copper, zinc and manganese. Trace amounts one finds barium, boron, chromium, lithium, nickel, silver, titanium, vanadium, aluminium, silicon, strontium, molybdenum, cobalt, bromine, lead and arsenic. Amino acids: serine, alanine, arginine, glycine, lysine, asparagine, valine, leucine, isoleucine and tryptophan. Sugars (polysaccharides): fucose, mannose, xylose, galactose and glucose. Other components: alginic acid, alginates, carrageenan, agar-agar, proteins, cellulose, mucilage, mannite, fucitol, algin, mannitol, alginates, fucosterol, iodine-protein complexes, uronic acid derivatives, fucose polymers, sulphated polygalactosides.

31. *Fucus vesiculosus*

Common names:- Bladderwrack, Seaweed

Part used:- see above

Effects:- see above

Chemicals present:- see above

32. *Galium verum*

Common names:- Lady's Bedstraw

Part used:- dried flowering plant

Effects:- used as an application to wounds and to cutaneous eruptions, antiseptic, treat slow-healing wounds, skin rashes and ulcerous conditions, spots and pimples, swollen and walk-weary feet

Chemicals present:- silicic acid; the presence of saponin is not proved, glycosides, traces of an essential oil, enzymes parachymozine

33. *Hedera helix*

Common names:- Ivy

Part used:- leaves

Effects:- used to treat rheumatism, arthritis and bruises, promote dilation of the blood vessels and sweating, to treat corns and swollen feet, for ulcers, enlarged glands, boils and abscesses, slow-healing wounds, external wash for sores, burns, cuts, dandruff and other skin problems

Chemicals present:- hederacoside; hederagenine, tannins, a saponin (hederin), its aglycone (hederagenin), organic acids and iodine, chlorogenic and caffeic acids, flavonoids

34. *Helianthus annuus*

Common names:- Sunflower

Part used:- Seeda

Effects:- emollient, soothing effect on the mucous membrane, relieves the pain of arthritis, used on bruises, externally on cuts and bruises, on wounds

Chemicals present:- gamma linoleic acid, helianthitanic acid (a tannin), small quantities of inulin and large amounts of levulin, arachidic acid, behenic acid, linoleic acid, oleic acid, palmitic acid, stearic acid, vitamin E, albumin; lecithin; betaine; choline. The plant contains potassium nitrate, potassium carbonate, tannins, a flavonic glycoside quercimetricin, histidine. The seeds contain 30% of an excellent fatty oil, albumin, choline, lecithin, betaine and tannin

35. *Hyacinthoides non-scripta*

Common names:- Bluebell

Part used:- bulb

Effects:- styptic, substitute for starch, gum

Chemicals present:- inulin, mucilage

36. *Hypericum calycinum*

Common names:- St. John's Wort, Hypericum

Part used:- whole plant, flowers

Effects:- cicatrising action on wounds, cuts and bruises. Used as an application on wounds and haematoma, antispasmodic, astringent, nervine, vulnerary, burns, wounds, sores, bruises and other skin problems, varicose veins and mild burns, inflammation reducing, soothing, pain reducing

Chemicals present:- tannins, essential oil with a-pinene and sesquiterpene., hyperin, rutin, quercitrin, hypericin and pseudohypericin, nicotinic acid and nicotinamide, choline, fat, pectin, phlobaphene, rhodane

37. *Jasminium officinale*

Common names:- Jasmin, Jasmine, Yasmine

Part used:- Flowers, Whole plant

Effects:- used to treat conjunctivitis, skin ulcers and tumours, increased β -wave activity and the amplitude of an attention-related brain wave, the contingent negative variable (CNV), complaints of the eye, external application for ringworm, spots and pimples, and dissolves swellings and lumps on the skin

Chemicals present:- 0.5% of related indole alkaloids including gelsemine, sempervirene, gelsemicine, gelsedine and gelseverine. The plant also contains beta-methyl asculetin, pentatriacontane and the mono-methyl ether of emodin. The compound present in the highest concentration is benzyl acetate. Other compounds include phenylacetic acid, linalool, benzyl alcohol, methyl anthranilate, methyl heptenone, farnesol, cis-3-hexenyl acetate, cis-linalool oxide, trans-linalool oxide, nerolidol, cis-jasmone, trans-methyl jasmonate, cis- and trans-ethyl jasmonates, jasmolactone, δ -jasmonic acid lactone, and methyl dehydrojasmonate.

38. *Knautia arvensis*

Common names:- Field Scabious

Part used:- the whole plant, flowers

Effects:- chronic skin conditions, eczema

Chemicals present:- tannins, a bitter compound, data incomplete at the present time.

39. *Lavandula angustifolia*

Common names:- Lavender

Part used:- flowers, plant

Effects:- Fungal and other skin infections, rosacea, pruritis, scars, burns, varicose veins, phlebitis, antiseptic, antispasmodic, antirheumatic, heals wounds, good for acne, burns, wounds and insect bites, alopecia, bites, boils, dermatitis, eczema, inflammation, psoriasis, rejuvenation, and sunburn

Chemicals present:- - alcohols (under 50%): the main alcohol is lavandulol, plus borneol, terpineol, geraniol and linalol, the last mostly in esterified form (linalyl acetate).

- esters (48-52%): directly derived from the alcohols - lavanylyl acetate, linalyl acetate, bornyl acetate.

- oxides (2-3%): 1,8 cineole, linalyl oxide, caryophyllene oxide.

- coumarin (minute amounts): heniarine, umbelliferone, santonine.

- terpenes (less than 5%): myrcene, limonene, ocimene.

- sesquiterpenes (about 3%): caryophyllene.

There is also a small amount of the ketone camphor, and a minute amount of methyl heptyl ketone (which only exists in the essential oil after extraction by distillation), as well as traces of lactones and aldehydes.

Alcohols and esters are the predominant molecules present in

40. *Lavandula officinalis*

Common names:- Lavender

Part used:- as above, flowering tops

Effects:- as above

Chemicals present:- similar to the above

41. *Lavatera olbia*

Common names:- Tree Mallow

Part used:- roots, leaves

Effects:- antiphlogistic, emollient, tonic for blemished and sensitive skins, remove inflammation, emollient and calming, useful for eczema, skin inflammations, irritated and itching skin, wounds and ulcers

Chemicals present:- starch, pectin, mucilage, sugar, fats, tannin, asparagine, and calcium oxalate, mucilage content is generally considered to be 25-35% but that of the homogeneous mucilaginous polysaccharides is much lower. Mucilage composed of l-rhamnose, d-galactose, d-galacturonic acid, d-glucuronic acid in the molar ratio of 3:2:3:3, with a molecular weight of about 34000 (as the ammonium salt).

