Galbulimima bark and ethnomedicine in Papua New Guinea

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Summary

This article reviews the literature and current information on the use of Galbulimima bark in traditional medicine in Papua New Guinea. Galbulimima bark is used in Papua New Guinea as an analgesic, to treat fever or to get rid of head lice. It is used in divination to produce trance-like states for counteracting malevolent power that is thought to be the cause of a variety of illnesses. Galbulimima bark has also been chewed, or drunk as a decoction, to induce visions and a dream-like state. It is also chewed and then rubbed on the legs before fighting.

Introduction

Ethnomedicine is the systematic, multidisciplinary scientific investigation of traditional medical systems (1). It involves correlating and integrating scientific data offered by a wide variety of different disciplines such as anthropology, archaeology, botany, chemistry, history, linguistics, medicine, pharmacology, toxicology and zoology (2). Early pioneering research on ethnomedicine was conducted in the 1960s by American anthropologist Leonard B. Glick (3), who studied traditional medical systems in the Papua New Guinea highlands (4). Many medicinal plants are used in ethnomedicine in Papua New Guinea (5-14). Medicinal plants used in Papua New Guinea include Acorus calamus L. (15), Homalomena spp. (16), Kaempferia galanga L. (17), Zingiber zerumbet Roscoe (18) and Cannabis sativa L. (19). There is increasing scientific interest in the use of the bark of the rainforest tree Galbulimima belgraveana (F. Muell) Sprague in ethnomedicine in Papua New Guinea (20,21). In Papua New Guinea, Galbulimima bark is used in traditional medicine as an analgesic or antipyretic; for skin conditions and poisoning; as an antiparasitic against head lice; in the diagnosis of illness; to produce visions or a dream-like state; and before fighting (22).

Analgesic and antipyretic

The people of Aseki in the south of Morobe Province use waga, the local name for Galbulimima bark, as an analgesic by first chewing the bark then spitting it out into a bowl, mixing salt with it and then swallowing it again to relieve pain (23). In the West Sepik Province, the Oksapmin people use Galbulimima bark as an antipyretic in the treatment of fever (24).

Skin conditions and poisoning

The Oksapmin people of the West Sepik Province use alusa, shredded Galbulimima bark mixed with wild ginger (Zingiber spp.), in the treatment of diseases caused by sorcery and witchcraft, including skin conditions and poisoning (24).

Antiparasitic against head lice

In Morobe Province, Galbulimima bark is mixed with tobacco leaves (Nicotiana
When people dream of an animal, plant or natural phenomena which allows transmission of attributes and qualities of information about difficult situations or visions which are revealed while in a trance-like state during which euphoria and then drowsiness.

**Diagnosis of illness**

*Galbulimima* bark is used in Papua New Guinea for divination and to produce trance-like states and visions among the Gimi people of the Eastern Highlands (4). Among the Gimi, *Galbulimima* bark, incorrectly identified as *Himantandra*, is used in ethnomedicine to counteract malevolent power which is thought to be the cause of a variety of illnesses. When an illness is believed to be caused by sorcery, the Gimi seek the assistance of the *aona bana* (man of power), who is regarded as having extraordinary natural healing abilities. For the Gimi, the term ‘*aona*’ has a variety of different meanings depending on the context of its use. For example, *aona* can mean ‘soul’, ‘shadow’, ‘vital force’ or ‘familiar spirit’. Animals, plants and natural phenomena are also thought of as possessing an *aona*. When people dream of an animal, plant or other natural phenomena, it is the *aona* that is believed to have manifested itself. After initially experiencing an *aona*, the Gimi expect to contact this same *aona* in dreams throughout the rest of their lives. There is a symbolic correspondence of human *aona* with natural *aona*. Spiritual and symbolic bonds are created between people’s *iuna* (plural of *aona*) and those of animals, plants and other natural phenomena which allows the transmission of attributes and qualities of the one to the other. *Iuna* are the source of information about difficult situations or future events which are revealed while in a trance-like state. The Gimi *aona bana* have chewed the bark of *Galbulimima belgraveana* to induce this trance-like state during which information is received from *iuna*.

**Visions**

*Galbulimima* bark has been chewed with the leaves of an unidentified *Homalomena* sp. (Araceae) by the people of the Okapa region, Eastern Highlands Province (17). The chewing of *Galbulimima* bark (*agara*) and *Homalomena* leaves is reported to induce visions and a dream-like state (25). The physical effects of chewing *Galbulimima* include violent tremor and miosis. The visions and violent tremors last for about an hour followed by a sense of calmness, euphoria and then drowsiness.

**Fighting**

*Galbulimima* bark and leaves are also used among the peoples of the Eastern Highlands Province to make young men fierce (5). For this purpose, it is masticated and rubbed on the legs before fighting (26).

**Prospects**

The *Galbulimima* alkaloids have recently become the focus of considerable attention in Western biomedical research as a potential source of new pharmaceutical drugs (27). The pharmacological activity of the *Galbulimima* alkaloids is a result of these alkaloids’ actions on muscarinic cholinergic receptors (parasympathetic nervous system) (28). The *Galbulimima* alkaloids have muscarinic receptor antagonist activity with affinity for the M₄ receptor (29). *Galbulimima* alkaloids like himbacine have been proposed as pharmaceutical treatments of Alzheimer’s disease and cardiac brachycardias (30) and to reduce intraocular pressure. More systematic, multidisciplinary scientific research on the uses of *Galbulimima* bark in ethnomedicine in Papua New Guinea is required in the future (31). This research has the potential for the discovery, design and development of new pharmaceutical drugs for use in biomedical research for the treatment of a variety of medical conditions.

**REFERENCES**


