CHAPTER V

CONCLUSION AND RECOMMENDATION

In this work, it was reported that the oxindole alkaloids mitraphylline and isomitraphylline are present in the leaves, and pteropodine and isopteropodine are presented in the stem bark of Uncaria quadrangularis Geddes obtained from Chumpawn, Southern Thailand. All of these four oxindole alkaloids are of the closed E ring type; and have previously been isolated from species of Uncaria and Mitragyna of the subfamily Naucleae. Pteropodine and isopteropodine were reported as new alkaloids isolated from Uncaria pteropoda Miq. by Yeoh, Chan and Morsingh.[29]

The pharmacology of some of these alkaloids has been reported. Mitraphylline is a hypotensive and also exerts a general depressant effect, and in some respects resembles cocaine.[11]

Indole alkaloids are not found in the present work of Uncaria quadrangularis Geddes. It might be that the balance of indole and oxindole alkaloids varies with time so that the examination of plant material collected at regular intevals from the same plant throughout the year might give some indications of biogenetic changes. Further work should therefore be proceeded along this line.

A P P E N D I X

Code numbers of the alkaloids

S_1 = Isolated mitraphylline

S_2 = " isomitraphylline

S_3 = " pteropodine

S_4 = " isopteropodine

L = Crude extract from leaves

B = " " " stem bark

m = Authentic mitraphylline

im = " isomitraphylline

p = " pteropodine

ip = " isopteropodine

a = Silica gel G/Chloroform : Acetone (5:4)

b = " /Diethyl ether

c = " / " (developing twice)

ac = Acid layer fractions

mc = Mixture of alkaloidal crystals

1 = Benzene layer fraction 1

5 = " " 5

7 = " " 7

13 = " " 13

17 = " " 17

19 = " " 19

Detection

(a) Dragendorff's spray reagent

(b) 0.2 M anhydrous ferric chloride in 35% W/V perchloric acid spray reagent

Plates heated with a hot air stream from hair dryer for 15 minutes.

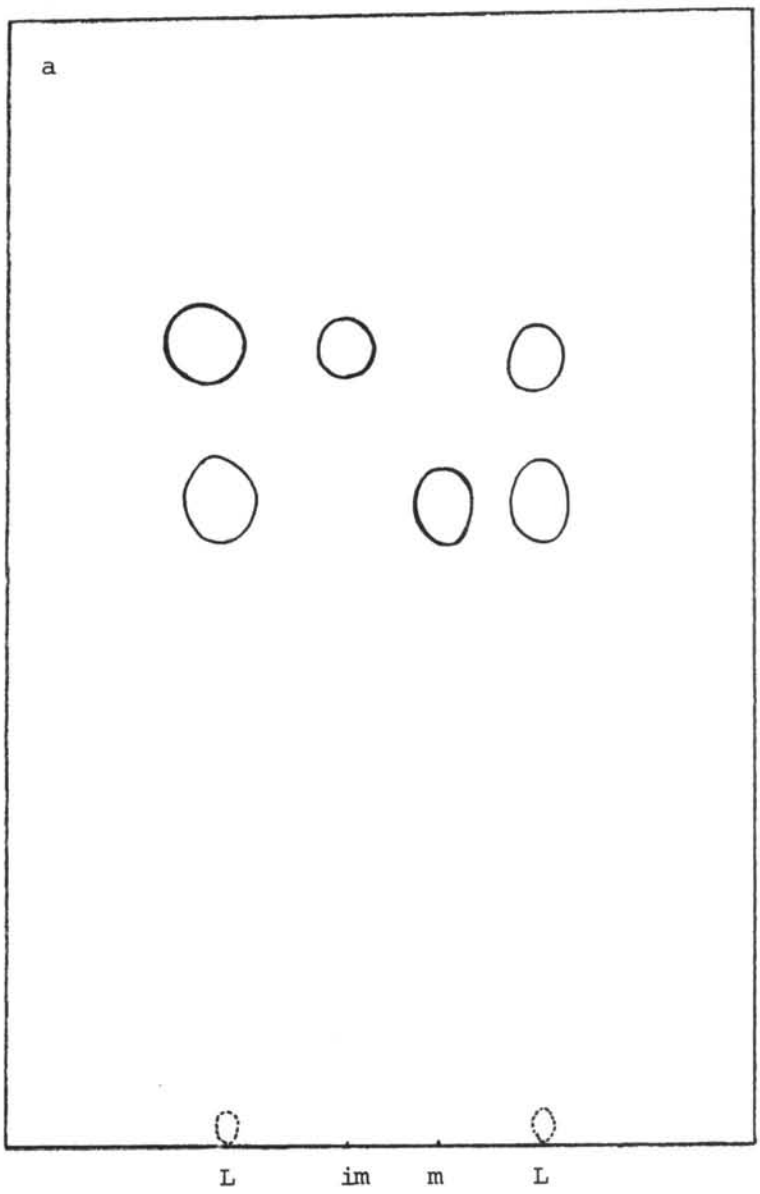

Figure V. Thin layer chromatogram of alkaloids from the leaves of Uncaria quadrangularis Geddes.

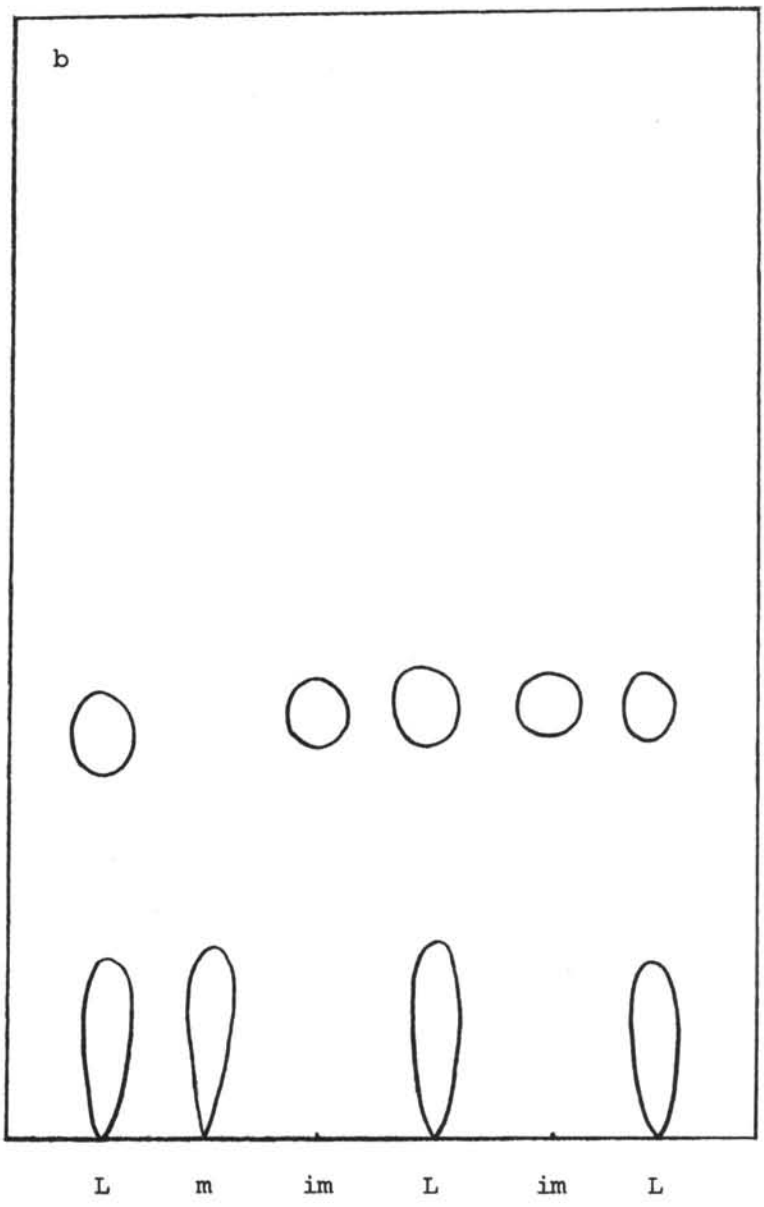

Figure VI. Thin layer chromatogram of alkaloids from the leaves of Uncaria quadrangularis Geddes.

