Macropiper Excelsum - Maori Kava

- Piperaceae - New Zealand

Introduction

When the Maori first settled in New Zealand (Aotearoa) from Polynesia in the north-east almost 800 years ago (the Maori navigator Kupe first visited Aotearoa approximately 1000 years ago), they gave Polynesian names to local plants and animals that seemed similar to plants and animals that they were already familiar with. An example is the naming of a plant they discovered in New Zealand as kava (or kavakava), after the sacred plant Piper methysticum Forst. which is found on various islands across the South Pacific, from New Guinea through to Hawaii. This New Zealand species of kava, Macropiper excelsum (Forst.f.) Miq., is in the same family and has a slight resemblance to the Kava of Polynesia, P. methysticum. This resemblance would have led, in the early days of the Maori colonisation of New Zealand, to the usage of the newly discovered Maori Kava in a way similar to the usage of the old Kava. However the effects of P. methysticum are based on a variety of chemicals in its rhizome, and M. excelsum contains a different group of chemicals which would produce different and unexpected effects on any Maoris who produced and then consumed a drink produced from this Maori Kava.

There are three subspecies of Macropiper excelsum (Forst.f.) Miq.: M. excelsum ssp. psittacorum (Endl.) Sykes which is found on Lord Howe Island, Norfolk Island and Kermadec Island; M. excelsum ssp. peltatum Gardner on the islands offshore from the north coast of New Zealand's North Island; and M. excelsum ssp. excelsum which is found on the two main islands of New Zealand and on the Chatham Islands (GARDNER 1997). This subspecies from the New Zealand mainland is the variety used by the Maori in their medicines and rituals.

Maori kava as a medicinal plant

The Maoris made extensive use of their Kava for treating many problems and injuries. A review of its medicinal uses by BROOKER et al. (1981): Leaves — as tea: bladder problems, blood purifier, boils (also as topical), bruises, colds, diuretic, eczema (also as topical), gonorrhoea (also as topical), to stimulate the kidneys, paipai (skin affection), stomach pains, tonic, toothache (also chewed); as topical: rheumatic pain, swollen face. The fruit is used as diuretic, and in the toothache as tea or chewed; the roots in the toothache as tea or chewed; the whole plant as aphrodisiac and stimulant.

Reports of Maori usage go back as far as 1860's when it was noted that an infusion of the leaves was used to cure toothache (ARMSTRONG 1869). The most prevalent method of usage being a decoction of the leaves made into a tea and then drunk to treat many different health problems, and sometimes

the bark of the tree was boiled along with the leaves and used both internally and externally as well. The roots were sometimes boiled and the liquid applied with ripe fruit directly onto sore teeth. The leaves of the Maori Kava were also used in making steam baths, or heated over a fire to extract their oil, which was then applied on boils, or their juice was extracted by roasting and used as wound dressing. There is also mention in BROOKER et al. (1981) of its usage as a tonic or an aphrodisiac and its effects were reported to be stimulating.

As can be seen from the wide and varied uses by the Maori of their kava, Maori Kava was a very important plant in their pharmacopoeia. However based on the chemistry of the leaves, Maori Kava can do more to humans in the right circumstances and with the correct preparation and dosage than just heal injuries

The chemistry and pharmacology of Maori kava
The active constituents were first identified by BRIGGS (1941) as the allyl benzene essential oils myristicin and elemicin. The leaves and terminal branchlets contain about 0.1% essential oil by steam distillation, composed of up to 41.3% myristicin, about 3.1% elemicin as well as minor amounts of pinene, phellandrene, aromadendrene, cadinene and other unidentified compounds (BRIGGS et al. 1975).

The essential oil of leaves of Maori Kava is very similar in composition to the oil derived from the seed of nutmeg (Myristica fragrans) which is said to possess psychoactive properties (SHULGIN 1966). The seed of nutmeg is composed of 10-15% volatile oil (the fraction of the seed which produces the entheogenic experiences) which is made up of the non-active terpenic fraction (composed mostly of pinene, sabinene and menthadiene), and an aromatic fraction, composed of about 7% myristicin, 2.3% elemicin, 1.3% safrole and lesser amounts of methyleugenol, methylisoeugenol, eugenol, isoelemicin and isomyristicin (SHULGIN et al. 1967). The essential oil myristicin is thought to be mostly, but not wholly responsible for the putative hallucinogenic effects of nutmeg. Elemicin may also be partly responsible for the hallucinogenic effects, having a possible synergistic effect with myristicin (SHULGIN 1966; SHULGIN et al. 1967).