42. *Linaria vulgaris*

Common names:- Toadflax, Flaxweed, Pennywort, Butter and Eggs

Part used:- flowers

Effects:- applied to skin irritations, skin diseases and scrofula, skin sores and ulcers, anti-inflammatory properties

Chemicals present:- phytosterol, mannitol, fat, sugar, tannin, colouring matter, mucilage, glycosides; linarin and pectolarin

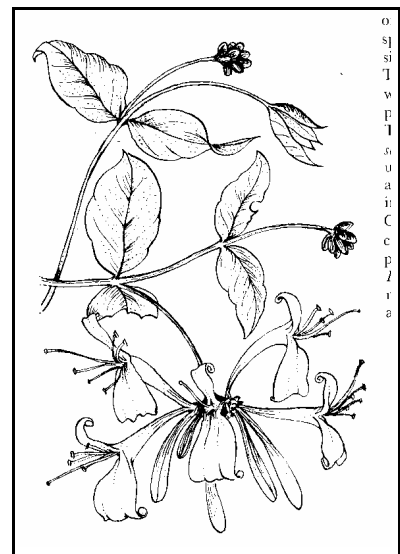
43. *Lonicera periclymenum*

Common names:- Honeysuckle

Part used:- dried flowers and leaves

Effects:- to fade freckles on the face, antiseptic, slightly astringent, for skin infections, sunburn, reduce swellings (particularly in mumps), to sores, wounds, ulcers will promote healing and allay heat

Chemicals present:- mucilage; an amorphous glucoside; salicylic acid; sugars; invertin; bitter compound (xylosteine), pectin



44. Malva sylvestris

Common names:- Common Mallow

Part used:- see Tree Mallow

Effects:- as for Tree Mallow

Chemicals present:- similar for Tree Mallow

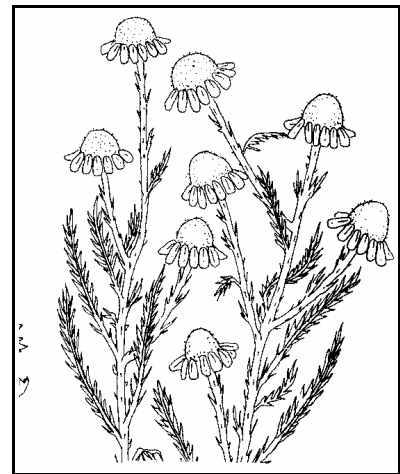
45. Matricaria recutita

Common names:- German Chamomile

Part used:- flowering tops

Effects:- antispasmodic, antiseptic, wound healing, sedative related, anti-inflammatory, tonic, soothing for conjunctivitis and sore eyes.

Chemicals present:- chamazulene, alpha-bisabolol, an unsaturated monocyclic sesquiterpene alcohol, apigenin and angelic acid, coumarins (umbelliferone), matricaria-proazulene (guaianolide) named matricine. Other components of the essential oil are (-)-alpha-bisabolol (INN: Lecomenol), the bisabolol oxides A and B, cis-and trans-en-yn-dicycloether.



Other important constituents of *Matricaria chamomilla* are many flavonoids (among other apigenin, luteolin, quercitrin, as well as their corresponding glycosides), chlorogenic acid, umbelliferone and herniarin (coumarin-compounds).

46. Matricaria recutita

Common names:- German Chamomile

Part used:- see above

Effects:- see above

Chemicals present:- see above

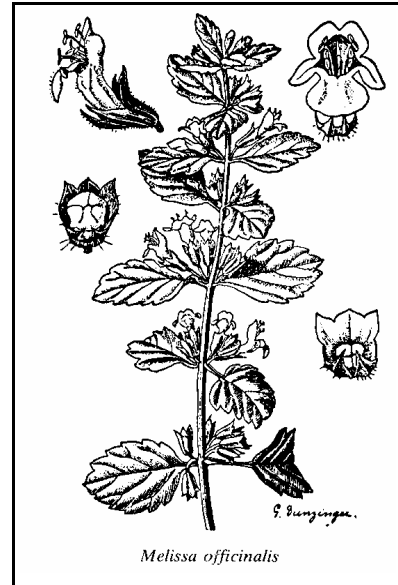
47. *Melissa officinalis*

Common names:- Melissa, Lemon Balm

Part used:- flowering tops and leaves

Effects:- heal and soothe minor cuts and abrasions, mild antiseptic properties, soothe irritations of the skin and protect it from infections

Chemicals present:- monoterpene aldehydes citral and citronellal, monoterpene alcohols geraniol, linalool and citronellol. It also contains neral, geraniol, b-oleanolic acid, geranyl acetate, geraniol and nerol. Rosmarinic acid, chlorogenic acid, caffeic acid, protocatechutannic acid, cryptochlorogenic acid, neochlorogenic acid, and caffeic acid derivatives with glycoside like bonds. Other constituents include a bitter, succinic acid, wax, ursolic acid, triterpenes of the lupane, oleanane and ursane types. Substances which show particularly marked sedative effects are caryophyllene, linalool, citrals, limonene and eugenol



48. *Mentha spicata*

Common names:- Spearmint

Part used:- leaves and flowering tops

Effects:- cooling and slightly anodyne, for itching skin conditions, anti-inflammatory, application to wounds, treat skin complaints

Chemicals present:- essential oil with menthol, menthone, jasmone, tannin, bitter principle,

49. *Myosotis arvensis*

Common names:- Forget-me-not

Part used:- whole plant

Effects:- cicatrizer, ophthalmic and astringent

Chemicals present:- tannin, resin, mucilage and salts

50. *Oenothera biennis*

Common names:- Evening Primrose

Part used:- seeds, occasionally whole plant

Effects:- used to treat eczema, brittle nails and general skin dryness, nappy rash and psoriasis, skin irritations and rashes, skin eruptions, increases skin's resistance to UV exposure, increases blood flow through the tiny blood capillaries of the skin, atopic eczema, helps the skin to retain moisture

Chemicals present:- essential fatty acids (EFA), of which two are of particular importance - gamma linoleic acid (GLA) and linoleic acid.

51. *Ononis repens*

Common names:- Restharrow

Part used:- root, flowers

Effects:- delays the healing of wounds (one reference only), arthritis and chronic skin disorders

Chemicals present:- an essential oil, a flavonic glycoside (ononine), onocerine, ononide, saponin, spiroisin, ethereal compound, fatty oil and tannin

52. *Origanum onites*

Common names:- Marjoram

Part used:- leaves

Effects:- antiseptic action, astringent, varicose veins, gout, rheumatism, and stiff joints, application for sprains, bruises, rheumatic and muscular pain

Chemicals present:- α -terpinene, gamma-terpinene, 4-terpineol, sabinene, linalool, carvacrol, cis-sabinene hydrate and trans-sabinene hydrate with linalyl acetate, ocimene, cadinene, geranyl acetate, citral, estragole, eugenol, 3-carene, cis-sabinene, flavonoid glycosides (luteolin-7-diglucoside, apigenin-7-glucoside, diosmetin-7-glucuronide), tannins, caffeic acid, labiatic acid, rosmarinic acid, steroids (e.g. beta-sitosterol), triterpenoids (oleanolic acid, ursolic acid etc.) paraffins (e.g. n-triacontane), protein (ca 13%) vitamins (especially A and C) and others

