Species (Family)
(i) Picrasma excelsa (Sw.) Planch. (Simaroubaceae)  
(ii) Quassia amara L.

Synonym(s)
Bitterwood, Picrasma  
(i) Jamaican Quassia, Picraena excelsa Lindl.  
(ii) Surinam Quassia

Part(s) Used
Stem wood

Pharmacopoeial and Other Monographs
BHC 1992(G6)  
BHP 1996(G9)  
Martindale 32nd edition(G43)  
PDR for Herbal Medicines 2nd edition(G36)

Legal Category (Licensed Products)
GSL(G37)

Constituents(G2,G6,G22,G41,G64)

Alkaloids Indole-type. Canthin-6-one, 5-methoxy- 
canthin-6-one, 4-methoxy-5-hydroxycanthin-6-one, 
N-methoxy-1-vinyl-β-carboline.(1,2)

Terpenoids Isoquassin (picrasmin) in P. excelsa, 
quassin 0.2%, quassinol, quassimarin,(3) 18- 
hydroxyquassin, neoquassin, a dihydronorneoquis- 
sin(4) and simalikalactone D in Q. amara.

Coumarins Scopoletin.(1)

Other constituents β-Sitosterol, β-sitostenone; thia- 
mine 1.8% (in P. excelsa).

Food Use
Quassia is listed by the Council of Europe as a natural 
source of food flavouring (category N2). This cate- 
gory indicates that quassia can be added to foodstuffs 
in small quantities, although the concentration of 
quassin must not exceed 5 mg/kg; a concentration 
of 50 mg/kg is permitted in alcoholic beverages and 
10 mg/kg in pastilles and lozenges.(G16) In the USA, 
quassia is regarded by the Food and Drugs Adminis-
tration (FDA) as GRAS (Generally Regarded As Safe).

Herbal Use
Quassia is stated to possess bitter, orexigenic, sialo-
gogue, gastric stimulant and anthelmintic properties. 
Traditionally, it has been used for anorexia, dyspep-
sia, nematode infestation (by oral or rectal adminis-
tration), pediculosis (by topical application), and 
specifically for atonic dyspepsia with loss of appe-
tite.(G2,G6,G7,G8,G64)

Dosage
Dried wood 0.3–0.6 g or by cold infusion three 
times daily.(G6,G7)

Concentrated Quassia Infusion (BPC 1959) 2–4 mL. 
Quassia Infusion is prepared by diluting one volume 
of Concentrated Quassia Infusion to eight volumes 
with water.

Tincture of Quassia (BP 1948) 2–4 mL.

Enema 150 mL per rectum (infusion with cold 
water, 1 in 20) on three successive mornings together 
with 16 g magnesium sulfate by mouth.

Pharmacological Actions
The quassinoids are reported to possess bitter proper-
ties 50 times greater than quinine.(G22)

In vitro and animal studies
The β-carboline alkaloids have exhibited positive 
inotropic activity in vitro.(1) Canthin-6-one is 
reported to possess antibacterial and antifungal 
activity. Cytotoxic and amoebicidal activities 
(assessed against guinea-pig keratinocyte and Enta-
moeba histolytica test systems, respectively) have 
been documented for canthin-6-one and quassin (P. 
excelsa). (5) However, later studies have disputed any 
a moebicidal action. Quassin is reported to be inactive 
against P388 leukaemia and 9KB test systems. Signif-
icant antitumour activity in mice against the P388 
lymphatic leukaemia and in vitro against human
carcinoma of the nasopharynx (KB) has been documented. Quassimarin and simalikalactone were both isolated from the active extract.

Clinical studies
The successful treatment of 454 patients with head-lice has been documented for quassia tincture. Quassia has been used as an enema to expel thread-worms.

Side-effects, Toxicity
No side-effects have been reported in 454 patients who used quassia tincture as a scalp lotion to treat headlice. Large doses of quassia may irritate the stomach and cause vomiting.

Contra-indications, Warnings
Excessive doses may interfere with existing cardiac and anticoagulant therapies. However, the coumarin concentrations in quassia are not thought to pose a hazard. In addition, large doses of quassia are emetic and therefore excessive consumption is self-limiting.

Pregnancy and lactation In view of the reported cytotoxic and emetic activities, the use of quassia during pregnancy and lactation is best avoided.

Pharmaceutical Comment
The chemistry of quassia is well studied and is characterised by bitter terpenoids (quassinoids) and β-carboline indole alkaloids. Limited data have been documented to justify the traditional herbal uses although the bitter principles support the use of quassia as an appetite stimulant in anorexia. However, in view of the documented cytotoxic activities and limited toxicological data, quassia in herbal remedies should not be taken in amounts greatly exceeding those used in foods.

References
See also General References G2, G6, G9, G12, G16, G22, G29, G36, G37, G41, G43, G56 and G64.

5 Harris A, Phillipson JD. Cytotoxic and amoebicidal compounds from Picrasma excelsa (Jamaican Quassia). J Pharm Pharmacol 1982; 34: 43P.