

REFERENCES

1. Farnsworth, N.R., O. Akerele, A.S. Bingel, D.D. Soejarto, and Z. Guo "Medicinal Plants in therapy," Bull. W.H.O. 63(6), 965-981, 1985.
2. Jongbunprasert, V., "Phytochemical Studies of *Aglaia piriifera* Leaves," Master's thesis, Department of Pharmaceutical Botany, Graduate school, Chulalongkorn University, 1983.
3. Core, E.L., Plant Taxonomy, p. 344, Englewood Prentice-Hall, Cliffs, 1955.
4. Willis, J.C., A Dictionary of the Flowering Plants and Ferns, p. 32, Cambridge University Press, 7th ed., 1966.
5. Craib, W.G., Florae Siamensis Enumeratio, Vol. 1, pp. 254-259, Bangkok : The Siam Society, 1931.
6. Smitinand, T., Thai Plant Names (Botanical Names-Vernacular Names), pp. 11-12, Funny Publishing, 2nd ed., 1980.
7. Volkonsky, M., "Insect-repellent Action of Extracts of the Leaves of *Melia azedarach*," Arch.Inst.Pasteur Alger., 427-432, 1937. (Through C.A. 35 : 7104⁹).
8. Carratala, R.E., "Fatal Intoxication by Fruit from *Melia azedarach*," Rev.Asoc.Med.Argent., 53, 338-340, 1939. (Through C.A. 33 : 6951⁶).

9. Guevara, R., "Pharmacodynamic Study of Lansones Resin, Tãngan-Tãngan Oil and Palo Santo Seeds," Rev.Filip.Med.Farm., 31, 143-145, 1940. (Through C.A. 34 : 7007⁹).
10. Sinha, N.P., and K.C. Gulati, "Neem (*Azadirachta indica*) Seed Cake as a Source of Pest Control Chemicals," Bul.Reg.Res: Lab., Jammu, India 1, 176-177, 1963. (Through C.A. 60 : 8348e).
11. Berndt, G., "The Use of Margosa Oil and Margosa Extract in Indian Pharmacy," Seifem-Oele-Fette-Wachse, 59, 894, 1963. (Through C.A. 63 : 5449b)
12. Dhar, M.L., M.M. Dhar, B.N. Dhawan, B.N. Mehrota, and C. Ray, "Screening of Indian Plants for Biological Activity, : Part I," Indian.J.Exp.Biol., 6, 232-247, 1968.
13. Bhakuni, D.S., M.L. Dhar, M.M. Dhar, B.N. Dhawan and B.N. Mehrotra, "Screening of Indian Plants for Biological Activity : Part II," Indian.J.Exp.Biol., 7, 250-262, 1969.
14. Dhar, M.L., M.M. Dhar, B.N. Dhawan, B.N. Mehrota, R.C. Srimal, and J.S. Tandon, "Screening of Indian Plants for Biological Activity : Part IV," Indian.J.Exp.Biol., 11, 43-45, 1973.

15. Martinez Nadal, N.G., Santa de la Torre, A.E.M., and G. Vega, "Toxicological Effects of Active Principles of West Indian Coaba, *Swietenia mahogani*," Caribb.J.Sci., 13(1-2), 131-134, 1973. (Through C.A. 80 : 44671^a).
16. Qadri S.S.H., and B.B. Rao, "Effect of Combining Some Indigenous Plant Seed Extracts Against Household Insects," Pesticides 11(12), 21-23, 1977. (Through C.A. 89 : 54697p).
17. Guha-Sircar, S.S., and T. Chakravarty, "The Chemical Investigation of the Seeds of *Swietenia macrophylla*. I. The Nonbitter Principle," J.Indian Chem.Soc., 28, 207-210, 1951. (Through C.A. 47 : 2173i).
18. Connolly, J.D., R. Henderson, R. McCrindle, K.H. Overton, and N.S. Bhacca, "Tetranortriterpenoids. Part I. [Bicyclononanolide. Part I.] The Constitution of Swietenine," J.Chem.Soc., 6935-6948, 1965.
19. Connolly, J.D.; R. McCrindle, K.H. Overton, and W.D.C. Warnock, "Swietenolide," Tetrahedron Lett., 33, 2937-2940, 1965.
20. Marin, L.A., W.I. Torres, and C.F. Asenjo, "Isolation of Cycloeucalenol from West Indian Mahogany Wood," J.Org.Chem. 24, 411-413, 1959.
21. Akisanya, A., C.W.L. Bewan, J. Hirst, T.G. Halsall, and D.A.H. Taylor, "West African Timbers. Part III. Petroleum Extracts from the Genus *Entandrophragma*," J.Chem.Soc., 3827-3829, 1960.

