



CHAPTER I

INTRODUCTION

Ancistrocladus, Wall., the only genus in the *Ancistrocladaceae*,^(1,2) is a genus of woody climbing shrubs (often erect in youth) with short supra-axillary often arrested and circinately hooked branches,⁽¹⁻⁶⁾ formerly regarded as peculiar members of the family Dipterocarpaceae.^(3,7,8,9) They are found in West Tropical Africa, Tropical Asia and the Indian Archipelago⁽¹⁻⁶⁾ (Fig. 1).

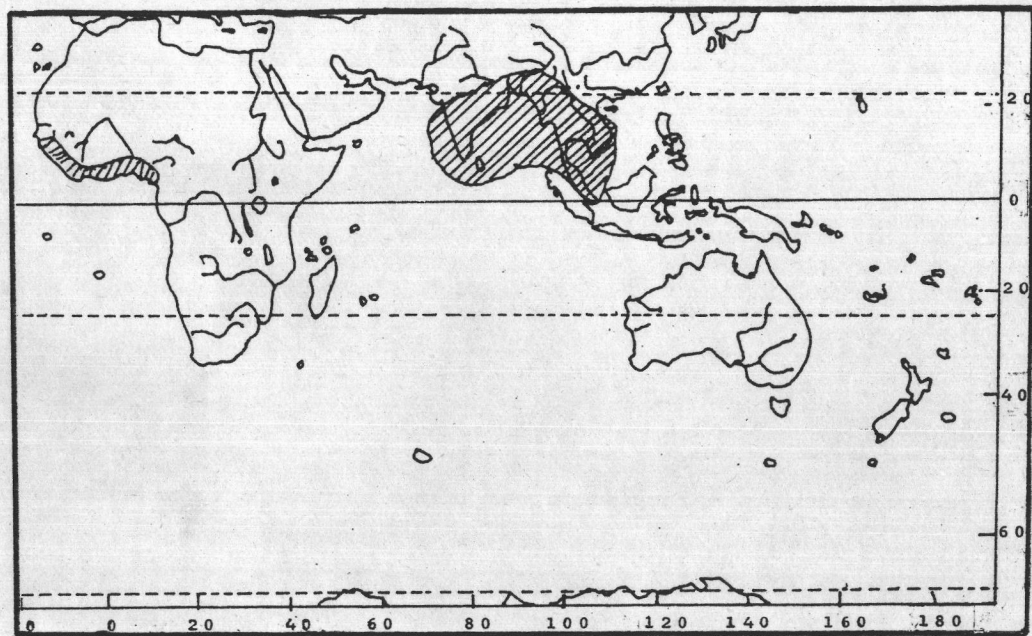


Figure 1. Distribution of *Ancistrocladus* Wall.⁽¹⁾

According to the Index Kewensis and its supplements⁽⁷⁻¹⁴⁾,
the genus comprises of 21 species as follows :

1. *Ancistrocladus abbreviatus* Airy Shaw*
2. *A. attenuatus* Dyer
3. *A. barteri* Van Tiegh*
4. *A. carallioides* Craib
5. *A. cochinchinensis* Gagnep.
6. *A. congolensis**
7. *A. ealaënsis**
8. *A. extensus* Wall.
9. *A. griffithii* Planch.
10. *A. guinéensis* Oliver*
11. *A. hainanensis* Hayata
12. *A. hamatus* Gilg. (*A. VahlII* Arn., *Wormia hamata*⁽⁵⁾ Vahl.)
13. *A. harmandii* Gagnep.
14. *A. heyneanus* Wall.
15. *A. likoko**
16. *A. pachyrrhachis* Airy Shaw*
17. *A. pinangianus* Wall.
18. *A. stelligerus* Wall. (*A. Wallichii* Planch.)
19. *A. tectorius* Merr. (*Bembix tectoria* Lour.)
20. *A. thwaitesi* Van Tiegh
21. *A. uncinatus* Hutchinson & Dalziel*

*are found in West Tropical Africa

[Formerly, *Ancistrocladus pentagynus* Warb. was identified as *Durandea* sp. (Linaceae)⁽⁶⁾ and *A. sagittatus* Wall. as *Tetramerista glabra* Miq. (Theaceae).^(5,6,7)]