The use and effects of nutmeg was surveyed by WEIL (1967), who reported they "vary from no mental changes at all to full-blown hallucinogenic experiences like those caused by hashish or LSD" and that "visual hallucinations are rather less frequent with nutmeg than with drugs like LSD or mescaline, but distortions of time and space perception with feelings of unreality are common.....Sensations of floating, being transported aloft, or having one's limbs separated from the body are frequently reported." From this it can be seen that the Maoris who first arrived in New Zealand and consumed Maori Kava in the belief that it would produce the relaxing, hypnotic effect derived from the consumption of P. methysticum, would have had a surprise. The effect of a preparation of the roots is unknown as their chemistry has yet to be investigated. The fruits and seeds of Maori Kava, while also chemically untested, are considered to have a stronger medicinal effect than the leaves (BABER 1887). The chemistry of the fruits and seeds is probably very similar to the chemistry of the leaves, based on the fact that the leaves have a hot peppery flavour which is produced by myristicin (BRIGGS 1941), and the fruits and seeds are also known to have the same hot peppery flavour (GARDNER 1997).

Since a large part of this theory that Maori Kava is a Maori entheogen is based on a similarity to the chemistry and effects of nutmeg, it is worth noting a survey by VAN GILS & COX (1994) on the usage of nutmeg by the indigenous Spice Islanders. These authors found that nutmeg was used to treat stomach and kidney disorders as well as treating rheumatism, vomiting, whooping cough and flatulence. It was also used as an aphrodisiac and a stimulant.

Many of the allyl benzenes are precursors to what are termed the "essential amphetamines," the most famous example being the product of the conversion of the essential oil safrole into the psychoactive drugs MDA and MDMA, the latter commonly known as "ecstasy". Myristicin is a chemically similar allyl benzene and is the precursor to MMDA, while elemicin is the precursor to the essential amphetamine TMA (SHULGIN & SHULGIN 1991).

The persecution of the use of Maori kava as entheogen
Little information is available on how the Maoris utilised their native Kavakava ritually, apart from the drinking of a beverage known as "kava" made from the roots and leaves (ARMSTRONG 1869) and also the use of kava in religious ceremonies (TREGEAR 1891). This lack of information is due to the persecution of the tohungas (Maori healers or shamans) in 1907. The tohungas performed secret rituals and used plants to acquire followers, a practice which was banned by the New Zealand Parliament when the Tohunga Suppression Act was enacted in 1907 (METGE 1967), to prevent the tohungas "from imposing on the credulity and superstitions of the people" (BROOKER et al. 1981). This law was repealed in 1963 as unfairly discriminating between Maori and Pakeha (Pakeha is a New Zealander of European ancestry) faith-healers, and also because few successful prosecutions were ever made under this law (METGE 1967).

This persecution of the Maori shamans who used entheogens in their rituals is only one of a long series of examples throughout history in what OTT (1995) terms the Pharmacratic Inquisition, "the Christian persecution of archaic religions based on sacramental ingestion of entheogenic plants and the consequent personal access to ecstatic states." The Spanish prohibition of the Aztec usage of entheogens including peyote, morning glories and psilocybian fungi as well as persecution of European witches who used various entheogenic solanaceaeous plants are just two examples of Pharmacratic Inquisition. Although the persecution of the Tohunga was not in the same league, it was nevertheless comprehensive enough to hide any knowledge of Macropiper excelsum being a psychedelic/entheogen, so that the current New Zealand counterculture and sections of the general Maori population who have extensive knowledge about native entheogenic fungi, have no knowledge about Maori Kava, the other native psychoactive vegetal agent growing in New Zealand.

Other South Pacific Macropiper species
Two other species of Macropiper from the South Pacific are worthy of further investigation. The "false kava" of Vanuatu, Macropiper latifolium (L. f.) Miq., has been used as a medicine, such as its usage for ethnogynecological purposes (BOURDY & WALKER 1992) and it is known to be rich in the essential oil ß-asarone in its root (LEBOT & LEVESQUE 1989).

The other species is Macropiper hooglandii Hutton & Green from Lord Howe Island which has a peppery taste in its seeds and leaves (GREEN 1993) as well as in its fruit (GARDNER 1997). This would seem to be similar to the

peppery taste of Maori Kava, indicating that it probably has myristicin in its essential oil as myristicin is responsible for the hot flavour in Maori Kava (BRIGGS 1941). There is no history of usage of M. hooglandii as either an entheogen or a medicinal plant as the first colonists of Lord Howe Island were Europeans who do not seem to have tested the native plants extensively for their activity.

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