

PAPER FOR SOAP, PERFUMERY AND COSMETICS

Naturally, it started with an article....

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Introduction

Ten or fifteen years ago, the cosmetic and toiletry industry had a selection of less than one hundred plant preparations from which to choose. Today that figure is more likely to be nearer five hundred, and the number of new offerings is becoming more and more exotic with the passing of each month.

The further that we move away from our own European heritage, the greater the risk, and so the greater the need for in-depth literature research and accumulation of data.

In the course of a year, we examine some three to four hundred new potential plant materials from a theoretical standpoint, and see about fifty new extracted materials (i.e. from unique or new sources).

We rely on 'leads' to prompt deeper study, and as an example, one such lead was from the unabridged version of an article that appeared in this journal¹.

"Perhaps the best known of all traditional Indian herbal remedies is the Triphala, or "Three Fruits" remedy. This is considered a virtual cure-all and is used for many internal applications as well as for hair and skin care."

This remedy consisted of *Emblica officinalis* or *Phyllanthus emblica*, *Terminalia chebula* and *Terminalia bellerica*. We believed that the use of *Emblica* on its own would have been unlikely to achieve the claimed properties.

Terminalia

Thus the *Terminalia* species was chosen for investigation for no other reason than that a single reference triggered some questions.

Terminalia spp., are members of the Combretaceae family and are represented by 11 species in West Africa.

Verger² tells us that a Yoruba incantation invokes the genus under the general name of *idi* 'the closing' of the paths of evil and death, for the safe conduct of an *abiku* child during its life on this earth

Terminalia chebula Retz. is a tropical tree 15-20m high, which has yellow-white flowers, odoriferous. The fruit is a dry drupe. It is found in India, Indochina, Burma, Cambodia, Thailand, Laos, Vietnam and Malaysia.

The fruits, known as myrobalans, contain 3.5% chebulic acid, 37% fatty oil, 27-39% tannin and ellagic acid. The drug is highly astringent³. It is known as He Zi in Chinese⁴ and it is the fruits

which are used for their astringent, antidiarrhoeic and haemostatic properties. Abbiw⁵ mentions four species that are used in Ghana for the treatment of wounds.

Terminalia avicennioides Guill. & Perr. application of powdered, ground roots or root-bark used. The leaves are applied to the skin to prevent inflammation, while the powdered root is applied to sores and ulcers.

The root-bark is made into a decoction along with other drug plants by the Baule of the Ivory Coast for use by draught and enema for severe jaundice. The lees that remain are used as a friction rub for the body⁶.

The Maninka apply a root decoction compress to old sores which do not heal well⁷, and in Casamanance of Senegal the root bark is considered cleansing and healing on refractory sores, according to Kerharo and Adam⁸.

Though the roots are used as chew-sticks in the Ibadan area of Nigeria, they have no antibiotic activity, however, examination of the roots for their use in the treatment of skin infections showed activity against a number of Gram +ve organisms, including *Staphylococcus aureus*.

The Northern Nigerians use the pulverised leaves on burns and bruises. The ash of the leaves mixed with roasted bulbs of *Crinum* spp. (a lily of the Amaryllidaceae family) and made into an ointment with butter is used for rubbing on rheumatic and swollen joints.

Terminalia glaucescens (Ongo), the root bark is applied for the burning effect of iodine and also used for diarrhoea and dysentery. Cholagogue action (A substance which stimulates or aids the release of bile from the gall-bladder) is ascribed in the Ivory Coast.

Lewis and Elvin-Lewis⁹ say that the root is used in West Africa for the treatment of wounds and that it produces no adverse clinical effects when used as a chewing stick. However, aqueous extracts have been shown to have antibacterial activity.

Burkhill says that the root bark was used along the Ivory Coast for the treatment of burns and for sores. The root-bark is said to have an effect similar to tincture of iodine.

Terminalia belerica, the dried fruit (bahera) is used in India for stomach disorders, including indigestion.