The utility of this genus, except for some local information, is known for nothing. The tough stems of some of the species are used in Indo-China, for roofing boats, and might be used for coopering, and perhaps for seats of chairs. The roots of *A. extensus* Wall. (Burma and Malaya), after boiling, are said to be used in dysentery and malaria. In Thailand, the very young leaves of this species are eaten as a flavouring; when old they serve as thatch. The bark and leaves of *A. vahlii* Arn., of Ceylon, contain a poisonous alkaloid toxic to frogs. In the Andamans, its wood is used for arrows.^(3,4)

The *Ancistrocladus* found in Thailand are the species of *A. cochinchinensis* Gagnep., *A. extensus* Wall. ex Planch., *A. griffithii* Planch., *A. tectorius* Merr. and *A. wallichii* Planch., all of which are said to be the same species.⁽⁸⁾ At present *A. tectorius* is an accepted name.

Steenis *et al.* (1948)⁽⁶⁾ reported that *A. tectorius* (Lour.) Merr. is synonymous with *Bembix tectoria* Lour. *A. extensus* Wall. ex Planch., *A. pinangianus* Wall., *A. extensus* var. *pinangianus* King and *A. hainanensis* Hayata.^(3,6) Therefore, it is concluded that there is only one species of *Ancistrocladus* growing in Thailand and the author would like to report a species of *A. tectorius* (Lour.) Merr. (Fig. 2).