22. Akisanya, A., C.W.L. Bevan, T.G. Halsall, J.W. Powell, and D.A.H. Taylor, "West African Timbers. Part IV. Some of Reactions of Gedunin," J.Chem.Soc., 3705-3708, 1961.
23. Taylor, D.A.H., and K. Wragg, "The Structure of Entandrophragmin" Chem.Comm., 81-83, 1967.
24. Taylor, D.A.H., "Extractives from East African Timbers. Part I," J.Chem.Soc., 3495-3496, 1965.
25. Chan, W.R., K.E. Magnus, and B.S. Mootoo, "Extractives from *Cedrela odorata* L. The Structure of Methyl Angolensate" J.Chem.Soc.C., 171-177, 1967.
26. Taylor, D.A.H., "Extractives from *Swietenia mahogani* (L.) Jacq," Chem.Comm., 58, 1969.
27. Bevan, C.W.L., T.G. Halsall, M.N. Nwaji, and D.A.H. Taylor, "West African Timbers. Part V. The Structure of Khivorin, a Constituent of *Khaya ivorensis*," J.Chem.Soc. 763-771, 1962.
28. Henderson, R., R. McCrindle, and K.H. Overton, "Salannin," Tetrahedron Lett. 52, 3969-3974, 1964.
29. Silva, L.B., W. Stocklin, and T.A. Geissman, "The Isolation of Salannin from *Melia dubia*," Phytochemistry, 8, 1817-1819, 1969.

30. Connolly, J.D., R. McCrindle, and K.H. Overton, "The Constitution of Mexicanolide. A Novel Cleavage Reaction in a Naturally Occurring Bicyclo[3,3,1] nonane Derivative," Chem. Commun. 8, 162-163, 1965.
31. Bevan, C.W.L., and D.E.U. Ekong, "Occurrence of 8-Methoxy 4-methylcoumarin in *Ekebergia sengalensis* A.Juss," Chem. Ind., 383-384, 1965.
32. Shiangthong, D.; A. Verasarn, P.N. Suwanrath, and E.W. Wårnhoff, "Constituents of Thai Medicinal Plants - I. Aglaiol," Tetrahedron 21, 917-924, 1965.
33. Boar, R.B., and K. Damps, "Configuration of Aglaoil, a (24 S)-24,25-Epoxy-triterpene," J.Chem.Soc., Chem. Commun., 115-116, 1973.
34. _____. "Triterpenoids of *Aglaia odorata* Configuration of Trisubstituted Epoxides." J.Chem.Soc., Perkin Trans.T., 510-512, 1977.
35. Shiangthong, D., V. Kokpol, P. Karntiang, and R.A. Massy-Westropp, "Triterpenoid Constituents of Thai Medicinal Plants-II. Isomeric Aglatriol and Aglaiondiol," Tetrahedron 30., 2211-2215, 1974.
36. Chatterjee, A., and A.B. Kundu, "Isolation, Structure and Stereochemistry of Aphanamixin-A New Triterpene from *Aphanamixis polystachya* Wall. and Parker," Tetrahedron Lett. 16, 1471-1476, 1967.