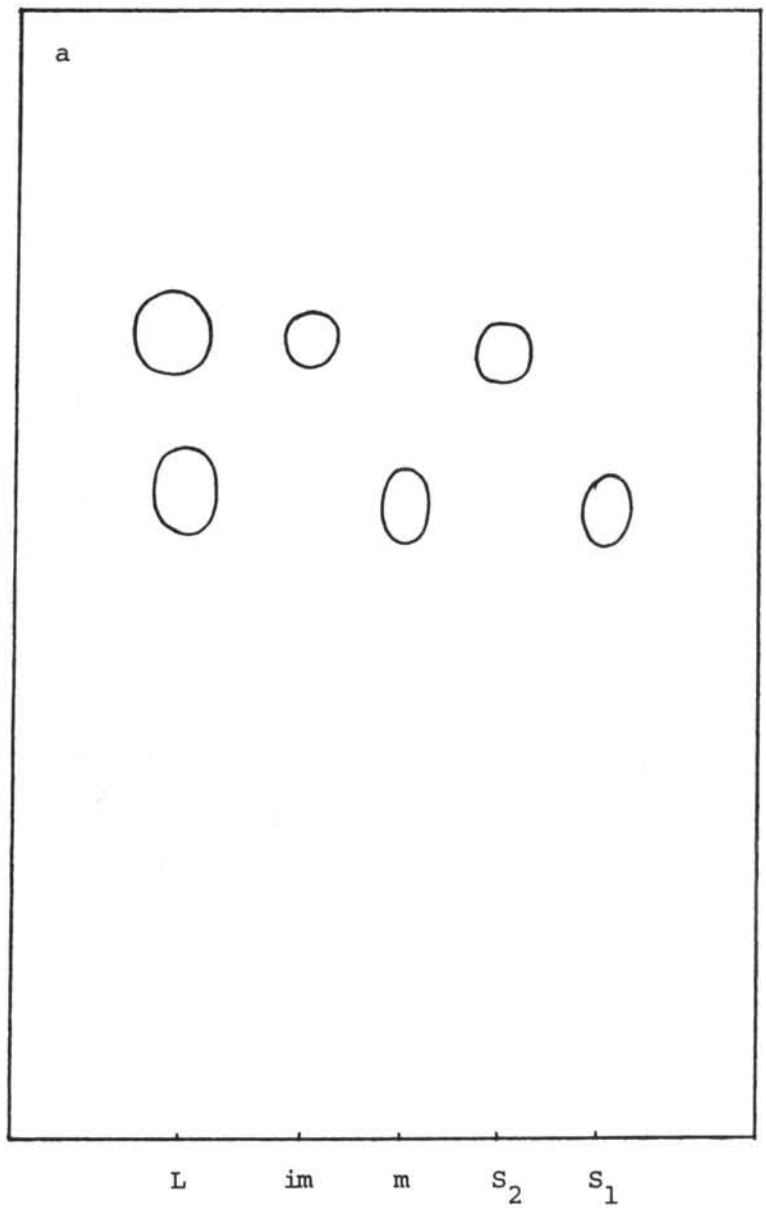

Figure VII. Thin layer chromatogram of alkaloids from the leaves of Uncaria quadrangularis Geddes.

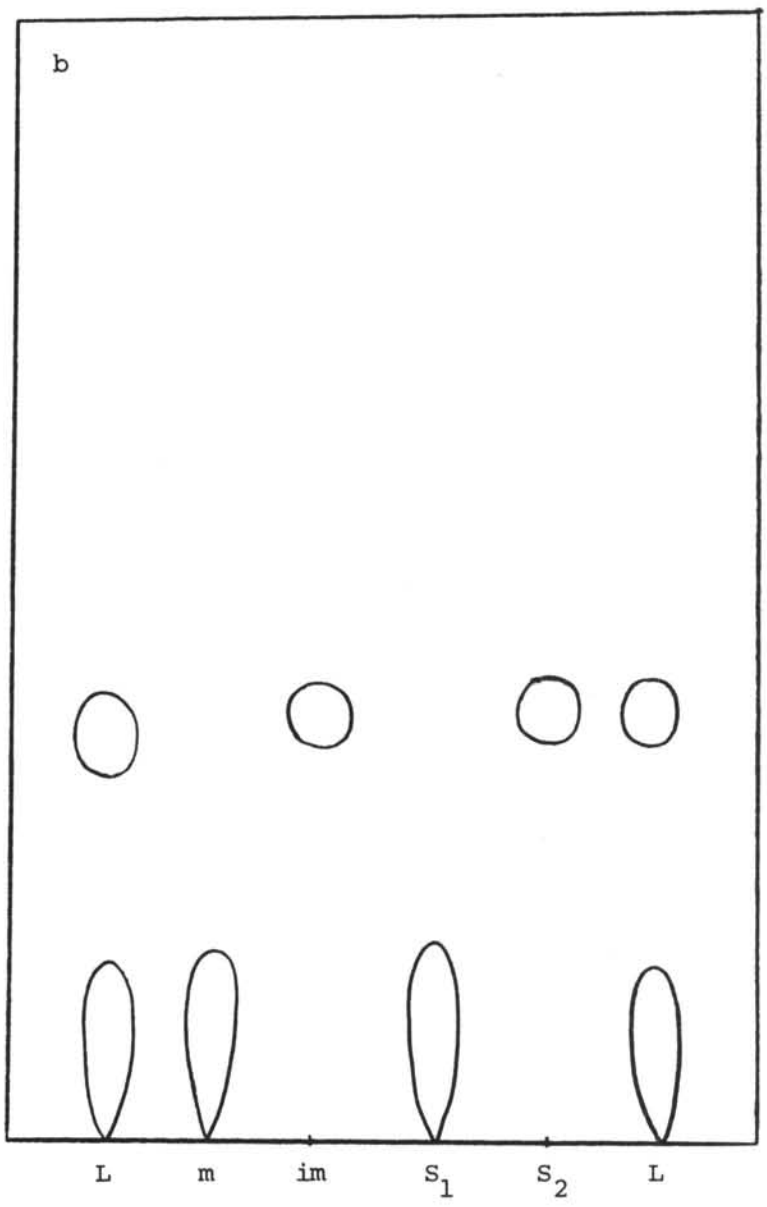

Figure VIII. Thin layer chromatogram of alkaloids from the leaves of Uncaria quadrangularis Geddes.

