Herbal approaches to pathological states

SCOPE
Apart from their use to provide non-specific support for recuperation and repair, specific phytotherapeutic strategies include the following.

Treatment of:
- minor wounds and lesions;
- sprains and bruises;
- seborrheic inflammations;
- cutaneous infections and infestations;
- minor inflammations of mouth, throat, anus and nasal and vaginal mucosa;
- certain inflammatory conditions affecting the surface of the eye.

Management and relief of:
- pruritic symptoms;
- cutaneous eruptions from skin and systemic inflammatory diseases;
- inflammations affecting joints, muscles and other subcutaneous tissues;
- varicose ulceration and pressure sores.

Because of its use of secondary plant products, particular caution is necessary in applying phytotherapy in cases of:
- broken skin;
- individuals with certain contact sensitivities.

ORIENTATION
Background
Plants contain many constituents with local physical impact on body tissues. The topical use of herbal remedies is among the first emphases in the earliest and simplest traditions of healthcare. Wound healing was an obvious primal indication for which plant remedies appeared especially suitable.

From a modern perspective direct effects on tissues are readily testable in research. Most antiseptic, antiinflammatory and antitumour effects in the research literature relate to in vitro observations, of little direct application to anticipating the effects of oral consumption but quite relevant to the prediction of topical activity.

Referral to Chapter 2 will provide much of the detail for this review. The following topical properties, however, can be highlighted.

Demulcents
Plant material often contains apparently soothing effects on physical contact and plant remedies must have been a very early instinctive application to wounds. Plants with high mucilage content form the basis of poultices and creams. Linum (linseed, flaxseed) is one of the most impressive poultices where the skin (or subdermal tissue in even unbroken skin) is painfully inflamed. Ulmus fulva (slippery elm bark) when powdered is one of the most obviously mucilaginous plant materials available for poultices. Stellaria (chickweed) in a cream base provides effective relief for many itchy conditions. Althaea (marshmallow root) and Trigonella foenum-graecum (fenugreek) have notably soothing reputations. Above all, Symphytum (comfrey root) cream, applied only to unbroken skin, combines an unparalleled local demulcent action with an active promoter of repair, allantoin, which is known to be
very rapidly absorbed into the subdermal tissue. The expressed juice of Aloe vera also has impressive topical demulcent properties when applied directly to broken or unbroken skin.2,3,4

**Astringents**

Tannins and related polyphenols are very common plant constituents with the simple property of curdling protein molecules into which they come in contact. The principle of tanning animal skins to make leather, most often using oak galls or oak bark, follows from this property. Simple washes with strong decoctions of high-tannin preparations (like broadleaved tree bark) are well-established country first-aid treatments for open wounds and burns and the technique was formally revived among 'barefoot doctors' in China after the Cultural Revolution in the 1960s. The aim here was to produce a sealing eschar over the exposed tissues formed from coagulated protein on the surface. In modern clinical application, suspensions of decoctions of high-tannin herbs in gum tragacanth or gum arabic can produce impressive healing effects in open wounds or skin lesions. The antioxidant effects of such preparations have also drawn attention.5,6,7 Plants to be considered for this role include decoctions of Hamamelis (witchhazel bark), Potentilla tormentilh (tormentil root), Quercus (oak bark), Krameria (rhatany) and Geranium maculatum (American cranesbill root).

**Antiinflammatories**

A number of plant constituents appear to possess topical antiinflammatory effects, frequently in addition to their demulcent and astringent properties. They might be considered as alternatives to conventional steroidal and other antiinflammatory prescriptions. Calendula (marigold),8 at least when extracted in high-strength alcohol, and Matricaria recutita (German chamomile),9 both included in creams, have useful benefits in soothing inflamed skin lesions.10 Berberis aquifolium has demonstrated efficacy in the treatment of psoriatic lesions.11 Echinacea applied topically appears to have local antiinflammatory effects on minor wounds.12 Hypericum (St John's wort) extracted in oil as a red pigment is a long-standing remedy for the relief of burns and skin pain, as is oil of lavender applied over unbroken skin. Other traditional remedies used topically for antiinflammatory effects include Curcuma longa (turmeric), juniperus (juniper oil) and Angelica archangelica (angelica oil). Bruising is traditionally treated with external applications of Aesculus hippocastanum13 and Arnica montana (arnica).

**Antiseptics**

The topical effects of herbal remedies can include some antiseptic effects in vitro, although only a few whole preparations have significant clinical prospects. For a review of antimicrobial effects of herbal remedies see p.140.

**FORMULATIONS**

Many types of topical formulation have evolved for the application of plant materials on body surfaces. A brief summary of their characteristics well reflects the diversity of possible approaches.

**Liquids**

**Liniments (and embrocations)**

Semiliquid preparations prepared in oily or alcoholic solution respectively, with rubefacient or analgesic intentions, are rubbed into unbroken skin. Examples include liniments of mustard and Capsicum, used to stimulate circulation, and liniment of Arnica for healing.

**Lotions**

These are non-oily liquids applied externally and generally not rubbed in. They are applied to the body surface or any external orifice. Sometimes a lotion will be a herbal tincture used, for example, as topical treatments for skin or nail fungal infections.