37. Lavie, D., M.K. Jain, and S.R. Shpan-Gabrielith, "A Locust Phagorepellent from Two *Melia* Species," Chem. Commun. 910-911, 1967.
38. Chang, F.C., and C.K. Chiang, "Kulinone, a Euphane-type Triterpenoid from *Melia azedarach* L., Chem. Commun., 1156-1158, 1968.
39. Nagasampagi, B.A.; L. Yankov, and S. Dev, "Isolation and Characterisation of Geranylgeraniol," Tetrahedron Lett., 2, 189-192, 1967.
40. Connolly, J.D.; K.L. Handa, R. McCrindle, and K.H. Overton, "Mexicanol," Tetrahedron Lett., 36, 3449-3452, 1967.
41. McCabe, P.H.; R. McCrindle, and R.D.H. Murray, "Constituents of Sneezewood, *Ptaeroxylon obliquum* (Thunb.) Radlk. Part I. Chromones," J.Chem.Soc.C., 145-151, 1967.
42. Murray, R.D.H., and M.M. Ballantyne, "Nieshoutol, A Sternutatory Hydroxycoumarin from Sneezewood," Tetrahedron Lett. 46, 4031-4034, 1969.
43. Kiang, A.K., E.L. Tan, F.Y. Lim, K. Habaguchi, K. Nakanishi, L. Fachan, and G. Ourisson, "Lansic Acid, a Bicyclic Triterpene," Tetrahedron Lett., 37, 3571-3574, 1967.
44. Okorie, D.A., and D.A.H. Taylor, "The Structure of Heudelottin, an Extractive form *Trichilia heudelottii*," Chem. Commun., 83-84, 1967.

45. _____. "Extractives from The Seed of *Cedrela odorata* L.," Phytochemistry, 7, 1683-1686, 1968.
46. Taylor, D.A.H., "11 β -Acetoxymkhivorin, A New Limonoid," Chem. Commun., 1172, 1968.
47. Connolly, J.D., K.L. Handa, R. McCrindle, and K.H. Overton, "Tetranortriterpenoids. Part X. Grandifolione," J.Chem.Soc.C., 2227-2234, 1968.
48. Connolly, J.D., and R. McCrindle, "Tetranortriterpenoids and Related Substances Part XIII. The Constitution of Grandifoliolenone, an, apo-Tirucallol Derivative from *Khaya grandifoliola* (Meliaceae)," J.Chem.Soc.C., 1715-1718, 1971.
49. Johns, S.R., and J.A. Lambertson, "Isolation of Simple Acid Amides from *Allophylus cobbe* (Sapindaceae) *Homalium foetidum* (Flacourtiaceae) and from an *Aglaia* species (Meliaceae)," Aust.J.Chem., 22, 1315-1316, 1969.
50. Burke, B.A., W.R. Chan, K.E. Magnus, and D.R. Taylor, "Extractives of *Cedrela odorata* L. - III The Structure of Photogedunin," Tetrahedron, 25, 5007-5011, 1969.
51. Arndt, R.R., and W.H. Baarschers, "The Structure of Phragmalin a Meliacin with a Norbornane Part Skeleton," Tetrahedron, 28, 2333-2349, 1972.