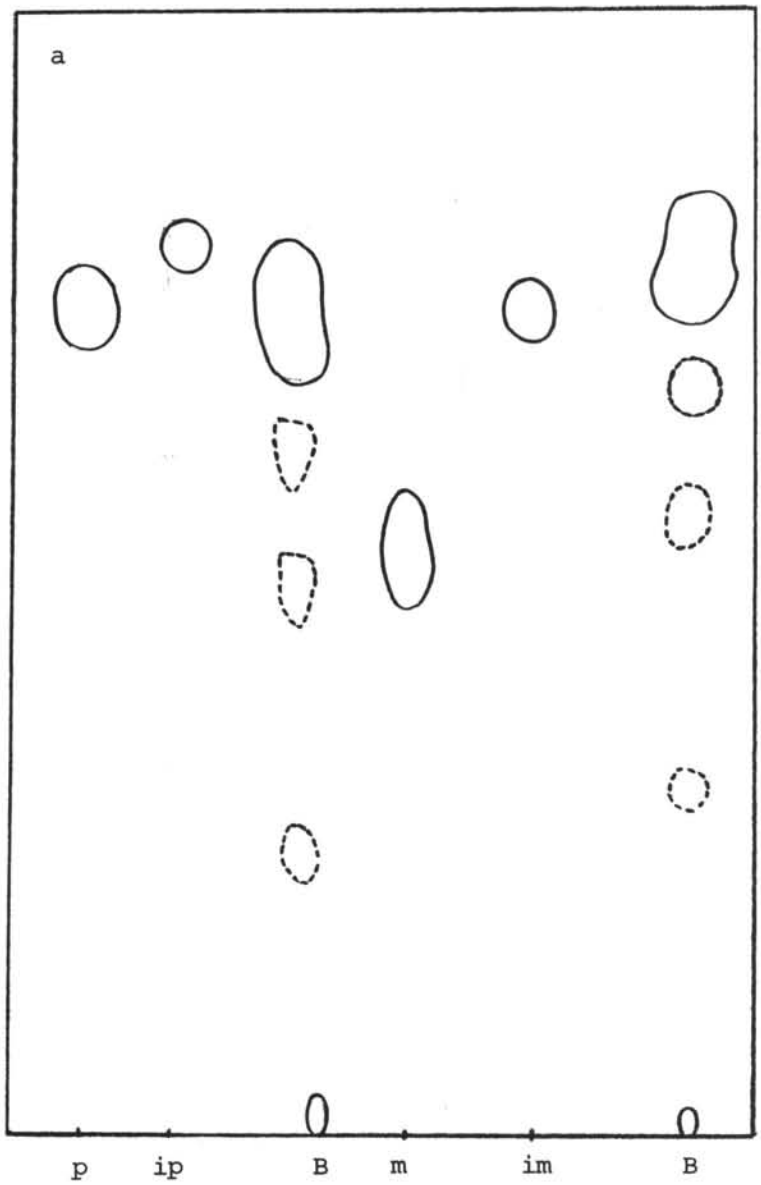

Figure IX. Thin layer chromatogram of alkaloids from the stem bark of Uncaria quadrangularis Geddes.

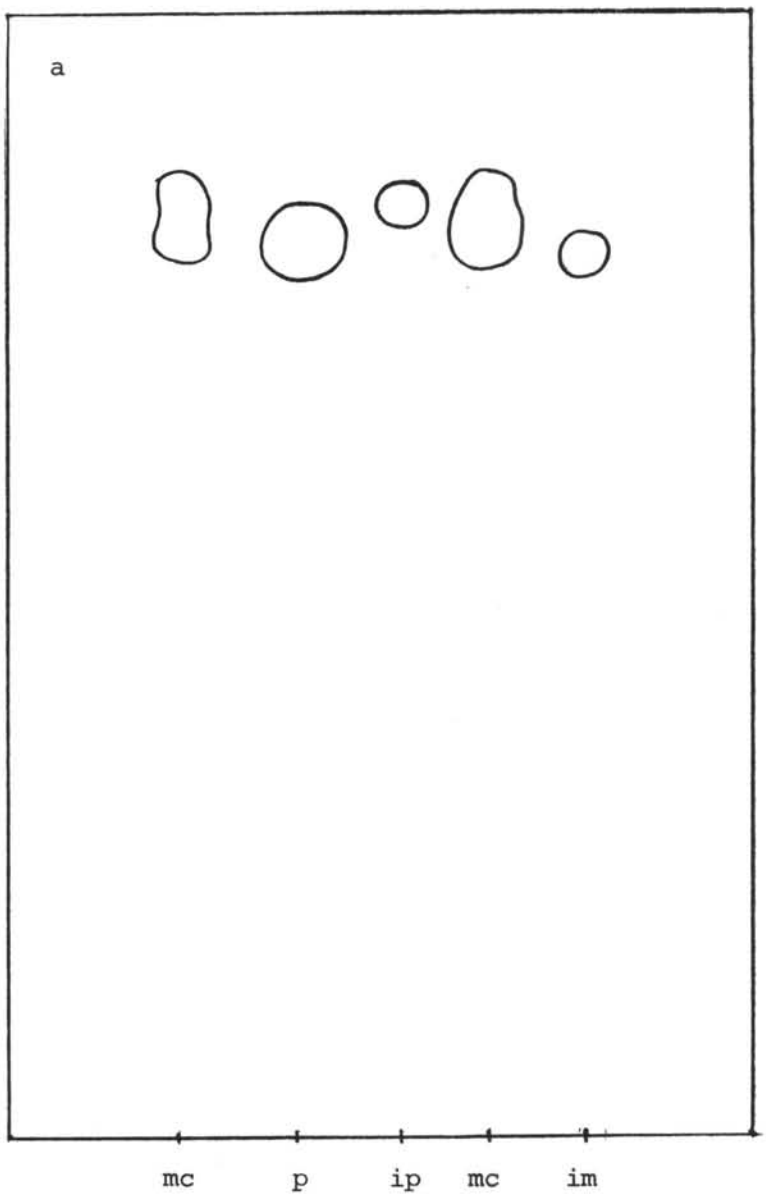

Figure X. Thin layer chromatogram of alkaloids from the stem bark of Uncaria quadrangularis Geddes.