**Eardrops**

The external ear canal can be treated with oil or alcohol/water-based preparations to help clear obstructions, to treat inflammation or infection of the canal or ear drum or to influence the middle ear by diffusion across the ear drum. Warm olive oil is a popular treatment for waxy obstructions and may be augmented by garlic and Verbascum (mullein flowers) steeped in the oil. However, bacterial contamination of such products is a concern and non-industrially produced preparations are often not to be recommended.
Eyebaths

Aqueous solutions are the usual basis for irrigation of the eye in blepharitis, conjunctival and corneal affections. Bacterial contamination of the eye tissues is particularly hazardous in any home-produced eyebath and these should be discouraged. Great care must be taken to ensure sterility of the fluid which must be boiled for at least 15 minutes in its final container (or added to a sterilized container after boiling). Any water added to the preparation must also be boiled or sterilized. Preparations must be used immediately or stored in sterile frozen blocks. Decoctions of Euphrasia (eyebright), Foeniculum (fennel seed), Agrimonia (agrimony), Glycyrrhiza (licorice root), made at 30 g per 500 ml and then diluted 1:1 with water for application, may be used to reduce inflammatory symptoms.

Gargles

These are preparations in water or alcohol/water solution to be used for throat problems. They may be antiseptic, soothing and/or healing. Herbal gargles may also be swallowed to obtain a secondary, systemic effect. Effective gargles can be made with tinctures of Salvia (sage), Commiphora (myrrh), Calendula and Echinacea, these ideally combined with fluid extract of Glycyrrhiza (licorice) or mucilaginous ingredients. Honey is another effective ingredient.

Inhalants (or vapours)

Volatile components may be inhaled either from a pad applied to the nose and mouth or from liniments or ointments applied to the skin under the nose or on the chest or, most effectively, with steam from hot water. They allow deep and accurate penetration of medicinal agents throughout the whole respiratory system, including the sinuses and middle ear. They will clear catarrhal congestion, soothe irritable mucous membranes and reduce some hypersensitivity reactions. The simplest steaming herb is Matricaria (chamomile) strewn onto the surface of recently boiled water. Recommended oils include pine, aniseed, eucalyptus and, to a limited extent, peppermint.

Baths

Adding herbs or volatile oils to baths has been a traditional technique, with the particular benefit of allowing inhalation of the volatile components in the steam. One common non-volatile application is the mustard bath, used to bathe feet or hands affected by arthritic trouble or as a means of stimulating circulation generally throughout the system. Mustard powder is added at up to 1% by weight to hand-hot water and the part bathed in it till cool.

Douches

Aqueous solutions may be directed against the body or into a body cavity to cleanse or disinfect. The vaginal douche is the most frequently used: infusions or decoctions of astringent or antiseptic herbs may be prepared and applied deep into the vagina with a bulb syringe or similar applicator whilst the patient is lying supine, for vaginal and cervical infections and inflammations. Douches can also be used for the nasal cavity although this is rarely done nowadays.

Solids

Creams

These are emulsions of oil in water or water in oil designed to be well absorbed by the skin. They may have various remedies dissolved in either the oil or water fraction. Creams are generally softer than ointments and are more complex in their formulation. For this reason, they were not common in pharmacies of the past but with technical advances are very prominent today, especially in the cosmetics industry. Where available, preparations with Stellaria (chickweed), Calendula, Echinacea and Symphytum (comfrey) are suitable for the treatment of pruritic or inflammatory skin conditions.

Ointments (or unguents)

These are semisolid solutions of various preparations in non-aqueous bases that are not absorbed easily into the skin and are therefore used to provide a protective or remedial film over the skin. Being immiscible with water or skin secretions, ointments effectively form an occlusive layer over the skin, preventing evaporation by transpiration or sweating and allowing the skin to become hydrated. This permits easier absorption of any water-soluble materials in the ointment.

Jellies (or gels)

Suspensions or colloids made from gums, pectin or gelatin allow non-oily applications to be applied to mucous membranes (like the vagina and rectum) and to open or discharging wounds or lesions. They are the most effective way of applying an astringent treatment, especially if gum tragacanth is used as the gelling/suspending agent. Infusions, juices or tinctures may be
used for the fluid part. Soothing astringent preparations made, for example, with witchhazel are ideal for irritated wounds, slow-healing leg ulcers or haemorrhoids. Without preservatives, gels should be made and used freshly or from frozen samples.

**Plasters**

Unlike the modern item, traditional plasters were impregnated dressings applied over the skin where a long-term and concentrated medication was required. The plaster mass was a waxy, rubber, resinous or other base incorporating medical agents, spread on to fabric. It was often designed to convey rubefacient, analgesic or protective effects. Cayenne plasters are notable applications for arthritic disease.

**Poultices**

The oldest traditional application was a mass of material soaked in hot water in a fabric bag and applied to the skin while still hot. Poultices have particular ability to draw wounds and infections and to soothe, heal and astringe. Linseed, comfrey, marshmallow and cabbage leaf are frequently used in poultice form in traditional practice.

**Suppositories and pessaries**

Solid preparations suitable for rectal and vaginal insertion respectively, generally consisting of a solution or suspension of active agents in a solid base designed to melt at body temperature (and thus needing to be stored at cool temperatures). Two main types of base are cocoa butter and gelatin-glycerin mixes. The former is most immediately applicable where dry herbal preparations are to be added. Gelatin-glycerin bases are better able to hold fluid; nevertheless, their use may lead to drying of the mucosal membranes and this may provoke inflammation if used frequently.

**References**