52. Chakraborty, D.P., and S.P. Basak, "Cyclomahogenol, A New Tetracyclic Triterpene from *Swietenia mahogani*," Phytochemistry, 10, 1367-1372, 1971.
53. Chan, W.R., and D.R. Taylor, "Extracts of *Cedrela odorata* L.- IV The Structure of Odoratin, an Undecanortriterpene," Tetrahedron, 28, 431-437, 1972.
54. Chatterjee, A., T. Chakraborty, and S. Chandrasekharan, "Chemical Investigation of *Cedrela toona*," Phytochemistry, 10, 2533-2535, 1971.
55. Sim, K.Y., and H.T. Lee, "Triterpenoid and Other Constituents from *Sandoricum indicum*," Phytochemistry, 11, 3341-3343, 1972.
56. Smolenski, S.J., H. Silinis, and N.R. Farnsworth, "Alkaloid Screening. I," Lloydia, 35(1), 22, 1972.
57. Fong, H.H.S., M. Trojankova, J. Trojanek, and N.R. Farnsworth, "Alkaloid Screening. II," Lloydia, 35(2), 138, 1972.
58. Smolenski, S.J., H. Silinis, and N.R. Farnsworth, "Alkaloid Screening. IV," Lloydia, 37(1), 38, 1974.
59. _____. "Alkaloid Screening VI," Lloydia, 38(3), 245, 1975.
60. _____. "Alkaloid Screening VIII," Lloydia, 38(6), 522, 1975.

61. Chan, W.R.; J.A. Gibbs, and D.R. Taylor, "Triterpenoids from *Trichilia havanensis* Jacq. Part I The Acetates of Havanensin and Trichilenone, New Tetracarboxylic Tetranortriterpenes," J.Chem.Soc., Perkin Trans.I., 1047-1050, 1973.
62. Adesida, G.A., and D.A. Okorie, "Heudebolin : A New Limonoid from *Trichilia heudelotii*," Phytochemistry, 12 3007-3008, 1973.
63. Connolly, J.D., "Structure of Dregeanin and Rohitukin, Limonoids from the Subfamily Melioideae of the Family Meliaceae. An Unusually High Absorption Frequency for a Six-Membered Lactone Ring," J.Chem.Soc., Chem.Commun., 909-910, 1976.
64. Singh, S., H.S. Garg, and N.M. Khanna, "Dysobinin, a New Tetranortriterpene from *Dysoxylum binectareferum*," Phytochemistry, 15, 2001-2002, 1976.
65. Ochi, M., H. Kotsuki, K. Hirotsu, and T. Tokoroyama, "Sendanin, a New Limonoid from *Melia azedarach* Linn. var. *japonica* Makino," Tetrahedron Lett., 33, 2877-2880, 1976.
66. Shienghong, D., A. Ungphakorn, D.E. Lewis, and R.A. Massy-Westropp "Constituents of Thai Medicinal Plants IV New Nitrogenous Compounds Odorine and Odorinol," Tetrahedron Lett., 24, 2247-2250, 1979.

67. Purushothaman, K.K., A. Sarada, J.D. Connolly, and J.A. Akinniyi, "The Structure of Roxburghillin a Bis-Amide of 2-Aminopyrrolidine from The Leaves of *Aglaia roxburghiana* (Meliaceae)," J.Chem.Soc., Perkin Trans.I., 3171-3174, 1979.
68. Techasauvapak, P., "A Study of some Compound from the Flowers of *Aglaia odorata* Lour." Master's Thesis, Department of Chemistry, Graduate School, Chulalongkorn University, 1981.
69. Jolad, S.D.; J.J. Hoffmann, and R.B. Bates, "Constituents of *Trichilia hispida* (Meliaceae) A New Triterpenoid, Hispidone and Bourjotinolone A," J.Org.Chem., 45, 3132-3135, 1980.
70. Pillai, N.R., and G. Santhakumari, "Anti-Arthritic and Anti-Inflammatory Actions of Nimbidin," Planta Med., 43, 59-63, 1981.
71. Nakatani, M., J.C. James, and K. Nakanishi, "Isolation and Structures of Trichilins, Antifeedant Against the Southern Army Worm," J.Am.Chem.Soc., 103, 1228-1230, 1981.
72. Kubo, J., and J.A. Klocke, "An Insect Growth Inhibitor from *Trichilia roka* (Meliaceae)," Experientia, 38, 639-640, 1982.