53. *Papaver rhoeas*

Common names:- Red Poppy, Field Poppy

Part used:- flowers

Effects:- expectorant, some emollient action on the skin

Chemicals present:- anthocyanins, meocyanin and cyanidol; mucilage; traces of crystalline alkaloids, rhoeadine, rhoegenine and rhoearubine

54. *Plantago lanceolata*

Common names:- Plantain, Ribwort

Part used:- leaves

Effects:- remedy for wasp and bee stings, relieves irritation and pain, for nettle sting, mosquito bites, stops bleeding from minor cuts and abrasions. A strong infusion is a useful remedy for shingles and other skin problems. Lotion to bathe itching irritated areas until relief is obtained. Cleansing herb, closes the pores and refines coarse skin, furunculosis,

Chemicals present:- mucilage; a pentacyclic triterpene; oleanolic acid; a glycoside; aucubin (rhinanthin); the enzymes emulsin and invertin; potassium salts (to 0.5%); citric acid. The seeds contain a trisaccharide planteose; aucubin; choline; various organic acids.

55. *Plantago major*

Common names:- Greater Plantain

Part used:- see Ribwort

Effects:- see Ribwort

Chemicals present:- see Ribwort

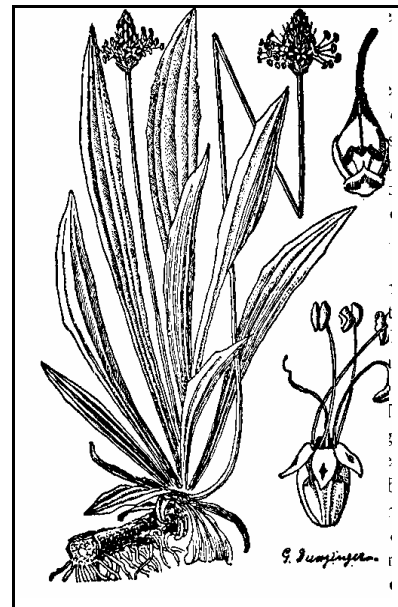
56. *Polemonium coeruleum*

Common names:- Jacob's Ladder

Part used:- whole plant

Effects:- astringent, certain inflammatory diseases

Chemicals present:- data not available at the present time



57. *Primula vulgaris*

Common names:- Primrose, Primula

Part used:- leaves, flowers, root

Effects:- skin problems and blemishes, help prevent or reduce wrinkles, said to remove spots, skin wounds, reduces the swelling of bruises.

Chemicals present:- saponins, the sapogenins of which are based on the triterpene-aglycones priverogenin A and B, and about 0.1% volatile oil. The root is predominantly used and contain 5-10% saponin, and also glycosides and 0.25% of a volatile oil

58. *Pulmonaria officinalis*

Common names:- Lungwort

Part used:- leaves

Effects:- astringent, demulcent and emollient, used for all kinds of wounds, an effective eye wash for tired eyes

Chemicals present:- phytsterol, mucilage, silicic acid, carotene, saponin and vitamin C

59. *Pyrus malus*

Common names:- Apple Blossom

Part used:- flowers

Effects:- none reported

Chemicals present:- unknown

60. *Ranunculus bulbosus*

Common names:- Buttercup, bulbous buttercup, acrid crowfoot, crowfoot, crowfoot buttercup, Cuckoo buds, Frogwort, King's Cup, Meadowbloom, Pilewort, St. Anthony's Turnip

Part used:- roots, leaves, flowers

Effects:- used to remove warts, counter-irritant to sciatica and rheumatic pains, treatment of skin conditions (herpes, eczema, erysipelas, pruritis), arthritis and also rhinitis, piles, and haemorrhoids . Can be irritant at high doses.

Chemicals present:- anemonol

61. *Ranunculus ficaria*

Common names:- Lesser Celandine

Part used:- fresh herb

Effects:- relieves haemorrhoids or piles, for external abscesses, fresh juice to remove warts.

Chemicals present:- Vitamin C, probably contains traces of an acrid principle resembling or identical with anemonin, protoanemonin, anthemol; tannins

62. *Rosa canina*

Common names:- Wild Rose, Dog Rose

Part used:- the fruit

Effects:- see below

Chemicals present:- see below

63. *Rosa canina (frutus)*

Common names:- Rosehips

Part used:- the fruit

Effects:- tissue regeneration with good results in maintaining the tissue texture, skin freshness in ageing prevention and attenuation of scars and stains, effect in the skin cell membranes, the defence mechanisms, the growth and other physiologic and biochemical processes related to tissue regeneration - explain its tissue regenerating properties (scars, skin burns, early aging etc). Tested on cheloids, acne scars, multiple erythema, surgical scars etc, chapped hands and lips, anti-wrinkle agent and in body lotions to smooth the skin. It is also used as a moisturiser and in the treatment of burns, scars and ulcers and in hair preparations, especially for dry and damaged hair



Chemicals present:- Vitamin F, vitamin E, 5.5-6.0% of saturated fatty acids, about 15% of mono-unsaturated acids, such as oleic and palmitoleic acids, a high content of polyunsaturated fatty acids; 45% of the total fatty acid content is linoleic acid and 33% linolenic acid.

64. *Rumex acetosa*

Common names:- Sorrel

Part used:- leaves, stems,

Effects:- for skin infections, boils eczema and acne, psoriasis, swellings

Chemicals present:- 1.3% oxalate and oxalic acid, anthracene derivatives and Vitamin C, potassium oxalate, mucilage

65. *Rumex obtusifolius*

Common names:- Sorrel, Dock leaf

Part used:- see above

Effects:- see above

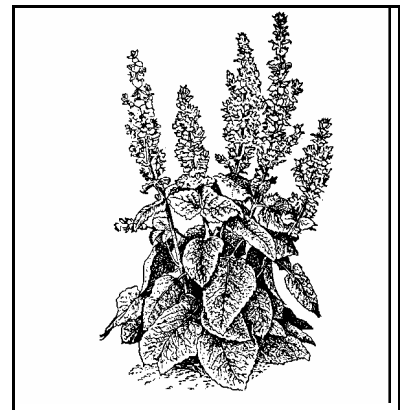
Chemicals present:- see above

66. *Salvia officinalis*

Common names:- Sage

Part used:-

Effects:- for dandruffs, loss of hair, fatty hair and skin, cellulitis, sluggish or congested ulcers and on wounds, astringent and anti-inflammatory, treat skin problems, for wounds, antifungal, antiseptic, anti-inflammatory, antiperspirant, protects the skin. heal skin lesions which will not heal, heal old festering wounds. Cited for use on boils, lesions, chilblains and treating sweaty feet



Chemicals present:- essential oils, saponin, tannins, picrosalvin (bitters), resin, fumaric acid, ursolic acid, oleanic acid, and other oxytriterpenic acid, germanicol, chlorogenic and caffeic acids, pentosene, wax and nicotinic acid, additionally a diterpenediphenol carboxylic acid, n-triacontane have been identified. Sage extract contains six flavones and eight flavone glycosides. Interesting amongst them is a substance which has an effect on tuberculosis bacilli and an estrogenic constituent.