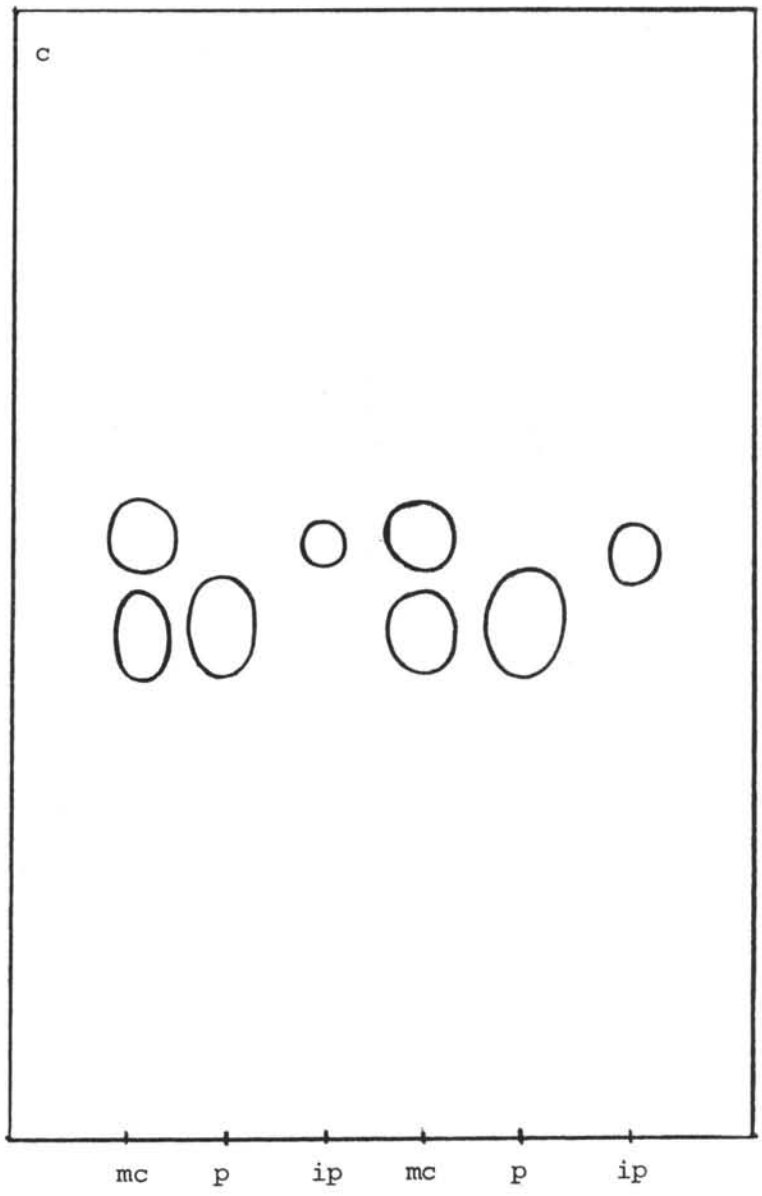

Figure XI. Thin layer chromatogram of alkaloids from the stem bark of Uncaria quadrangularis Geddes.

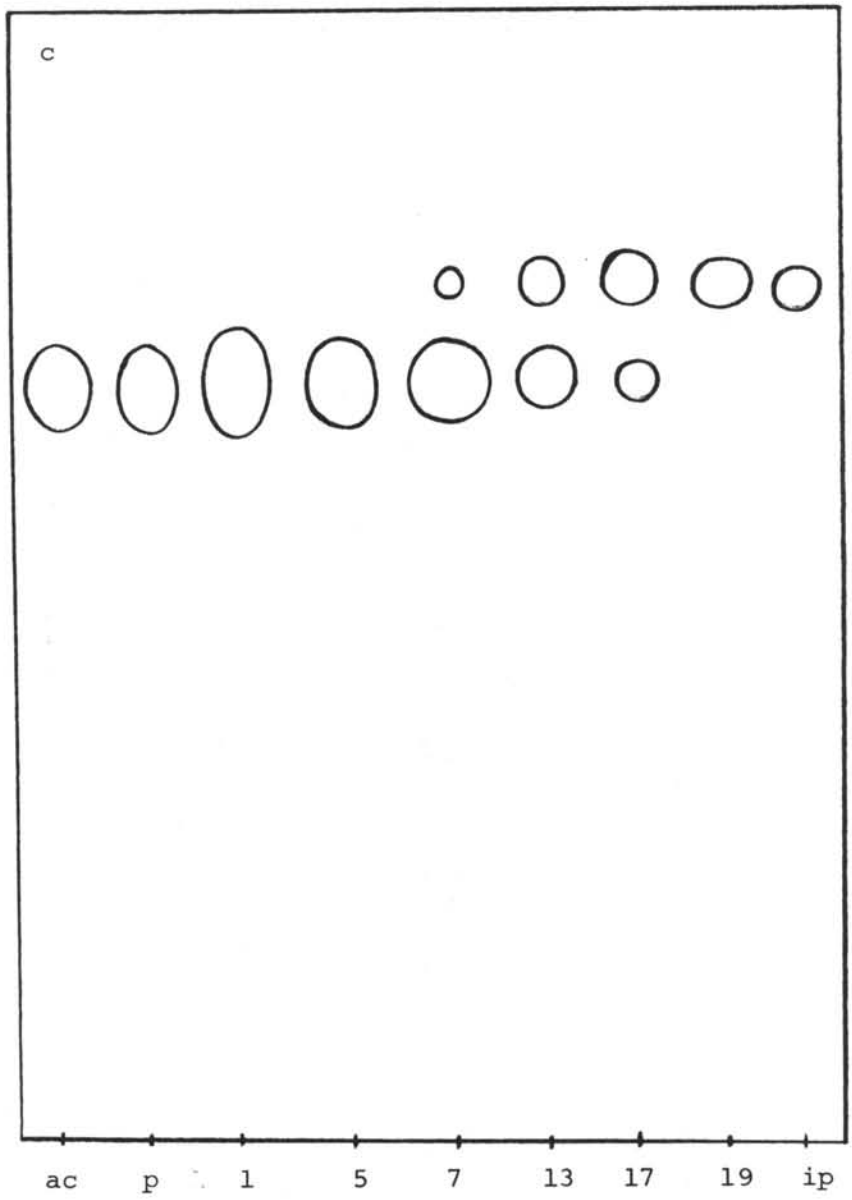

Figure XII. Thin layer chromatogram of alkaloids from the stem bark of Uncaria quadrangularis Geddes (after separation with benzene and acid solution).

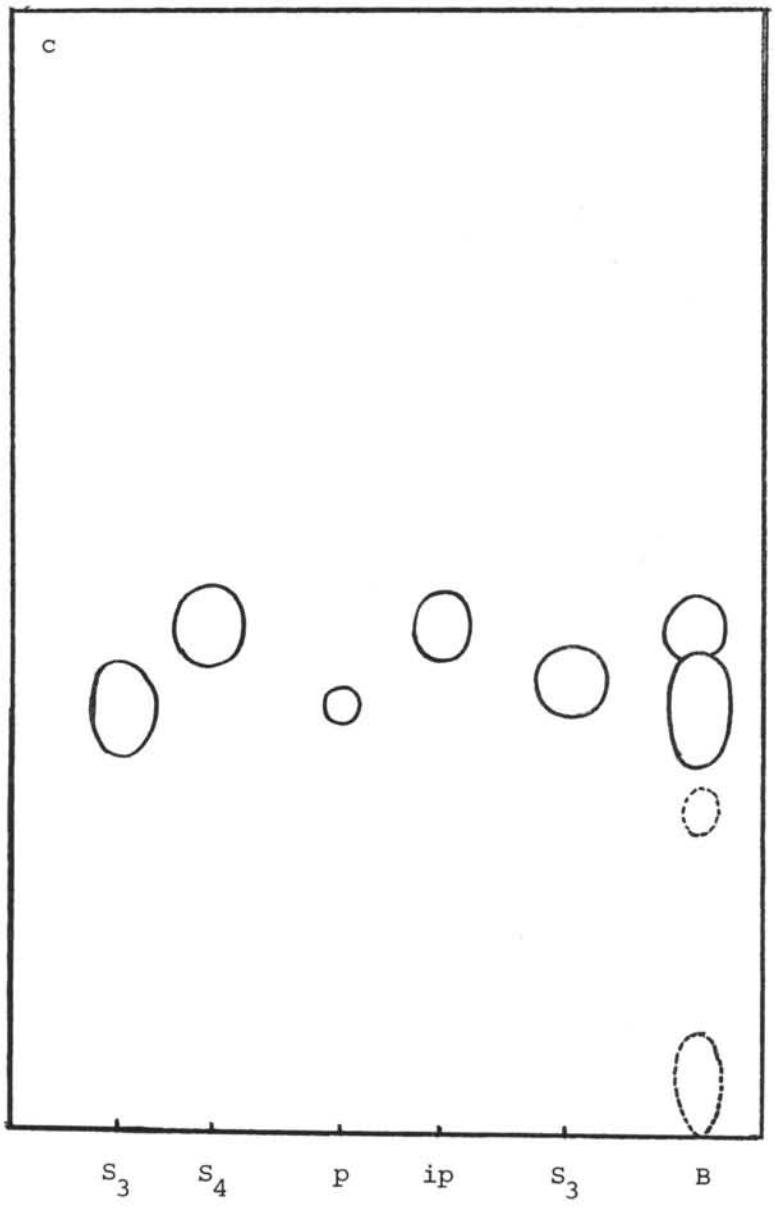

Figure XIII. Thin layer chromatogram of alkaloids from the stem bark of Uncaria quadrangularis Geddes.