73. King, M.L., C.C. Chiang, H.C. Ling, E. Fujita, M. Ochiai, and A.T. McPhail, "X-ray Crystal Structure of Rocaglamide, a Novel Antileukemic 1H-Cyclopenta-[b] benzofuran from *Aglaia elliptifolia*," J.Chem.Soc., Chem.Comm., 1150-1151, 1982.
74. Nishizawa, M., A. Inoue, S. Sastrapradja, and Y. Hayashi, "(+)-8 Hydroxycalamenene : A Fish-Poison Principle of *Dysoxylum acutangulum* and *D. alliaceum*," Phytochemistry, 22, 2083-2085, 1983.
75. Aladesanmi, A.J., C.J. Kelley and J.D. Leary, "The Constituents of *Dysoxylum lenticellare* I Phenylethylisoquinoline, Homoerythrina and Dibenzazecine Alkaloids," J.Nat.Prod., 46(1), 127-131, 1983.
76. Aladesanmi, A.J., C.J. Kelley, J.D. Leary, and K.D. Onan, "The constituents of *Dysoxylum lenticellare* Part 2 New Homoerythrina Alkaloids," J.Chem.Res.Synop., (4), 108-109, 1984. (Through C.A. 101 : 126821r).
77. Purushothaman, K.K., K. Duraiswamy, and D.J. Connolly, "Tetranortriterpenoids from *Melia dubia*," Phytochemistry, 23, 135-137, 1984.
78. Taylor, A.R.H., and D.A.H. Taylor, "Limonoids from *Ekebergia pterophylla*," Phytochemistry, 23, 2676-2677, 1984.

79. Mamta, M., and K.S. Santosh, "A New Flavone Glycoside from *Melia azedarach* Linn.," Curr.Sci., 53(13), 694-695, 1984. (Through C.A. 102 : 3211e).
80. Jingxi, S., and Y. Axing, "Molecular Structure of Isochuanliansu Isolated from Traditional Chinese Medicine the Bark of *Melia toosendan* and *M. azedarach*," Yaoxue Xuebao, 20(3), 188-192, 1985. (Through C.A. 103 : 92693z).
81. Nishizawa, M.; Y. Nademoto, S. Sastrapradja, M. Shiro, and Y. Hayashi, "Structure of Dukunolide A : A Tetranor-triterpenoid with A New Carbon Skeleton from *Lansium domesticum*," J.Chem.Soc., Chem.Commun., 395-396, 1985.
82. Nishizawa, M.; H. Yamada, S. Sastrapradja, and Y. Hayashi, "Structure and Synthesis of Bicalamenene," Tetrahedron Lett., 26, 1535-1536, 1985.
83. Srivastava, S., and H. Gupta, "New Limonoids from The Roots of *Melia azedarach* Linn.," Indian J.Chem., 166-170, 1985.
84. Nakatani, M.; H. Takao, I. Miura, and T. Hase, "Azedarachol, A Steroid Ester Antifeedant from *Melia azedarach*.var. *japonica*," Phytochemistry, 24, 1945-1948, 1985.
85. Nakatani, M.; T. Iwashita, H. Naoki, and T. Hase, "Structure of A Limonoid Antifeedant from *Trichilia roka*," Phytochemistry, 24, 195-196, 1985.

86. Kelley, C.J., D.K. Onan, and A.J. Aladesanmi, "Ferrubietolide : X-ray Crystal Structure of A Novel Bis-diterpene from *Dysoxylum lenticellare*," J.Chem.Soc., Chem.Commun., 121-122, 1985.
87. Sujata, V.; S. Virobala, D.A. Namanbhai, and M.S. Shantaram, "Chromone Alkaloid, Its Isolation from *Dysoxylum binectariferum* and Its Use as A Drug," Ger. Offen. DE 3,329,186,1985 (Through C.A. 109923z).
88. Lecomte, M.H., and T. Premier, Flore Generale de L' Indo-Chine, pp. 763-764, Paris, Masson et c^{ie}, Editeurs 120, Boulevard Saint-Germain (VI^e), Mars 1911.
89. Stahl, E., Thin Layer Chromatography, p. 857, Springer-Verlag, New York, 2nd ed., 1969.
90. Still, C.W., M. Khan, and A. Mitra, "Rapid Chromatographic Technique for Preparative Separation with Moderate Resolution," J.Org.Chem., 43, 2923-2935, 1978.
91. Holloway, D., and F.Scheinmann, "Two Lignans from *Litsea grandis* and *L. gracilipes*," Phytochemistry, 13, 1233-1236, 1974.
92. Takemoto, T., T. Miyase, and G. Kusano, "Boehmenan, A New Lignan from The Roots of *Boehmeria tricuspis*," Phytochemistry, 14, 1890-1891, 1975.