The essential oil contains thujone, borneol, p-cymene, 1,8-cineole, d-camphor, d- and l-alpha-pinene, salvene, dipentene, a sesquiterpene, linalool and picrosalvin.

67. *Santolina chamaecyparissus*

Common names:- Cotton Lavender

Part used:- whole herb

Effects:- used as a wound herb, remedial rub for aches and pains and is also mildly insecticide, to heal ringworm and scab.

Chemicals present:- essential oil; bitter principle; unknown substances. More data required.

68. *Senecio aureus*

Common names:- Common Groundsel

Part used:- see Ragwort below

Effects:- see Ragwort below

Chemicals present:- see Ragwort below

69. *Senecio jacobaea*

Common names:- Ragwort, Stinking Nanny, St. James's Wort, Staggerwort, Ragweed, Dog Standard or Fireweed

Part used:- fresh plant, dried aerial parts

Effects:- for inflammation of the eyes, application to ulcers, wounds, antiseptic lotion for cleansing wounds, arthritis, myalgia and sciatica, dissolve swellings, treatment of all skin ailments, gatherings, inflamed areas, tumours - soft and hard - and all types of swellings. Also for boils, abscesses, whitlows.

Chemicals present:- alkaloids including jacobine, jaconine and jacodine, and flavonoid glycosides, senecionine

70. *Silene dioica*

Common names:- Red Campion

Part used:- no information available

Effects:- none reported

Chemicals present:- none reported

71. *Silene maritima*

Common names:- Sea Campion

Part used:- no information available

Effects:- none reported

Chemicals present:- none reported

72. *Solidago virgaurea*

Common names:- Golden Rod, Verge d'or, Solidago, Goldrute, Woundwort, Aaron's Rod

Part used:- leaves

Effects:- anti-inflammatory and aids wound healing. Externally the tisane is successfully used as a lotion or in compresses for wound healing, chronic eczema. The crushed leaves are used for wounds, sores and insect bites, cicatrization of old ulcers, astringent. It is used externally as a poultice or as an ointment to assist tissue healing, varicose ulcers, eczema and slow healing wounds.

Chemicals present:- volatile oil, tannin, saponins, flavonoids, and an astringent principle, various organic acids - mainly citric, tartaric and oxalic; unknown substances

73. *Tanacetum parthenium*

Common names:- Feverfew

Part used:- flower heads, leaves and sometimes the flowering stems

Effects:- soothes swellings and open wounds, applied locally relieves pain and irritation of insect bites. Made into a lotion by adding the tincture to distilled water and applying to the body, it protects against attack by flying insects

Chemicals present:- essential oil with camphor (so-called chamomile camphor), bitter compounds, tannins and mucilage. Essential oil containing camphor, terpene, borneol, various esters and a bitter substance. Parthenolide, pyrethrins and santamarin

74. *Taraxacum officinale*

Common names:- Dandelion

Part used:- leaves

Effects:- skin complaints and often an effective remedy in most forms of rheumatism, skin washes and face masks, decoction is applied to breast abscesses also boils etc. on other parts of the body. The juice is applied to remove warts. Eczema and all eruptions on the surface of the body, regeneration of both blood cells and tissue, soothing action on eczema, ulcers and distressed skin.

Chemicals present:- latex, inulin, iron, niacin, potash, vitamins A and C, vitamin B, amino acids, sterols, lactupicrine



75. *Thymus vulgaris*

Common names:- Thyme

Part used:- plant, leaves

Effects:- wound healing, antiseptic and deodorant. Thyme baths are said to be helpful for neurasthenia, rheumatic problems, paralysis, bruises, swellings, and sprains. A salve made from thyme can be used for shingles, for boils, sores and for hair loss, as a paint in ringworm, in eczema, psoriasis, broken chilblains, parasitic skin infections, burns.

Chemicals present:- thymol, carvacrol, cymene, pinenes, borneol, linalool.

76. *Trifolium pratense*

Common names:- Red Clover

Part used:- flowering tops

Effects:- relief from itching in skin disorders, specific for acne, boils and similar eruptions, eczema, skin problems especially with irritation, indicated for chronic skin disease. Specifically it is for eczema and psoriasis.

Chemicals present:- various phenolic glycosides including trifoliin and flavonoids, isoflavones such as biochanin A, formononetin, genistein, daidzein, pratensein, and trifoside, flavones, coumarins etc., trans- and cis- clovamide, phaselic acid, a galactoglucomannan, sugars, protein, a volatile oil containing furfural, resins, fat, minerals (particularly rich in magnesium, copper and calcium), phosphorus, vitamins etc.

77. *Trifolium repens*

Common names:- White Clover

Part used:- see Red Clover

Effects:- as above

Chemicals present:- as above

78. *Ulex europaeus*

Common names:- Gorse

Part used:- flowers

Effects:- some astringent action, flea repellent

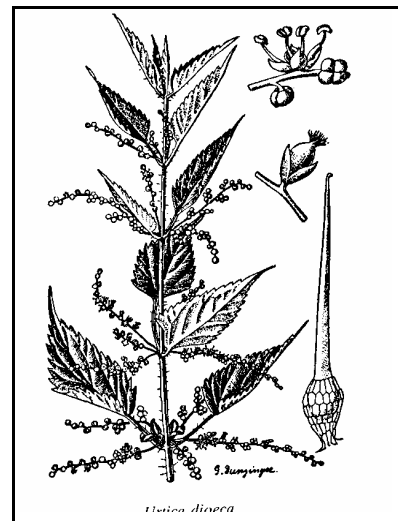
Chemicals present:- tannins. No further data available at the present time.

79. *Urtica dioica*

Common names:- Stinging Nettle

Part used:- leaves

Effects:- Externally it utilises the hyperaemia produced and the irritant effect achieved via the cutaneous nerves. It can be used to treat neuralgic and rheumatoid pain, particularly with degenerative and chronic arthritic conditions, such as lumbago and sciatic pain, chronic tendinitis, sprains and many other similar conditions. Included in foot baths to draw out impurities and ease tiredness. Astringent, tonic, it is also applied to burns and skin disorders because of its blood-purging attributes. Reputed to stimulate hair growth when applied to the scalp. To heal abrasions and irritations, and used to grow hair, cited for use in eczema. Recommended for cutaneous eruptions, infantile and psychogenic eczema, epistaxis, melaena.



Chemicals present:- formic acid as a major constituent, added to which there is hystamine, a high proportion of chlorophyll and iron, plant enzymes, many minerals and in the stinging hairs a nettle poison

80. *Verbascum densiflorum*

Common names:- Mullein

Part used:- leaves

Effects:- used to bathe painful haemorrhoids. Mullein oil can be used to stop irritation and relieve chilblains and haemorrhoids. It is soothing and softening and will help to heal painful bruises, effective remedy for boils, whitlows and virulent spots.