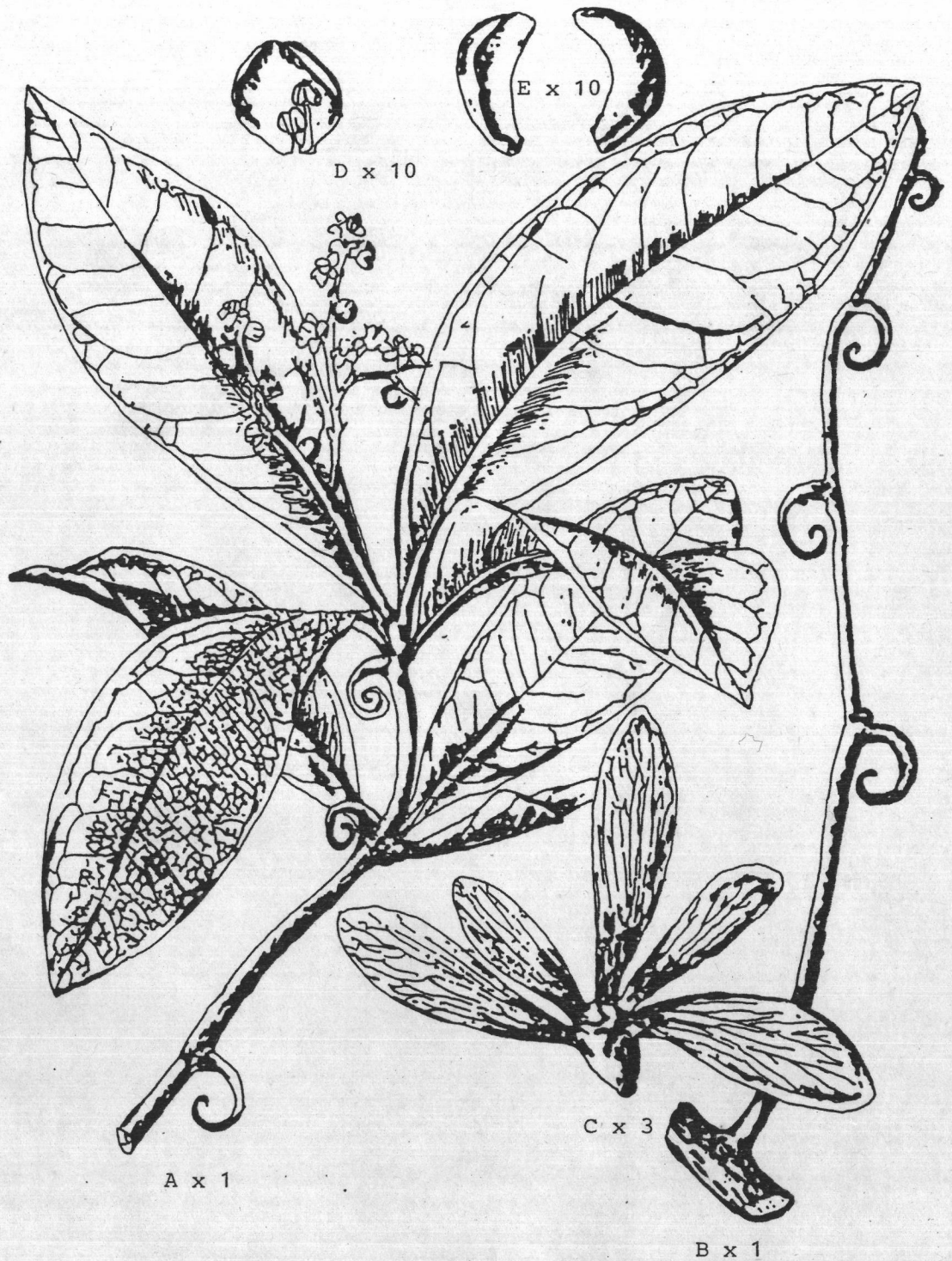


Figure 2. *Ancistrocladus tectorius* (Lour.) Merr.

A. stem and flowering twig, B. hooked branch, C. fruit
 D. petal and Stamens, E. sepals

(After Flora Hainanica, Tome I, 1964 p. 515)

This plant is known in various local names in Thailand as Kra-maa กระมา (Khmer-Saraburi); Khun-maa ขุนมา (Khmer-Surin); Khon tee-maa คอตันหมา (Yala); Khon maa khaao คอหมาขาว (Central); Khon maa daeng คอหมาแดง (Nakhon Ratchasima); Khansong คันทรง, Thong khansong ทองคันทรง (Chon Buri); Khon ma den โคนมะเดื่อ (Suphan Buri); Sin-ta-kophee ชินตะโกพลี (Karen-Lampang); Phan song พันทรง (Trat); Yuu-long ยูลง (Malay-Narathiwat); Li-daa-saa-pee ลิดาซาปี (Malay-Peninsular); Lin kwaang ลินกวาง, Lin khwaai ลินควาย (Lampang); Haang kwaang ทางกวาง (Nakhon Phanom); Huu kluuang หูกลวง (Prachin Buri) (15,16); the later name is probably named Huu kuuang หูกวง

Ancistrocladus tectorius (Lour.) Merr. is a woody climber of sandy land in the immediate neighbourhood of the sea, found from Burma, the Andamans, and Indochina to Southern China and Hainan, Malay Peninsula, Riouw & Lingga Archipelago, Anambas Island, West Dutch Borneo, Karimata, Banka, Billiton, and once collected in Southern Sumatra (Fig. 3). In the youth and in open scrub it is often a shrub, later often trailing; main shoots provided with scattered more or less erect small leaves, between and near which arise spreading non-foliate tendril-like shoots provided with 3-6 curved hooks, lower 2 rarely 3 hooks getting woody, hooks mostly unilateral, rarely 1-2 alternate; these 'tendrils' later woody, becoming branches, upper part vanishing. Leaves simple, alternate and crowded mostly immediately above the 2nd hook, variable in size and shape, mostly obovate-oblong, tapering towards the sessile petiole, apex obtuse, rounded, acute or even acuminate, blade 9-30 by 3-10 cm; nerves 4-8 on either side, spreading, connected by a slightly looped intramarginal vein and a 2nd feebler outer one, rather straight, numerous secondary veins often becoming