93. Anjaneyulu, A.S.R., P.A., Ramaiah, L.R. Row, R. Venkateswarlu, A. Pelter, and R.S. Ward, "New Lignans from The Heartwood of *Cleistanthus collinus*," Tetrahedron, 37(21), 3641-3652, 1981.
94. Kudo, K., T. Nohara, T. Komari, T. Kawasaki, and H.R. Schulten, "Lignan-Glycosides from The Bark of *Ligstrum japonicum*," Planta Med., 40, 250-261, 1980.
95. Govindachari, T.R., S.S. Sathe, N. Viswanathan, B.R. Pai, and M. Srinivasan, "Chemical Constituents of *Cleistanthus collinus* (Roxb.)," Tetrahedron, 25, 2815-2821, 1969.
96. Kakisawa, K., Y.P. Chen, and H.Y. Hsu, "Lignans in Flower Buds of *Magnolia fragesii*," Phytochemistry, 11, 2289-2293, 1972.
97. Dutta, C.P., N. Banerjee, and D.N. Roy, "Lignans in The Seeds of *Piper longum*," Phytochemistry, 14, 2090-2091, 1975.
98. Ashrafova, R.A., and E.D. Bazhenova, "Effect of Granditsin on Animals During Long Term Use," Dokl.Akad.Nauk Uzb SSR, 31(9), 45-46, 1974. (Through C.A. 84 : 99322a).
99. Stevenson, R., and J.R. Williams, "Synthesis of Tetrahydrofuran Lignans (\pm) Galbelgin and (\pm) Grandisin," Tetrahedron, 33, 285-288, 1977.

100. Biftu, T., B.G. Hazra, and R. Stevenson, "Synthesis of (\pm) Deoxyschizandrin," J.Chem.Soc., Perkin Trans.I., 2276-2281, 1979.
101. Takeya, T., H. Matsumoto, and E. Kotani, "New Reagent System Containing CrO_3 Provide Precursors for Synthesis of Neo Lignans," Chem.Pharm.Bull., 31(12), 4364-4367, 1983.
102. Hikono, H., Y. Kiso, H. Taguchi, and Y. Ikeya, "Antihepatotoxic Actions of Lignoids from *Schizandra chinensis* Fruits," Planta Med., 50, 213-218, 1984.

APPENDIX

silica gel G/ethyl acetate : benzene (2:8)