Chemicals present:- mucilage, saponins and tannins, hydrocarbons, ketone alcohols, beta-sitosterol and a triterpenic alcohol in addition to a number of related iridoids

81. *Vinca minor*

Common names:- Lesser Periwinkle

Part used:- flowering stems

Effects:- used for treating inflammatory skin conditions, good vulnerary plant, for healing bruises, astringent

Chemicals present:- Seven alkaloids have been isolated, also C19-C20 indole alkaloids, vincamine, tannins, saponins, pectin and organic pigments

82. *Viola riviniana*

Common names:- Violet

Part used:- leaves

Effects:- use in subduing acute inflammation, antiseptic, may be applied to wounds to stimulate healing, possibly acts as an antibiotic, compress for various swellings, use in skin conditions such as eczema, the treatment of skin diseases, soothing and healing, it is applied to slow-drying wounds, ulcers, rashes, for chronic and persisting skin conditions, scrofula, eruptions, children's eczema

Chemicals present:- glucosidal principles, derivatives of salicylic acid, all parts of the plant, particularly the rhizome, contain saponins; the subterranean stock also contains an alkaloid (odoratine). The flowers contain essence of violets, consisting of a blue pigment and an aromatic compound (irone).

83. *Viola tricolor*

Common names:- Wild Pansy, Heartsease, Garden Violet, Johnny Jumper, Step-mother, Love-in-Idleness, Call me to you, Three faces in a Hood, Heart of Trinity, Herb Constancy, Herb Trinitatis, Jack jump up and kiss me, Three face under a hood, Kit run in the fields, Stepfathers and Stepmothers and Butterfly Flower

Part used:- aerial parts, root, flowers

Effects:- promotes wound healing and relieve inflammations, use on eczemas, skin inflammations, micro-crust, acne and skin itching, has natural sun screening properties, for skin diseases, healing herb, can be used externally to soothe and relieve pain, for skin complaints, spots, pimples, heals sores and other skin ailments.

Chemicals present:- saponins, salicylates, a flavonic glycoside (violaquercetin) and other chemical components. Flower contains violanine, which is blue, and a coumarinic and delphinidic anthocyanoside, salicylic acid.

APPENDIX I

FORBIDDEN PLANT MATERIALS

According to the 1989 Cosmetic Safety Act

Schedule No.	Name of Substance	Translation
11.	Aconitine and its salts	
12.	Aconitum napellus (leaves, roots and galenical preps)	Monkshood
13.	Adonis vernalis and its preparations	Adonis
43.	Ammi majus and its galenical preparations	Bishopsweed
51.	Anamirta cocculus (fruit)	*****
57.	Apocynum cannabinum and its preparations	Cannabis
63.	Atropa belladonna and its compounds	Belladonna
129.	Calabar bean (see 547)	
130.	Cantharis vesicatoria and cantharides	*****
144.	Chenopodium ambrosioides (essential oil) or Mexican goosefoot	American wormseed oil
145.	Cherry laurel water (see 577)	
180.	Claviceps purpurea its alkaloids and galenical preparations	Ergot
187.	Colchicum autumnale and its galenical preparations	Autumn Crocus or Meadow Saffron
193.	Conium maculatum (fruit, powder, galenical preparations)	Hemlock
197.	Croton tiglium (oil)	Croton
198.	Curare and curarine	
212.	Datura stramonium	Thornapple or Jimsonweed (and its galenical preparations)
243.	Digitalis purpurea	Foxglove (digitaline and all of its heterosides)
379.	Hyoscyamus niger (leaves, seeds powder and galenical preparations)	Henbane
386.	Cephaelis ipecacuanha and related species (roots, powder and galenical preps.)	
396.	Juniperus sabina (leaves, essential oil and galenical preparations)	Savine
397.	Laurel oil	
398.	Laurus nobilis (oil from seeds)	Laurel
402.	Lobelia inflata and its galenical preparations	Lobelia
486.	Nux vomica and its preparations	Quaker Buttons Poison nuts
547.	Physostigma venenosum	Calabar bean
549.	Phytolacca spp and their preparations	Poke Root
553.	Pilocarpus jaborandi Holmes and its galenical preparations	Jaborandi
577.	Prunus laurocerasus	Cherry Laurel
579.	Pyrethrum album and its galenical preparations	Pyrethrum

585. **Rauwolfia serpentina** Indian Snakeroot alkaloids and their salts
589. **Schoenocaulon officinale** Lind. Sabadilla
(seeds and galenical preparations).
596. **Solanum nigrum** Black Nightshade and its galenical preparations
600. Squill and its preparations (see 649)
603. **Strophanthus** species Strophanthus
and their galenical preparations
605. **Strychnos** species and their galenical preparations
649. **Thevetia neriifolia** Juss. Thevetia tree nut glycoside extract
696. **Urginea scilla** Stern. (see 600) Squill
and its galenical preparations
700. **Veratrum spp** and their preparations Hellebores
703. Vitamin D2 and Vitamin D3

APPENDIX II

THE REFERENCE MATERIAL

HERBAL AND PLANT RELATED BOOKS

- B1. Hans Fluck: Medicinal Plants, 1988 W.Foulsham & Co. Ltd. ISBN 0-572-00996-8
- B2. Ceres: The Healing Power of Herbal Teas, 1984 THorsons Publishers, ISBN 0-72251578-8
- B3. M.Wright: The Complete Book of Garden Plants, 1984 Rainbird ISBN 0-7181-2307-7
- B4. R.Genders: Flowers and Herbs of Love, 1978 Longman and Todd ISBN 0-232-51409-7
- B5. R.C.Wren: Potter's New Cyclopaedia of Botanical Drugs and Preparations, 1985 8th impression, published C.W.Daniels. ISBN 0-85032-009-7
- B6. M.Grieve: A Modern Herbal, 1984 Savvas Publishing. ISBN unknown.
- B7. D.Hoffmann: The Herb Users Guide. 1987 Thorsons Publishing. ISBN 0-7225-1288-0
- B8. J.Lust: The Herb Book, 1986, 16th. impression, Bantam Publishing. ISBN 0-553-17273-5
- B9. C.F.Leyel: Herbal Delights. 1987 Faber and Faber ISBN 0-571-14850-6
- B10. C.F.Leyel: Elixirs of Life. 1987 Faber and Faber ISBN 0-571-14849-2
- B11. M.Scheffer: Bach Flower Therapy. 1986. Thorsons Publishing ISBN 0-7225-1121-3
- B12. R.Trattler: Better Health through Natural Healing. 1985 Thorsons Publishers. ISBN 0-7225-1382-8
- B13. S.Price: Practical Aromatherapy. 1987 Thorsons Publishing ISBN 0-7225-1525-1
- B14. R.Tisserand: The Art of Aromatherapy. 1987 C.W.Daniel & Co. Ltd. ISBN 0-85207-140-X
- B15. D.D.Buchman: Herbal Medicine: The Natural way to get well and stay well. 1987. Century Hutchinson ISBN 0-09-153691-X
- B16. J.Valnet: The Practice of Aromatherapy. 1986. C.W.Daniel Co. Ltd. ISBN 0-85207-140-X
- B17. A.Huxley: Natural Beauty with Herbs. 1977 Darton, Longman, & Todd. ISBN 0-232-51388-0