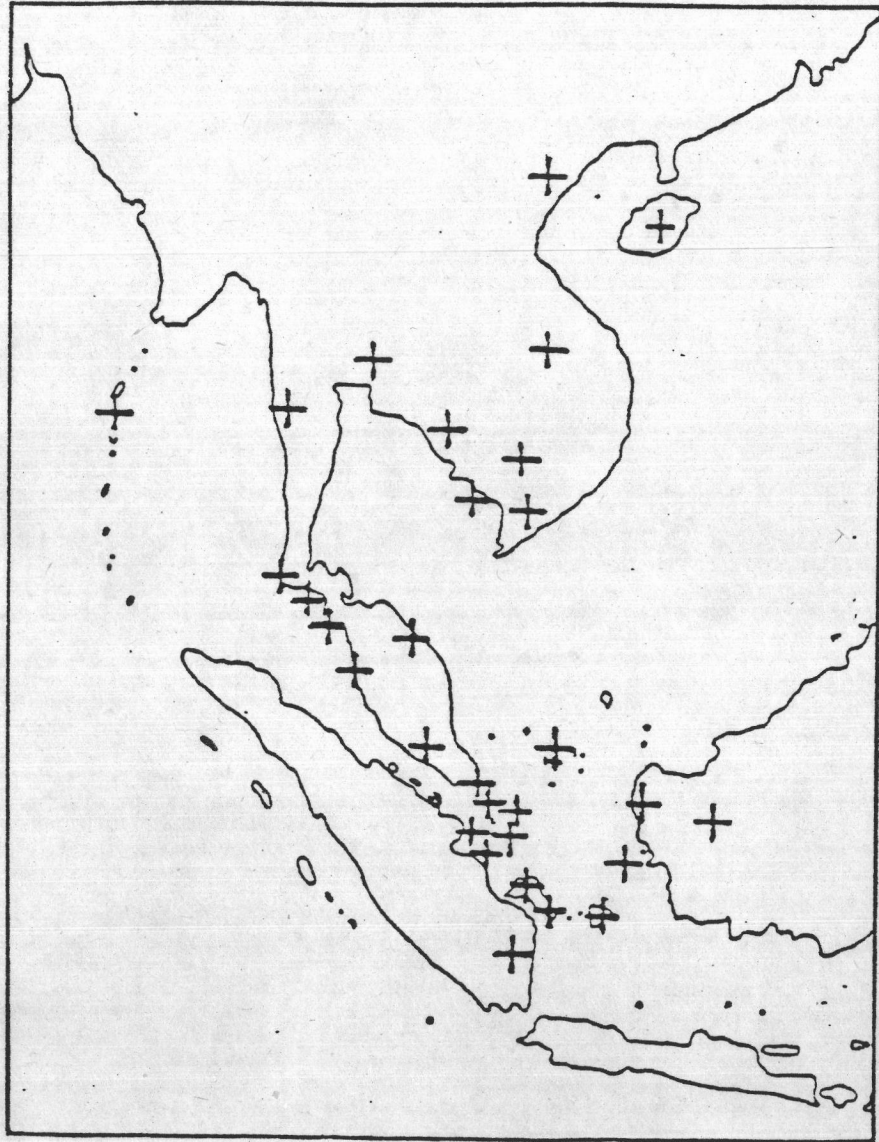


Figure 3. + Localities of *Ancistrocladus tectorius* (Lour.) Merr. (6)

as strong as the main nerves and parallel. The inflorescence lying between the crowded leaves, very rarely lateral in the place of a 'tendrill' on the main shoot, repeatedly dichotomous, branches divaricate, 8-15 cm long. Flowers small, regular, ♂, crowded at their tips. Calyx 5 lobes inequal, oval, thin-margined, glabrous except the short ciliate rounded apex, some or all lobes provided with 1-3 conspicuous crateriform prominent glands, mostly shorter than the corolla, $1\frac{3}{4}$ - $2\frac{1}{2}$ mm long, soon enlarging. Petals 5, reddish color, oblique-oval, one margin often involute, acute, $3 - 3\frac{1}{2}$ by $1\frac{3}{4}$ mm. Styles erect, nearly as long as the nipple-shaped ovary-top, both $\frac{1}{2}$ mm high, stigma punctiform. Stamens 10, alternately inequal; filament broadened at the base; cells free, acute, more or less latrorse. Fruit dry, woody, indehiscent, surrounded by 5 spreading reddish, unequally enlarged calyxes. Seed large, obconical with flat-apex, mostly consisting of a ruminant endosperm. (6,16,17)

In Thailand, this plant is widely distributed in evergreen forest. The young leaves are edible as vegetable. The folk-lore medicines in the eastern part of Thailand and Prachin Buri, its decoction is used as medicinal bath for the treatment of oedema and urticaria. (16,17)

The first species to be studied in detail in phytochemistry is *Ancistrocladus heyneanus* Wall., the only representative of this genus in India. In 1970 this plant was investigated by Govindachari *et al.*, which led to the discovery of ancistrocladine, a new type of isoquinoline alkaloid. (18) Further studies, more compounds related to ancistrocladine were isolated from this species and others. (19-36)

There was a report of alkaloids present in the stems and leaves of *A. tectorius* (Lour.) Merr., collected in Malaya⁽³⁵⁾. Previous work on the stems and twigs of this plant has yielded ancistrocladeine⁽²⁸⁾, ancistrocladine, hamatine and ancistrocline⁽³⁶⁾. However, there have been no previous reports of any alkaloids isolated from the leaves of this plant.

Accordingly, this present investigation deals with the extraction, isolation and identification of alkaloid(s) occurring in the leaves in order to contribute our knowledge of the constituents containing in this species and to search for compound(s) which might exert physiological effects.