

GLOSSARY A — TERMS USED IN THE MONOGRAPHS

***Areca catechu* L.:** see **areca nut** (Figure 1)

Areca fruit: fruit of the palm *Areca catechu* L. — see **areca nut**

Areca nut: nut from the fruit of the *Areca catechu* L. (Palmaceae) tree, a palm native to South Asia. The fruit is green when unripe and orange-yellow in colour when ripe and is the size of a small egg. The nut (seed) is separated from the fibrous pericarp and used fresh or dried, or processed by roasting, sun drying, boiling, soaking in water or fermenting. The unripe green areca fruit may also be used. Synonyms include **supari** (in Hindi and other languages in India), *puwak* (Sri Lanka), *gua* (in Sylheti), *mak* (Thailand), *pinang* (Sarawak and Malaysia), *daka* (Papua New Guinea), *pugua* (Guam) and *Kun-ywet* (Myanmar). The term ‘areca’ is derived by the Portuguese from *Malayalam atrekka* and from the Tamil *aakkay*. (Figure 2)

Betel inflorescence: flower of the vine *Piper betle* L.

Betel leaf: leaf of the vine *Piper betle* L. (note the difference in spelling between the Latin term ‘*betle*’ and English ‘betel’). It is cultivated in hot, humid climates in Asia. Serves as the wrapping for **betel quid**. (Figure 3)

Betel nut: the term ‘betel nut’, although commonly used in the scientific literature, has caused considerable confusion and should be avoided. The correct term is **areca nut** because betel vine and areca palm are different plants.

Betel quid: usually prepared by smearing a **betel leaf** with **slaked lime**, to which pieces of **areca nut** are added. **Catechu** may be added. Crushed leaves of cured tobacco and flavouring agents may also be added. The ingredients are folded in the betel leaf and chewed. Known as *paan* in Hindi and other languages in India and *buyo* in the Philippines. Betel quid may be prepared differently in different parts of the world. See *lao-hwa* and **stem quid**. (Figure 4)

Bidi: hand-rolled Indian cigarette consisting of flaked tobacco rolled in temburni leaf

Buyo: mixture consisting of **betel leaves**, **areca nut**, slaked lime and tobacco or any combination of these constituents. See **betel quid**

Catechu: astringent, reddish-brown substance which is often smeared on the betel leaf used to wrap the betel quid ingredients. In general, two types of catechu are used, depending on the plant from which the catechu has been extracted. Also known as pale or black catechu, *kattha*, *dok can*, *gambir* and **cutch**. In northern Thailand, **catechu** may be extracted from another plant and is referred to as *nang ko*.

Chuna: see **slaked lime**. Also spelt *chunam*

Cutch: see **catechu**

Gambir: *gambir* is a woody, climbing shrub native to China and other parts of southeast Asia. The plant consists of a thin, wooden stem that is reddish-brown in color, with broad green leaves. Most of the stem branches also have hook-like appendages, which the plant uses to attach itself to a surface. The medicinal part of gambir is a watery extract, which is taken from the plant's leaves and young shoots. The main ingredients in the extract are tannins and catechins. Gambir acts mainly as a sedative; it dilates peripheral blood vessels and lowers blood pressure. It is also used to treat hypertension, dizziness and anxiety. In traditional Chinese medicine, gambir is used to calm wind to relieve convulsions; calm the liver; and remove (or clear away) heat.

Gudaku: paste consisting of powdered tobacco, molasses and other ingredients. Also spelt *Gudakhu*

Gutka: commercial preparation of **areca nut** and powdered tobacco, **slaked lime**, **catechu** and other ingredients. Also spelt *gutkha* (Figure 5)

Kattha: see **catechu**

Khaini: mixture of tobacco and **slaked lime** mixed in the palm of the hand

Lao-hwa quid: specific Taiwanese term for unripe areca nut split in half, with inflorescence of *Piper betle* L. inserted in the middle and **slaked lime** added

Lime: see **slaked lime**

Mainpuri tobacco: mixture of **areca nut**, **slaked lime** and tobacco. Other ingredients may be added. The name *Mainpuri* is derived from an area in the northern part of India.