- B18. R.Lautier, A.Passebecq: Aromatherapy, the use of plant essences in healing. 1979 Thorsons Publishers. ISBN 0-7225-1145-0
- B19. M.Tisserand: Aromatherapy for Women. 1985. Thorsons Publishing. ISBN 0-7225-1119-1
- B20. M.Mitton: Herbal Remedies-Skin Problems. 1984. W.Foulsham ISBN 0-572-01254-3
- B21. M.Mitton: Herbal Remedies-Stress and Tension. 1984. W.Foulsham. ISBN 0-572-01254-3
- B22. E.Mindell: New and Revised Vitamin Bible. 1985. Warner Books ISBN unknown.
- B23. L.Mervyn: Thorsons Complete Guide to Vitamins and Minerals. 1986 Thorsons ISBN 0-7225-1273-2
- B24. H.Winter-Griffith: The Vital Vitamin Fact File. 1988. Thorsons Publishing ISBN 0-7225-1693-2
- B25. F.J.Wheeler: The Bach Remedies Repertory. 1988 C.W.Daniel Co.Ltd. ISBN unknown
- B26. B.H.M.A.: The British Herbal Pharmacopoeia 1983
ISBN 0-903032-07-4
- B27. S.Bunney: The Illustrated Book of Herbs. 1984. Octopus ISBN 0-7064-1489-6
- B28. M.Stuart: The Encyclopaedia of Herbs and Herbalism. 1986. Orbis ISBN 0-85613-700-6
- B29. D.Potterton (ed): Culpepper,s Colour Herbal. 1983. W.Foulsham ISBN 0-572-01152-0
- B30. The British Pharmaceutical Codex 1973. The Pharmaceutical Press ISBN 0-85369-084-7
- B31. Efamol literature: Essential Fatty Acids- A review of Evening Primrose Oil.
- B32. I.Stein: Royal Jelly. 5th impression 1986 Thorsons Publishing ISBN 0-7225-1225-2
- B33. Thorson's Editorial Board: The healing power of Pollen with propolis and Royal Jelly. 1989 new edition. Thorsons
ISBN 0-7225-1878-1
- B34. M.Polunin: Minerals - their crucial role in your health. 1987. Thorsons ISBN 0-7225-0935
- B35. P.Holford: The Whole Health Guide to Elemental Health. 1983. Thorsons ISBN 0-7225-0877-8
- B36. Superdrug: Vitamins for Health. 1988. Mandarin Offset (Hong Kong) ISBN 0-86178-497-6

- B37. W.C.Evans: Trease and Evans, Pharmacognosy. 13th edition. Balliere Tindall ISBN 0-7020-1357-9
- B38. R.Marks: The Sun and your Skin. 1988. MacDonald & Co. ISBN 0-356-14740-1
- B39. D.C.Jarvis: Arthritis and Folk Medicine. 1968. 8th printing Pan Books ISBN unknown
- B40. G.J.Binding: About Pollen-health food and healing agent. 1980. Chaucer Press. ISBN 0-7225-0660-0
- B41. R.Marks: Acne - Advice on clearing your skin. 1984. Dunitz ISBN 0-906348-53-6 (-52-8 in paperback)
- B42. J.Marks: A guide to the vitamins- their role in health and diseases. 1979. Medical and Technical Publishing Co.Ltd.
ISBN 0-85200122-3
- B43. J.Marks: The vitamins _ their role in Medical Practice. 1985. Medical and Technical Publishing Co.Ltd.
ISBN 0-85200-851-1
- B44. Roche: Vitamin Compendium. F.Hoffmann la Roche, Basle Switzerland. ISBN unknown.
- B45. M.Budd. The Little Honey Book 1984. Judy Piatkus (Publishers) Ltd. ISBN 0-86188-459-0. (lent by P.Riley)
- B46 R.F.Weiss. Herbal Medicine. (translated from the 6th. German edition of Lehrbuch der Phytotherapie by A.R.Meuss). The Bath Press 1986. ISBN 0-906584-19-1.
- B47 Christina Probert Jones: Marks and Spencer: Extracts from Nature. 1989 Tigerprint. no ISBN No.
- B48 E.G.Thomssen: Modern Cosmetics. 3rd. edition 1947 published by Drug and Cosmetic Industry
- B49 A.Y.Leung: Encyclopedia of Common Natural Ingredients used in food,drugs and cosmetics. John Wiley 1980 ISBN No. 0-471-04954-9
- B50 R.G.Harry: Harry's Cosmeticology 7th. edition 1987 Longmann, edited Wilkinson and Moore.
- B51 W.Hale-White. Materia Medica , Pharmacy, Pharmacology and Therapeutics. 26th edition, J.A.Churchill 1944
- B52 R.G.Harry: The Principles and practice of modern cosmetics - vol 2. Cosmetic Materials. 2nd. edition 1963 published Leonard Hill
- B53 M.Reiger: Surfactants in Cosmetics. 1985. Martin Dekker Inc. ISBN. 0-8247-7262-8

- B54. The Merck Index 11th Edition. An encyclopaedia of chemicals drugs and biologicals. 1989 ISBN. 911910-28-X. published Merck
- B55. P.Back. The Illustrated Herbal. 1987. Hamlyn Publishers through Octopus Books printed in Hong Kong by Mandarin. ISBN No.0 600 553 361
- B56. M.Scott (ed) An Irish Herbal. The Aquarian Press 1986 ISBN 0-85030-532-2
- B57. F.Bloomfield: Miracle Plants. Jojoba and Yucca. Century Publishing. 1985. ISBN No. 0 7126 1008 1
- B58. M.Evans: A guide to herbal remedies. C.W.Daniel. 1990 ISBN No. 0 85207 221
- B59. L.Manniche: An ancient Egyptian Herbal. 1989 British Museum Publications. ISBN No. 0-7141-1704-8
- B60. P.Schauenberg, F.Paris: Guide to Medicinal Plants. 1990 First paperback edition (Paris 1974). Lutterworth Press ISBN No. 0-7188-2820-8.
- B61. F.N.Hepper: Pharaoh's Flowers. 1990 HMSO ISBN No. 0-11-250040-4
- B62. C.Stockwell: Nature's Pharmacy. 1989 Arrow edition. The Guernsey Press Co.Ltd. ISBN No. 0-09-965760-0
- B63. CTFA: Cosmetic Ingredient Handbook. 1988 published the CTFA Inc. Library of Congress Catalogue card No. 88-071506
- B64. J.Wiseman: The SAS Survival Handbook. 1986, William Collins & Co. Ltd. ISBN No. 0-00-272774-9
- B65. S.Y.Mills: The A-Z of Modern Herbalism, A comprehensive guide to Practical Herbal Therapy. Thorsons 1989 (retitled) ISBN No. 0-7225-1882-X
- B66. E.F.W.Powell: The Natural Home Physician, A Book for Every Household. Health Science Press 1981 reprinted 2nd ed. ISBN No. 0-85032-092-5.
- B67. M.Howard: Traditional Folk Remedies, A comprehensive Herbal. Century paperbacks. 1987. ISBN No. 0-7126-1731-0.
- B68. R.Mabey: Le livre des Plantes utiles, translated from the English title The New Age Herbalist by Robert Laffont (ISBN No.0-02-063350-5 Gaia Books Ltd.), ISBN No. 2-221-06406-2 (French ed)
- B69. R.Phillips: Les plantes aromatiques et medicinales (originally Elm Tree Books 1987) Bordas 1987 ISBN No.2-04-012946-4 translation by Nadine de Winter.