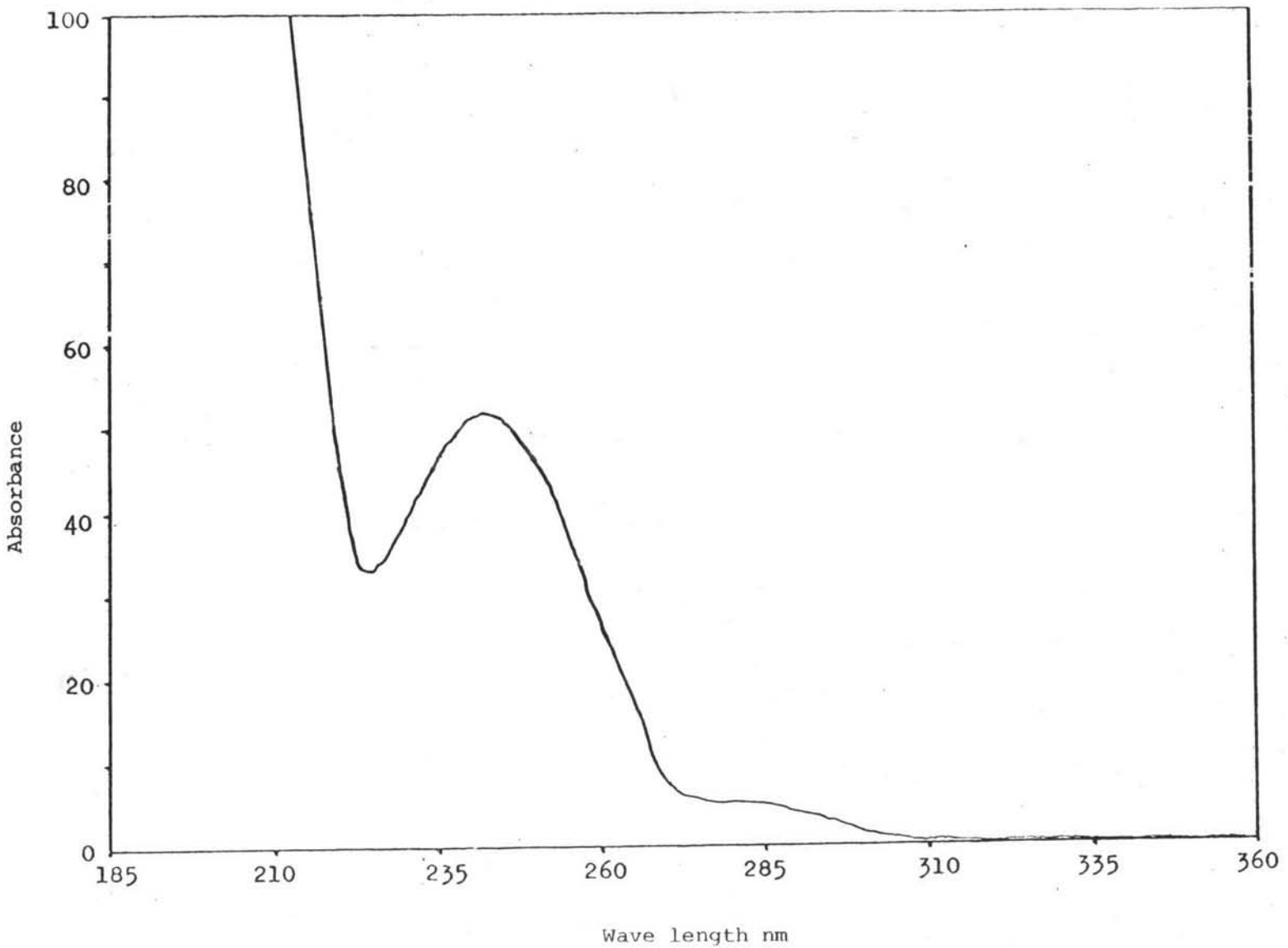

Figure XIV. Ultraviolet absorption spectrum of alkaloid S_1 from Uncaria quadrangularis Geddes leaves in ethanol.