Terminalia ivorensis (Emire) or Satin Wood, bark decoction is used as a lotion, which yields a red macerate rich in tannins and used for treating sores. The powdered bark in some parts of Africa is dusted over ulcers and can also be used in the form of a pulp over areas of rheumatic and muscular pain.

The leaves express a sap which can be used with benefit on cuts and this material is also used as an aphrodisiac in Sierra Leone!

Terminalia macroptera A Savannah tree with black fissured bark, bright green leaves, flowers in spikes and oblong seeds surrounded by a wing. (Kwatiri), the pulped bark or bark decoction is used. Locally dyes are prepared from the roots (yellow) and leaves (black).

The heart wood is scented and is used in Senegal in a perfume called *amulguéne*, *amu* or *samu-diala*, depending on the tribal dialect¹⁰.

The stem and root bark are used on wounds and even sprains, both contain tannin and are haemostatic (cicatrisation is also claimed).

Oliver¹¹ gives an excellent treatise on *Terminalia* spp. and says that the bark, roots and leaves of many *Terminalia* spp. are used in local medicine for their astringent action.

Terminalia laxiflora is used in wound dressing and in the treatment of piles for its haemostatic and healing effects, whilst a decoction of the bark and leaves is said to be diuretic.

Yaws are treated on the east Ivory Coast by washing the pustules with a hot bark decoction to which citron has been added, and then covering the area with powdered bark.

An aqueous extract of the stem bark has shown some microbiological activity against *Sarcina lutea* and *Staphylococcus aureus*¹².

Terminalia superba (Indian almond) is given for diarrhoea and dysentery.

The inner-bark is used as a macerate for mouthwash to treat gingivitis and thrush. A bark-macerate is used as an antiseptic on sores and wounds in Liberia, whilst in the Congo it is used on swellings and areas of general pain.

Terminalia catappa in Java is attributed with cholagogue action, while in India it is said to have cardiac stimulant action. Indian *Terminalia arjuna* bark was found to contain crystalline arjunine, a lactone, arjunetin, essential oil, tannin, reducing sugars and colouring matter¹³. On the Malay Peninsular and through the Canary Islands this tree is better known as the Tropical Almond¹⁴. The kernel oil is used in India as an almond oil substitute, and called Indian Almond Oil or Oil of Badamier, in the Philippines it is known by the name Talisay oil.

The leaves and flowers also contain tannin, and the presence of a sterol is reported. The sap from the young leaves are made into an ointment for scabies, leprosy and other skin problems in the Philippines and southern India. The leaves are refreshing and relieve pain, often being used to relieve a headache, ease the pain in rheumatic joints or used topically for mastalgia (breast pain).

An excellent source of vitamin C has been identified in the fruits of *Terminalia ferdinandiana* (2767-3150 mg/100g)¹⁵.

Burkhill¹⁶ refers to *Terminalia albida* Sc. Elliot where an aqueous extract of the bark is used as an eye lotion in the Gambia.

Also referred to is *Terminalia arjuna* Bedd. which yields about 15% tannin and has medicinal uses which are not specified.

Terminalia brownii Fres. is burnt by the Boran women to perfume their hair.

Other varieties include *T. mantaly*, *T. mollis*, and in particular, *T. scutifera* Planch. which is used in Sierra Leone as a wash for sore feet.

The last words

Terminalia species were certainly known and used as long ago as 1883¹⁷. This older reference mentions *T. bellirica* and *T. chebula* from which was obtained tannic acid (45%). "These fruits were held in high regard by the Arabians and were long employed by European practitioners ... as astringents"

Interestingly, only *Terminalia sericea* is listed in the CTFA ingredient dictionary and on the European Inventory (LCLN Disc 14). This is somewhat surprising, since this species has little data that could be found by the author.

The leaves of the *Terminalia* usually provide a range of yellow to orange-red dyes, whereas the barks produces a black colour.

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