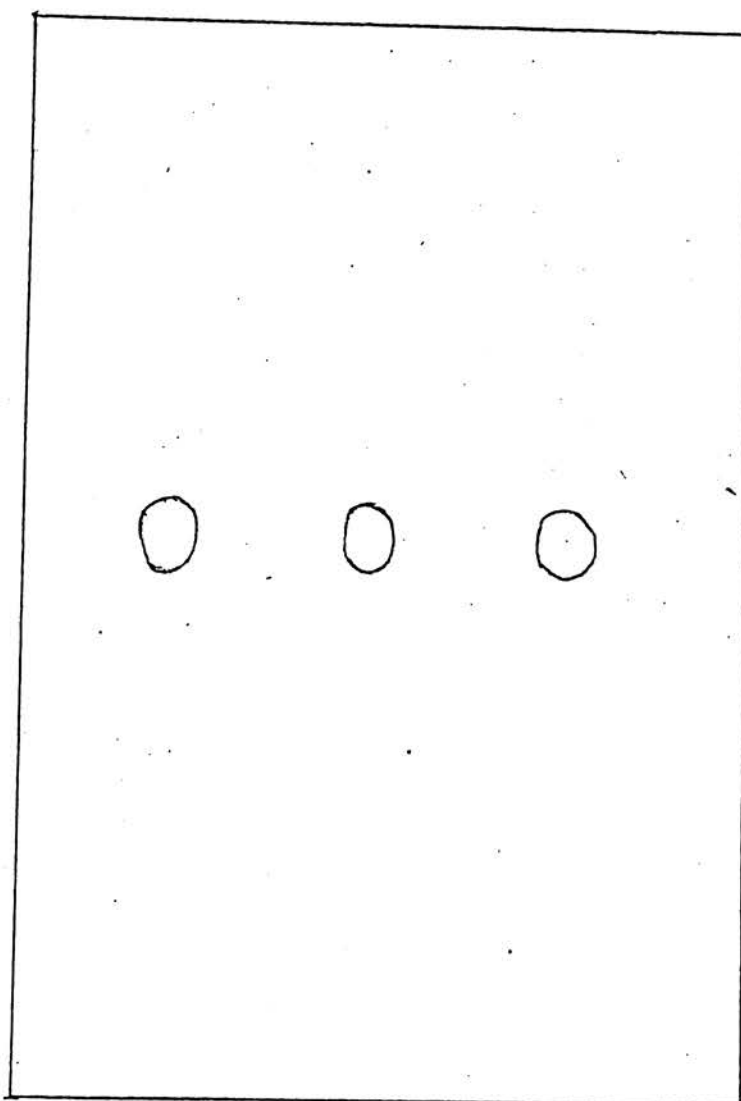


Fig. 4 Thin Layer Chromatogram of Ap

silica gel G/ethyl acetate : chloroform (1:9)