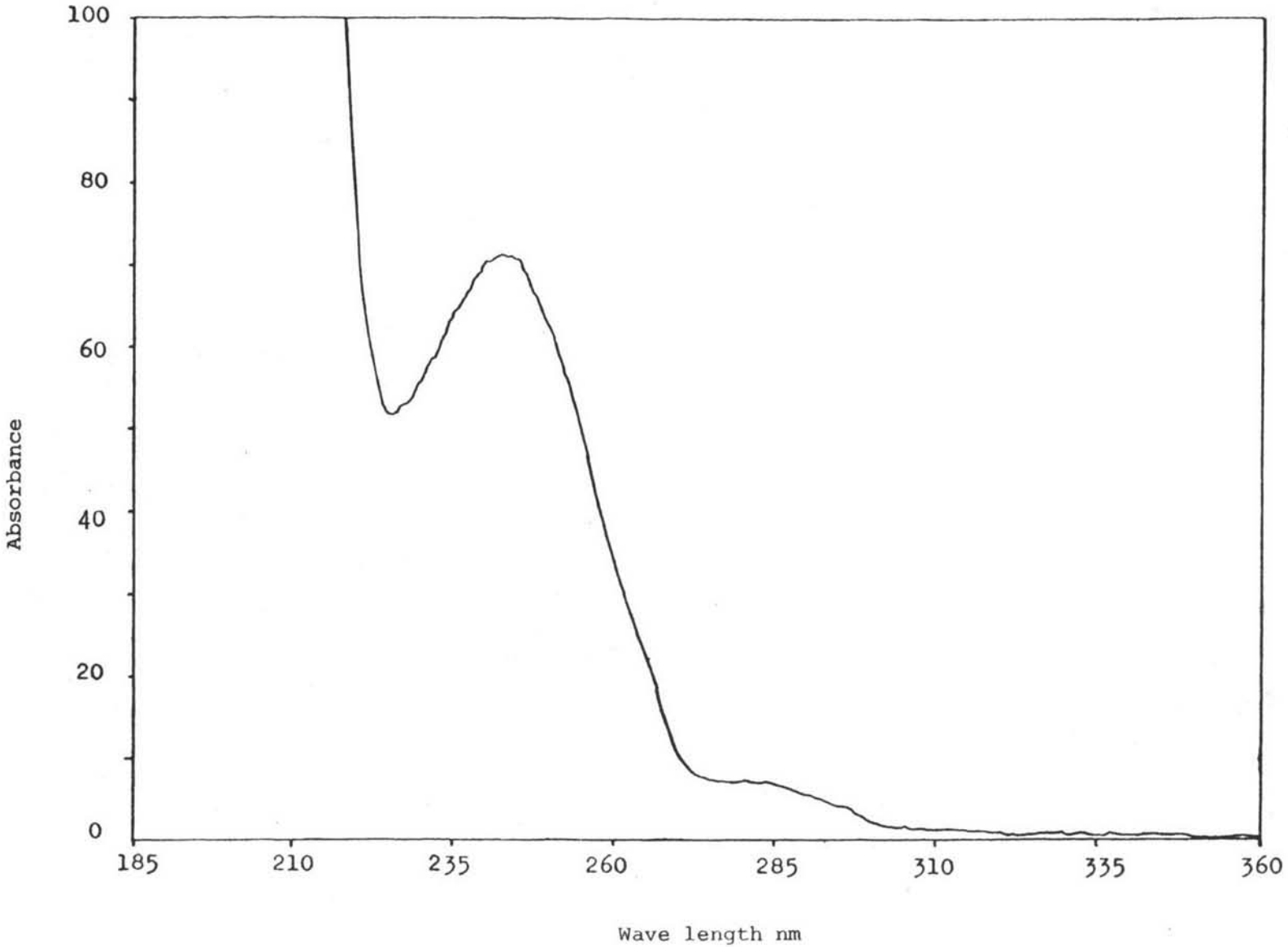

Figure XV. Ultraviolet absorption spectrum of alkaloid S_2 from Uncaria quadrangularis Geddes leaves in ethanol.

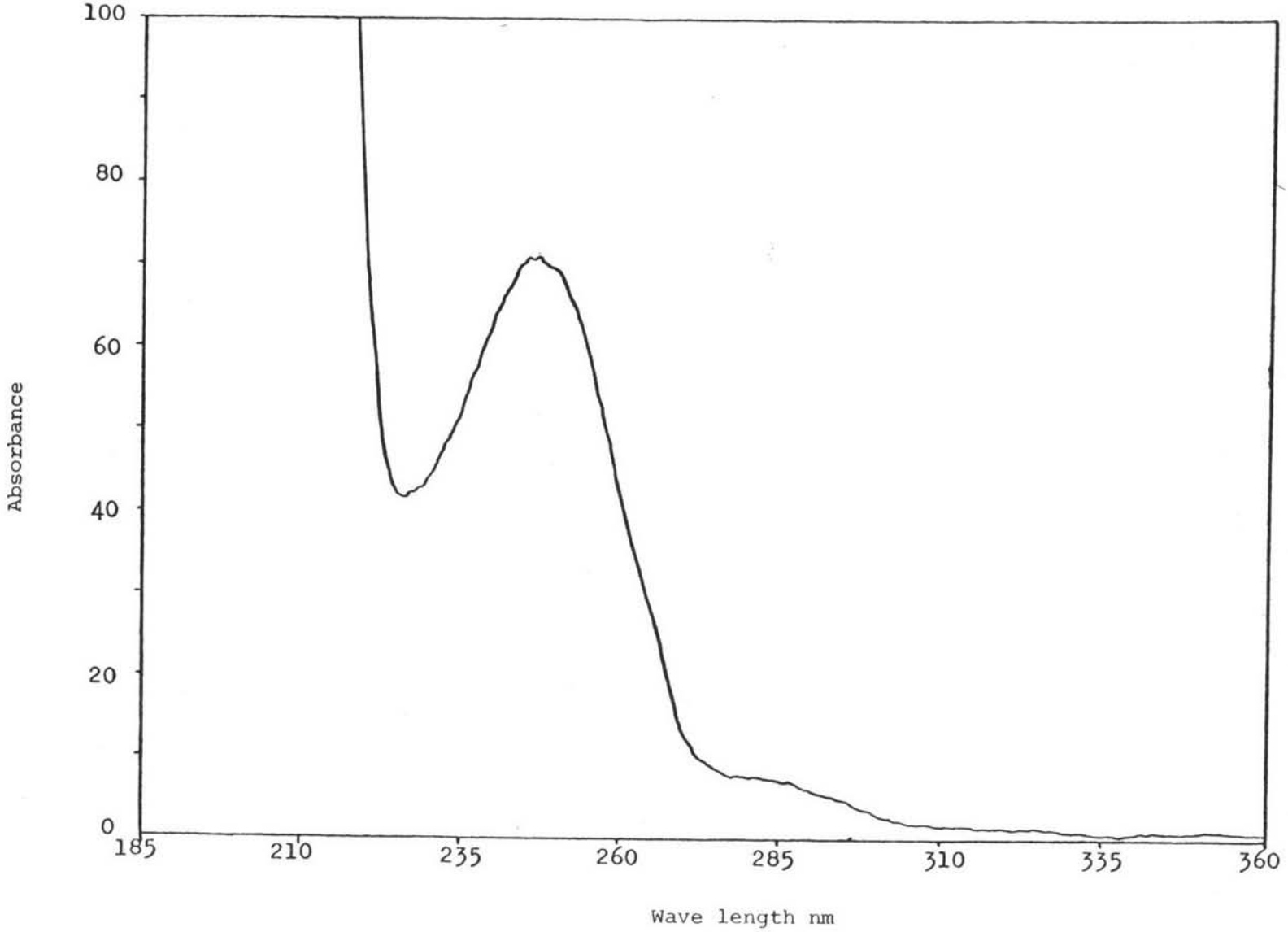

Figure XVI. Ultraviolet absorption spectrum of alkaloid S_3 from Uncaria quadrangularis Geddes stem bark in ethanol