B70. P.Forey: Plantes medicinales. Translated by Noelle Akoa. (first published in English 1989 by Atlantis Publications) now ISBN No. 2-7000-1916-4 by Librairie Grund.

B71. J.C.Marchina: Sante et beaute de votre peau. 1983 Editions Dangles. ISBN No. 2-7033-0255-X. ISSN 0180-8818.

B72. F.Perry: Macdonald Encyclopaedia of Plants and Flowers. 1987 5th reprint, Macdonalds. ISBN No.0-356-10399-4.

B73. D.Conway: The Magic of Herbs. 1975 Readers Union published Jonathon Cape Ltd, ISBN No. unknown.

B74. L.Gordon: A Country Herbal. 1980 Webb and Bower (publishers) Ltd. ISBN No.0-906671-09-4

B75. M.Hooper: Herbs and medicinal plants 1984, 1989 Kingfisher Books ISBN No. 0-86272-484-8

B76. M.Castro: The complete homoeopathy Handbook - a guide to everyday health. 1990. Macmillan. ISBN No. 0-333-55581-3

B77. J.de Bairacli Levy: The illustrated herbal handbook for everyone. 1991 4th edition. Faber and Faber. ISBN No. 0-571-16099-9.

B78. R.Fitter, A.Fitter and M.Blamey: The Wild Flowers of Britain and Northern Europe. Collins 4th edition, reprinted 1989.ISBN No.0-00-219715-4.

B79. D.Hoffmann: The New Holistic Herbal. Element. Second impression 1991. ISBN No. 1-85230-193-7

B80. D.Hoffmann: Thorsons Guide to Medical Herbalism - a comprehensive and practical introduction. reprinted 1991, formerly The Herb users guide. ISBN No. 0-7225 2494 3 (see B7).

B81. Tang.S., Palmer.M.: Chinese Herbal Prescriptions - A practical and authoritative self-help guide. 1986. Rider & Company, an imprint of Century Hutchinson Ltd. ISBN no. 0-7126-9470-6

B82. Bremness.L.: The complete book of herbs. published CLB (Colour Library Books) 1988 original copyright Dorling Kindersley Ltd., this copy 1991. ISBN No. 0-86283-893-2

B83. Turrill, W.B.: British Plant Life (Collins New Naturalist Series). Bloomsbury Books London, Collins. First published 1948, reprint 1989. ISBN No. 1-870630-83-1

B84. Pierpoint Johnson, C. and John E.Sowerby (illustrator): A Concise Encyclopaedia of Wild Flowers. Gallery Books 1989. ISBN No. 0-8317-9441-0.

B85. Rose,J.: Jeanne Rose's Modern Herbal. 1987. Pedigree Books published by The Putnam Publishing Group. ISBN No.0-399-51394-9

- B86. Simonetti, G.: Simon and Schuster's Guide to Herbs and Spices. A Fireside Book published by Simon and Schuster Inc. 1990. ISBN No.0-671-73489-X
- B87. Lang, D.C.: The complete book of British Berries. 1987. Threshold Books. ISBN No. 0-901366-34-X.
- B88. Hutchens, A.R.: Indian Herbalogy of North America. 1973 First paperback edition. Shambhala. ISBN No. 0-87773-639-1.
- B89. Boericke, W., Dewey, W.A.: The twelve tissue remedies of Schussler. Second Indian edition, Roy Publishing House, 1963, Calcutta 14, India. No ISBN No. issued.
- B90. Martindale. The Extra Pharmacopoeia. 29th. Edition. 1989. The Pharmaceutical Press. ISBN. No.0-85369-210-6.
- B91. Phillips, R.: Seashells and Seaweeds. Elm Tree Books. London. ISBN No. 0-241-12028-4.
- B92. Subik, R.: Cacti and Succulents. Treasure Press. 1989 (originally Hamlyn 1968) ISBN No.1-85051-380-5.
- B93. Chiej, R.: The Macdonald Encyclopoedia of Medicinal Plants. 1984, reprinted 1988. Macdonald Orbis. ISBN No. 0-356-10541-5 (hb), -10542-3 (pb).
- B94. Launert, E.: The Hamlyn Guide to Edible & Medicinal Plants of Europe and Northern Europe. 1981, 4th. impression 1989. Hamlyn. ISBN No.0-600-56395-2.
- B95. Smith, T.: Homoeopathic Medicine, a doctor's guide to remedies for common ailments. 1982. Fifth impression 1984. Thorsons. ISBN No. 0-7225-0775-5.
- B96. Browning, G.H.: The children's book of wild flowers and the story of their names. 1927 reprint 1929 W.R.Chambers. Pre ISBN system.
- B97. Pickles,S.: The Language of Flowers. 1990. Penhaligon
- B98. Bastyra, J., Canning, J.: A gourmets book of fruit. Salamar Books. ISBN No. 86101-421-9.
- B99. Treben, M.: Health from God's Garden, herbal remedies and glowing health for well-being. 1987. Thorson. ISBN No. 0-7225-1476-X.
- B100. Graham, J.: Evening Primrose oil, its remarkable properties and its use in the treatment of a wide range of conditions. 1984. Thorsons. ISBN No. 0-7225-1749-1.
- B101. Gerard: Gerard's Herbal. Ed. Marcus Woodward. Studio editions. First published 1985, this edition 1990, ISBN No. 0-94649-527-0.

B102. Bianchini F., Corbetta F.,: The Fruits of the Earth. Translated from the Italian by Mancinelli A. Bloomsbury Books, London. ISBN No. 1-870630-10-6.

B103. Overseen and written by Peter Hawes and Mark Holloway: The Wildlife of Hengistbury Head. Bournemouth Parks. 1988

B104. Beazley, M.: Fruit - A connoisseur's guide and cookbook. Alan Davidson and Charlotte Knox. 1991. Mitchell Beazley Publishers. ISBN NO. 0-85533-903-9.