Mawa: mixture of predominantly **areca nut** pieces with some tobacco and **slaked lime**

Mishri: roasted or half-burnt tobacco prepared by baking on a hot metal plate and powdered. Also known as *masheri* or *misheri*

Nang ko: see **catechu**

Naswar: mixture of powdered tobacco, **slaked lime** and indigo. Popular in Afghanistan and Pakistan. Also spelt *nasswar*, *niswar*

Paan: see **betel quid**. Also spelt *pan*

Pan masala: commercial preparation containing **areca nut**, **slaked lime**, **catechu** and other ingredients, but without tobacco. (Figure 5)

Piper betle L.: see **betel leaf**

Slaked lime: prepared from coral, sea shells (shell lime) or quarried limestone and mixed with water. Red and white varieties are available in Taiwan, China, Thailand and Myanmar. Also known in India as *chuna* or *chunam*

Stem quid: specific Taiwanese name for betel quid consisting of unripe **areca nut** split in half, with stem of inflorescence inserted in the middle and **slaked lime** added

Supari: see **areca nut**

Tambula: Sanskrit term referring to **betel leaf**, **betel quid** or **areca nut**. Also called betel *thambool*

Tamol: fermented form of **areca nut**

Zarda: tobacco leaf broken into small pieces and boiled in water with **slaked lime** and spices until evaporation, then dried and coloured with vegetable dyes; usually chewed mixed with **areca nut** and spices

GLOSSARY B — PRECANCEROUS LESIONS AND CONDITIONS AND SOME OTHER BETEL QUID-ASSOCIATED LESIONS

Lichenoid lesions: clinically resemble idiopathic oral lichen planus but represent type IV contact hypersensitivity reactions. In areca-nut chewers, they are found at the site of quid placement and are unilateral in nature.

Betel chewer's mucosa (BCM): brownish-red discoloration of the oral mucosa, often accompanied by encrustation with quid particles, which are not easily removed, and show a tendency for desquamation and peeling. The underlying area of the mucosa assumes a wrinkled appearance. The lesion is usually localized and associated with the site of quid placement in the buccal cavity (Figure 6).

Erythroplakia: a bright red lesion of the oral mucosa that cannot be characterized clinically or pathologically as any other definable lesion (Axéll *et al.*, 1984; WHO, 1996).

Oral leukoplakia: predominantly white patch or plaque on the oral mucosa that cannot be characterized clinically or pathologically as any other disease and is not associated with any physical or chemical causative agent except tobacco (Axéll *et al.*, 1984). Based on clinical appearance, leukoplakia can be divided into two main subtypes: homogeneous leukoplakia (white) and non-homogeneous — including speckled or nodular — leukoplakia (red/white) (Figure 7).

Oral lichen planus: a chronic inflammatory disease of the skin and the oral mucosa of unknown etiology, although alterations in cell-mediated immunity may be important. Clinically, six types of oral lichen planus are described: papular, reticular, plaque-like, atrophic, erosive (ulcerative) and bullous. Malignant transformation has been observed in up to 2–3% of patients.

Oral submucous fibrosis (OSF): chronic disorder characterized by fibrosis of the lining mucosa of the upper digestive tract involving the oral cavity, oro- and hypopharynx and the upper third of the oesophagus (Johnson *et al.*, 1997). The fibrosis involves the lamina propria and the submucosa and may often extend into the underlying musculature, resulting in the deposition of dense fibrous bands. These bands give rise to the limited mouth opening, which is a hallmark of this disorder (Figure 8).

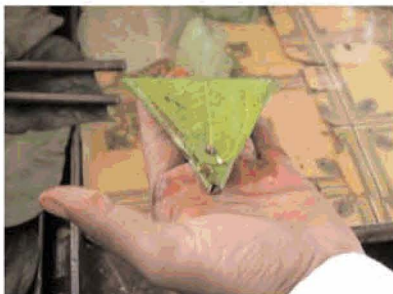
Precancerous conditions: a generalized state associated with a significantly increased risk for cancer (WHO, 1996).

Precancerous lesions: a morphologically altered tissue in which cancer is more likely to occur than in its apparently normal counterpart (WHO, 1996).

Figure 1. *Areca catechu* L. palm**Figure 3. Betel leaves (*Piper betle* L.)****Figure 2. Areca nuts (a) unripe, (b) raw, lime-coated and dried and (c) cut open to reveal the nut and husk**

Figures 1, 2(a) and 2(c) provided by Peter Reichart; figures 2(b) and 3 provided by the Nargis Dutt Memorial Cancer Hospital, Barshi, Solapur District, Maharashtra, India

Figure 4. Preparation of betel quid



Provided by the Nargis Dutt Memorial Cancer Hospital, Barshi, Solapur District, Maharashtra, India

Figure 5. Shop in India selling a variety of commercial preparations of areca nut products (*gutka*, *pan masala* and *supari*)



Figure 6. Betel chewer's mucosa with brownish flakes and homogeneous leukoplakia of the right cheek



Figure 7. Whitish lesion of the right cheek with some brownish adherent flakes of the betel quid. The white lesions correspond to an extended homogeneous leukoplakia.



Figure 8. Betel chewer's mucosa with initial oral submucous fibrosis (white bands and plaques in the buccal mucosa)



Figure 5 provided by the Nargis Dutt Memorial Cancer Hospital, Barshi, Solapur District, Maharashtra, India; figures 6, 7 and 8 provided by Peter Reichart