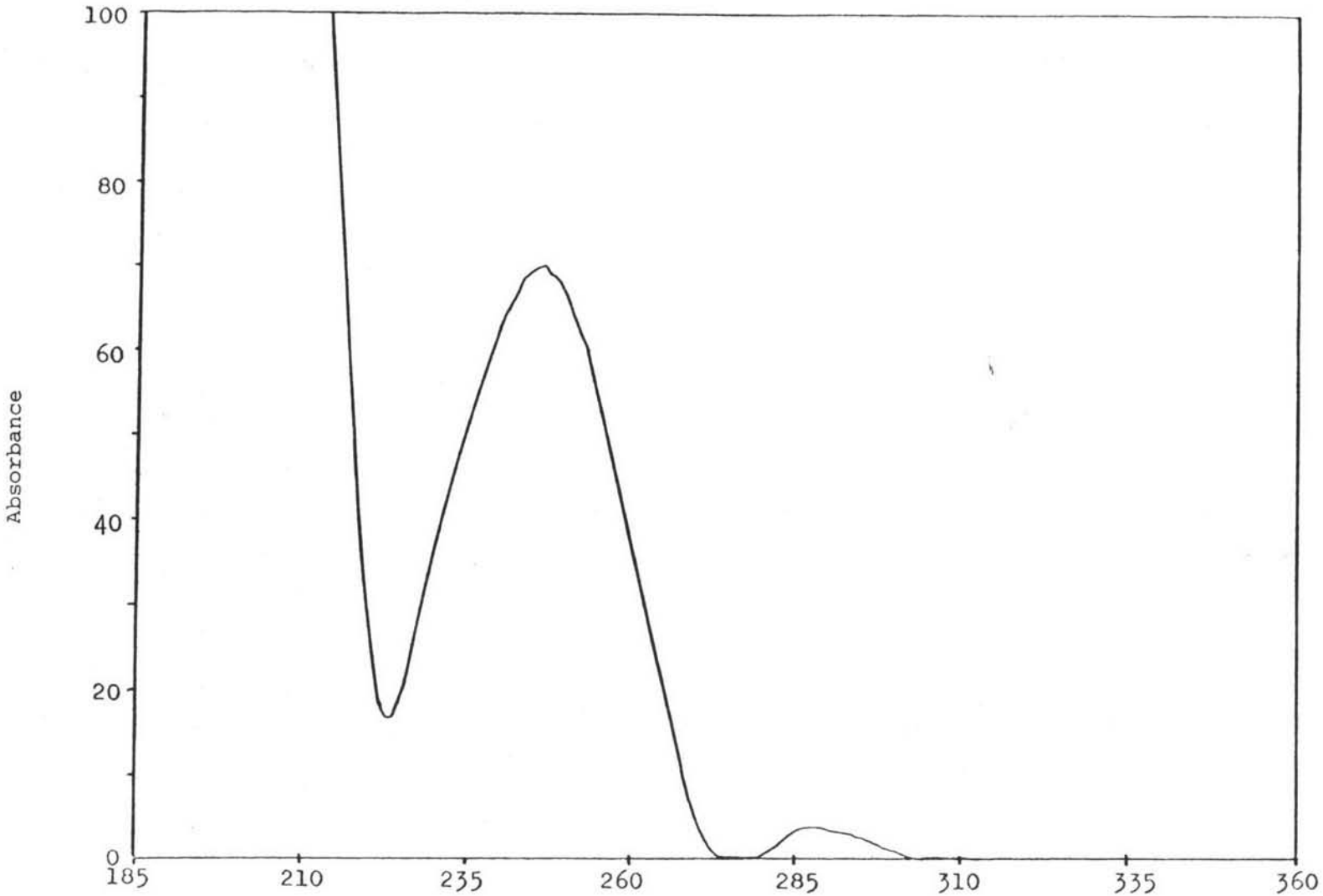

Figure XVII. Ultraviolet absorption spectrum of alkaloid S_4 form Uncaria quadrangularis Geddes stem bark in ethanol.

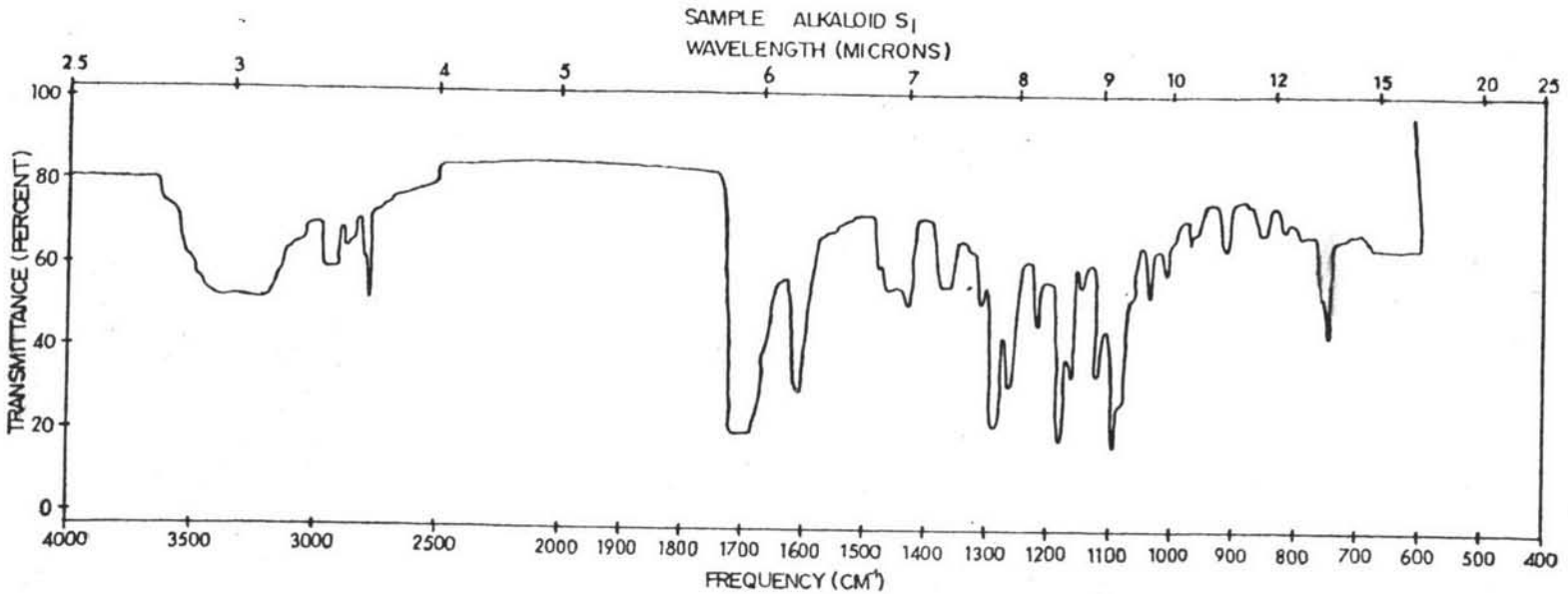

Figure XVIII. Infrared absorption spectrum of alkaloid S_1 isolated from the leaves of Uncaria quadrangularis Geddes.

