De Plantis Toxicariis e Mundo Novo Tropicale
Commentationes XXXVI. Justicia
(Acanthaceae) as a Source of an
Hallucinogenic Snuff

RICHARD EVANS SCHULTES

The history of use, botanical identification, and known chemical constituents of
Justicia pectoralis (Acanthaceae), one of the South American hallucinogens, are
reviewed.

There has long been uncertainty concerning the role played by leaves of the
genus Justicia in South American hallucinatory preparations—whether merely as
additives to snuff-powder made basically from Virola theiodora or alone as the
source of a psychoactive snuff.

Perhaps the first reference to Justicia based on identifiable botanical material
as having a role in psychotropic snuffs in South America was published in 1967
(Schultes 1967).

There are numerous references in the literature to the small, herbaceous plant
known to the Waikas as masha-hiri or a close variant of this name. All the earliest
references cited no botanical collections.

What appears to be the first report is that of Barker (1953), a missionary amongst
the Venezuelan Waikas, who stated that these Indians had various kinds of yopo
difficulties prepared from leaves, bark, and ashes of a bark; the reference
to “leaves” may concern Justicia, but there is no certainty.

The ethnologist Zerries (1960) indicated that an herbaceous plant was added
to the epena snuff. The anthropologist Becher (1960) wrote that the Surarí and
Pakidáí, Waika groups in northwestern Brazil, added a cultivated member of the
pepper family (Piperaceae) called maxaraha to Virola-snuff; this “identification”
is probably the first attempt at a botanical determination, even though it was not
based on specimens of the plant. Seitz (1965, 1967) reported that, in a Waika
settlement on the Rio Maturacá in Brazil, “we saw that a third ingredient was
added to the preparation of Virola-snuff with the ashes of ama-asita—later iden-
tified as Elizabetha princeps [Schultes and Holmstedt 1968]—the little leaves of
an herbaceous plant called mashi-hiri, like the epena scrapings and powdered.
These leaves, however, have no intoxicating effect. The Indians say they are merely
aromatic.”

Wilbert (1963) stated that the Karimé, culturally and geographically related to
the Waikas of the Orinoquia of Venezuela, are said to prepare a snuff from “a
small plant called kokoime.”

1 Received 22 August 1987; accepted 27 December 1988.
2 Botanical Museum of Harvard University, 26 Oxford Street, Cambridge, MA.

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In his extensive and detailed studies of the Waika, Zerries (1960, 1964) did not mention any plant that might be *Justicia*, but he did note Salathé's description of an unidentified plant of weak growth, called by the Karimé Indians *kokoime*; it is, he reported, “without a stem” and occurs in cultivated plots; the leaves are dried and powdered and used as a narcotic (Salathé 1932). This plant could be a *Justicia*.

Wassén (1966) reported that the Indians of the upper Orinoco prepare their *yopo* from three plants: *hisioma* (*Anadenanthera peregrina*), *masho-hara* (said to be a piperaceous species), and *bolek-hena* (a powder called “leaves of the spirit of death”).

In 1966, Biocca mentioned that *masci-hiri* is “an aromatic herbaceous plant” employed merely as an addition to the *Virola*-snuff amongst the Waikas.

Schultes (1967) reported the possible use of *Justicia* as an hallucinogen amongst Venezuelan Indians:

A number of years ago, a missionary working in the headwaters of the Orinoco in Venezuela handed me a partially rotted, matted roll of plant material which he said was the source of one of the narcotic snuffs of the Waika Indians. The condition of the material was very poor, but it seemed to represent a species of *Justicia*. This identification was tentatively corroborated by Dr. E. C. Leonard . . . I have never been able to visit this region to investigate the problem personally. With our unsatisfactory preservation of the material and the failure of other botanists who have visited the general region to report it . . . I more or less dismissed *Justicia* as a serious contender for inclusion in our list of hallucinogens. I am now, however, convinced that this problem must be investigated in the field, for recently, the Brazilian botanist, Prof. João Murça Pires, informed me personally that the Waikas do indeed employ a species of *Justicia*, a species close apparently to *Justicia pectoralis* [Fig. 1] in the preparation of a vision-producing snuff.

In 1968, Schultes and Holmstedt reported their ethnopharmacological study on the hallucinogens used in a Waika settlement (Wayhana-oo-thle) on the Rio Tototobi in the Territorio do Roraima, Brazil. They found these Waikas toasting the leaves of a *Justicia*, pulverizing them and adding the powder to the fine dust of the dried resin-like bark-exudate of *Virola theiodora*. These Indians know the plant as *masha-hara-hanak* (*hanak* meaning “leaf”); they also call the plant *booh-hanak*. They wrote that, when the natives dry and pulverize this dried exudate, a powder of the leaves of a plant called *mashi-hiri* is prepared. This . . . herb, cultivated in dense patches near the edge of the village [Fig. 2], is the acanthaceous *Justicia pectoralis var. stenophylla* [Fig. 3]. It is kept hanging in bunches from the house-beams [Fig. 4] and is, consequently, usually quite dry when needed. The whole plant is crushed between the hands, the powder is sifted to remove bits of the stem and other refuse [Fig. 5], and the resulting fine greenish dust is added to an equal amount of the brown *Virola*-powder. The *Justicia* plant is pleasingly aromatic as it hangs drying, and the prepared powder is even more highly aromatic. The natives assert that it is added to improve the smell of the final epena snuff (*Virola*) and that it is not active. While it is true that other groups of Waika prepare a potent *Virola*-snuff without the *Justicia*, preliminary chemical investigation . . . suggests that we may be unwarranted in assuming that it is an ingredient wholly devoid of pharmacological activity."

These preliminary chemical analyses indicated such a very minor concentration of tryptamines that Schultes and Holmstedt felt that perhaps, since they had handled the material of *Justicia* without washing their hands following the handling of the heavily tryptamine-bearing *Virola* specimens, they unwittingly had contaminated the specimens of *Justicia*. 