B105. Norman J.: The Complete Book of Spices. Colour Library Books. 1992. ISBN No. 0-86283-926-2.

B106. Huxley A.: Mountain Flowers of Europe. Blandford Press. First published, this edition 2nd revised 1986.
ISBN No. 0-7137-1846-3.

B107. Keville, K.: The Illustrated Herb Encyclopaedia - a complete culinary, cosmetic, medicinal and ornamental guide to herbs. Grange Books. 1991. ISBN No. 1-85627-175-7.

B108. Bristow, P.: The Illustrated Encyclopaedia of Wild Flowers. 1992. Chancellor Press. (originally Octopus books - The Illustrated Book of Wild Flowers) ISBN No. 1-85152-138-0.

B109. Hoffmann, D.: Welsh Herbal Medicine. 6th impression 1992. Abercastle Publications. ISBN No. 1-872887-04-X

APPENDIX III**SLIDES PRESENTED**

SLIDE No.	REF No		Common name	Latin name
82	E	13	Yarrow	<i>Achillea millefolium</i>
41	B	48	Lady's Mantle	<i>Alchemilla vulgaris</i>
47	C	31	Love-lies -bleeding	<i>Amaranthus caudatus</i>
1	B	33	Anemone	<i>Anemone coronaria</i>
15	B	24	Chamomile, Roman	<i>Anthemis nobilis</i>
20	B	45	Columbine	<i>Aquilegia vulgaris</i>
8	C	26	Burdock	<i>Arctium lappa</i>
78	B	38	Thrift (Sea Pink)	<i>Armeria maritima</i>
23			Daisy	<i>Bellis perennis</i>
6	C	33	Borage	<i>Borago officinalis</i>
62	C	32	Rape	<i>Brassica napus</i>
69	A	17	Sea Rocket	<i>Cakile maritima</i>
10	C	30	Calendula	<i>Calendula officinalis</i>
35			Heather	<i>Calluna vulgaris</i>
5	B	43	Harebell	<i>Campanula persicifolia</i>
21	B	30	Cornflower	<i>Centaurea cyanus</i>
33	C	5	Greater Knapweed	<i>Centaurea scabiosa</i>
26	C	27	Fat Hen	<i>Chenopodium album</i>
17	B	41	Clematis	<i>Clematis recta</i>
45	B	14	Lesser bindweed	<i>Convolvulus arvensis</i>
68	E	10	Samphire	<i>Crithmum maritum</i>
59	A	9	Quince	<i>Cydonia japonica</i>
7	B	7	Broom	<i>Cytisus scoparius</i>
13	B	22	Carrot	<i>Daucus carota</i>
3	A	11	Bleeding Heart	<i>Dicentra spectabilis</i>
77	C	50	Teasel	<i>Dipsacus fullonum</i>

SLIDE No.	REF No		Common name	Latin name
64	C	35	Rosebay Willowherb	<i>Epilobium angustifolium</i>
37	E	16	Horsetail	<i>Equisetum arvense</i>
52	E	15	Meadowsweet	<i>Filipendula ulmaria</i>
71	E	9	Serrated wrack	<i>Fucus serratus</i>
70	A	31	Seaweed	<i>Fucus vesiculosus</i>
40	C	6	Lady's Bedstraw	<i>Galium verum</i>
38	C	14	Ivy	<i>Hedera helix</i>
76	C	29	Sunflower	<i>Helianthus annuus</i>
4	A	6	Bluebell	<i>Hyacinthoides non-scripta</i>
67	C	25	St. John's Wort	<i>Hypericum calycinum</i>
39	B	25	Jasmin	<i>Jasminium officinale</i>
28	C	20	Field Scabious	<i>Knautia arvensis</i>
42	A	27	Lavender	<i>Lavandula angustifolia</i>
43	B	29	Lavender	<i>Lavandula officinalis</i>
50	A	48	Mallow, Tree	<i>Lavatera olbia</i>
80	B	16	Toadflax	<i>Linaria vulgaris</i>
36	B	49	Honeysuckle	<i>Lonicera periclymenum</i>
49	A	32	Mallow, Common	<i>Malva sylvestris</i>
14	C	44	Chamomile, German	<i>Matricaria recutita</i>
16	A	29	Chamomile, Wild	<i>Matricaria recutita</i>
44	A	25	Lemon Balm	<i>Melissa officinalis</i>
74			Spearmint	<i>Mentha spicata</i>
29	A	13	Forget-me-not	<i>Myosotis arvensis</i>
25	B	21	Evening Primrose	<i>Oenothera biennis</i>
63	C	8	Restharrow	<i>Ononis repens</i>
51	A	10	Marjoram	<i>Origanum onites</i>
57	C	46	Poppy	<i>Papaver rhoeas</i>
56	E	12	Plantain (Ribwort)	<i>Plantago lanceolata</i>

SLIDE No.	REF No		Common name	Latin name
55	E	14	Plantain (Greater)	<i>Plantago major</i>
31	B	47	Jacob's Ladder	<i>Polemonium coeruleum</i>
58	B	6	Primrose	<i>Primula vulgaris</i>
48	A	12	Lungwort	<i>Pulmonaria officinalis</i>
2	B	36	Apple Blossom	<i>Pyrus malus</i>
9	B	37	Buttercup	<i>Ranunculus bulbosus</i>
46	A	39	Lesser Celandine	<i>Ranunculus ficaria</i>
66	A	24	Rosehip	<i>Rosa canina</i>
65	C	39	Rose, Wild	<i>Rosa canina</i>
72	A	46	Sorrel	<i>Rumex acetosa</i>
73			Sorrel	<i>Rumex obtusifolius</i>
66	B	28	Sage	<i>Salvia officinalis</i>
22	B	26	Cotton Lavender	<i>Santolina chamaecyparissus</i>
61	C	40	Groundsel	<i>Senecio aureus</i>
60	A	36	Ragwort	<i>Senecio jacobaea</i>
12	A	18	Campion, red	<i>Silene maritima</i>
11	E	19	Campion, sea	<i>Silene maritima</i>
30	E	1	Golden Rod	<i>Solidago virgaurea</i>
27	B	12	Feverfew	<i>Tanacetum parthenium</i>
24	A	7	Dandelion	<i>Taraxacum officinale</i>
79	B	31	Thyme	<i>Thymus vulgaris</i>
18	C	15	Clover, Red	<i>Trifolium pratense</i>
19			Clover, White	<i>Trifolium repens</i>
32	B	4	Gorse	<i>Ulex europaeus</i>
75	A	4	Stinging Nettle	<i>Urtica dioica</i>
53	C	10	Mullein	<i>Verbascum densiflorum</i>
54	A	8	Lesser Periwinkle	<i>Vinca minor</i>
81	A	40	Violet	<i>Viola riviniana</i>
34	B	15	Heartsease	<i>Viola tricolor</i>