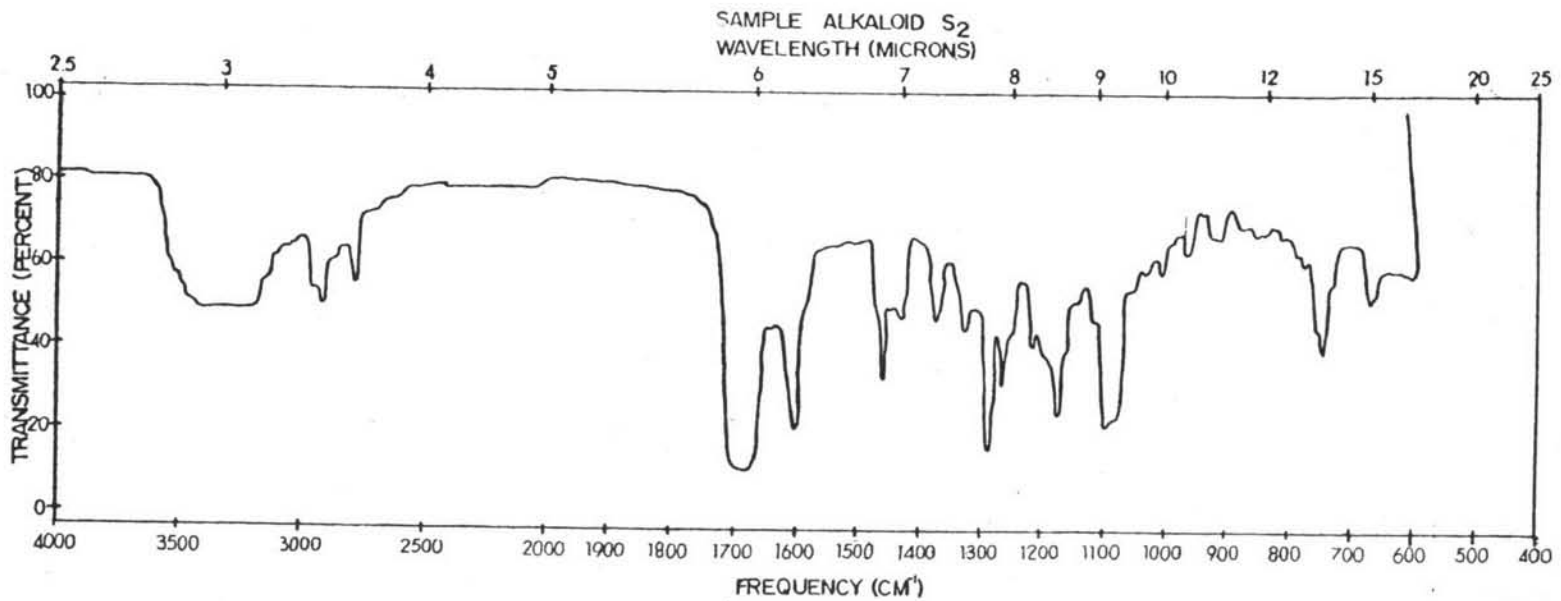

Figure XIX. Infrared absorption spectrum of alkaloid S_2 isolated from the leaves of Uncaria quadrangularis Geddes.

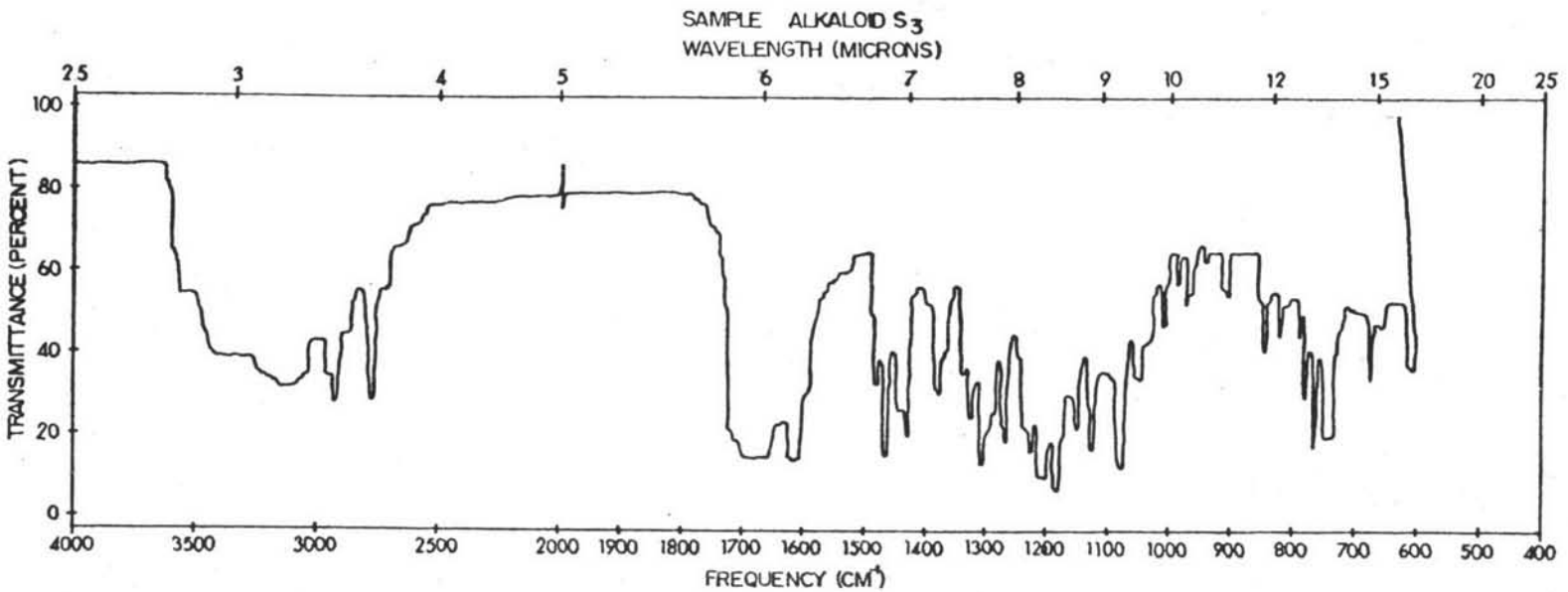

Figure XX. Infrared absorption spectrum of alkaloid S_3 isolated from the stem bark of Uncaria quadrangularis Geddes.

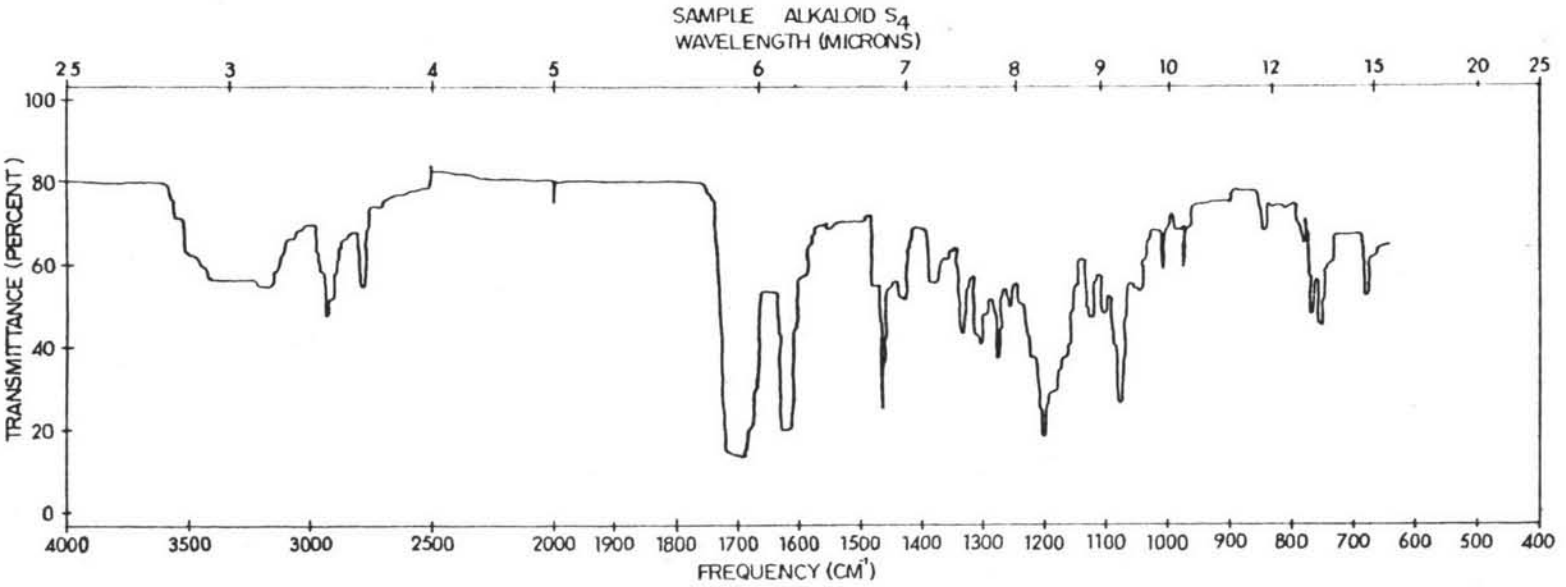

Figure XXI. Infrared absorption spectrum of alkaloid S_4 isolated from the stem bark of Uncaria quadrangularis Geddes.