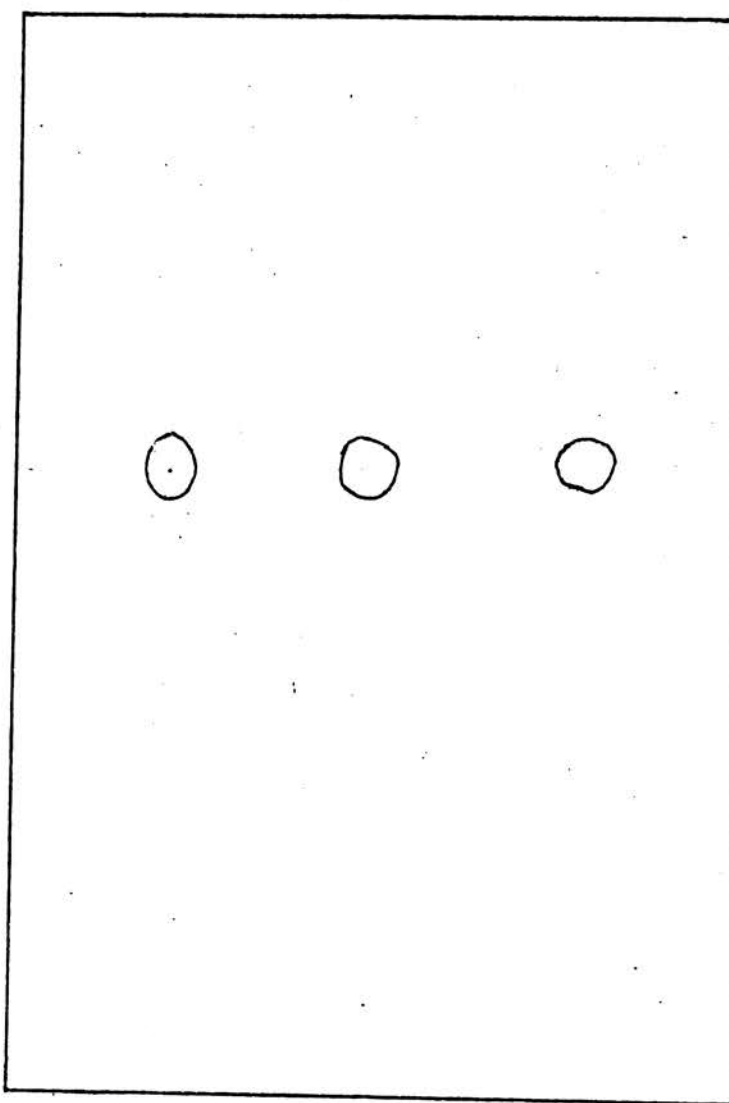


Fig. 5 Thin Layer Chromatogram of Ap

silica gel G/ethyl acetate : cyclohexane (2:8)

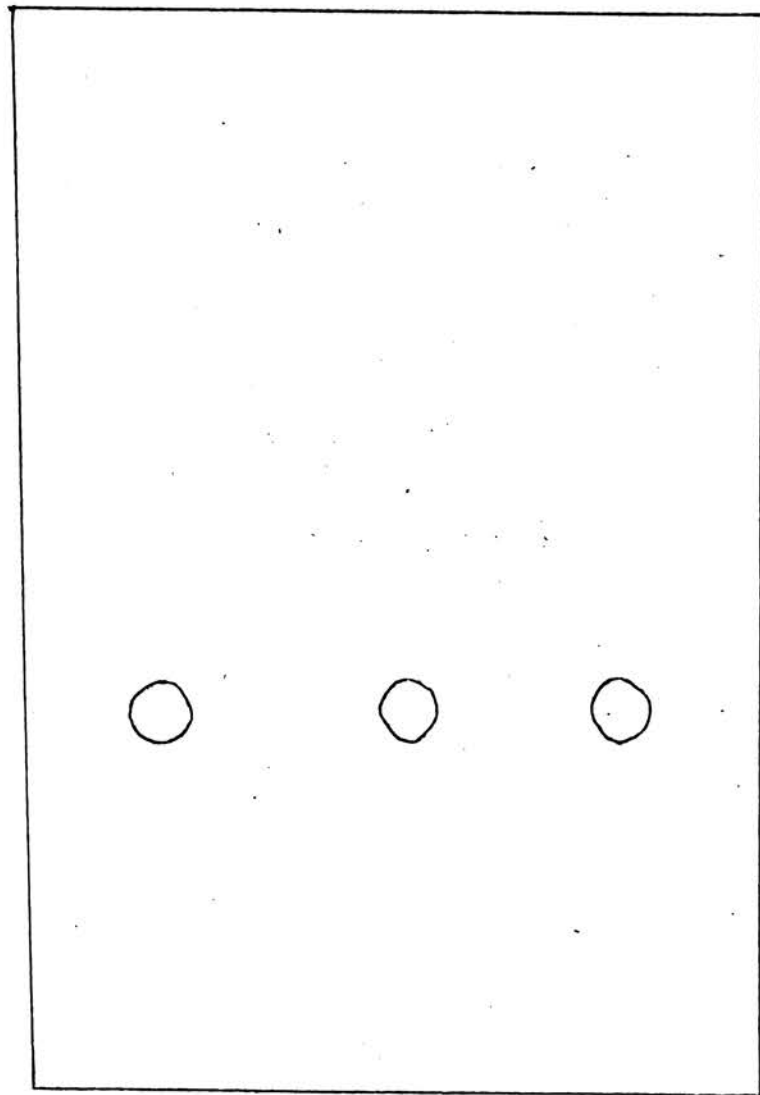


Fig. 6 . Thin Layer Chromatogram of Ap

silica gel G/benzene

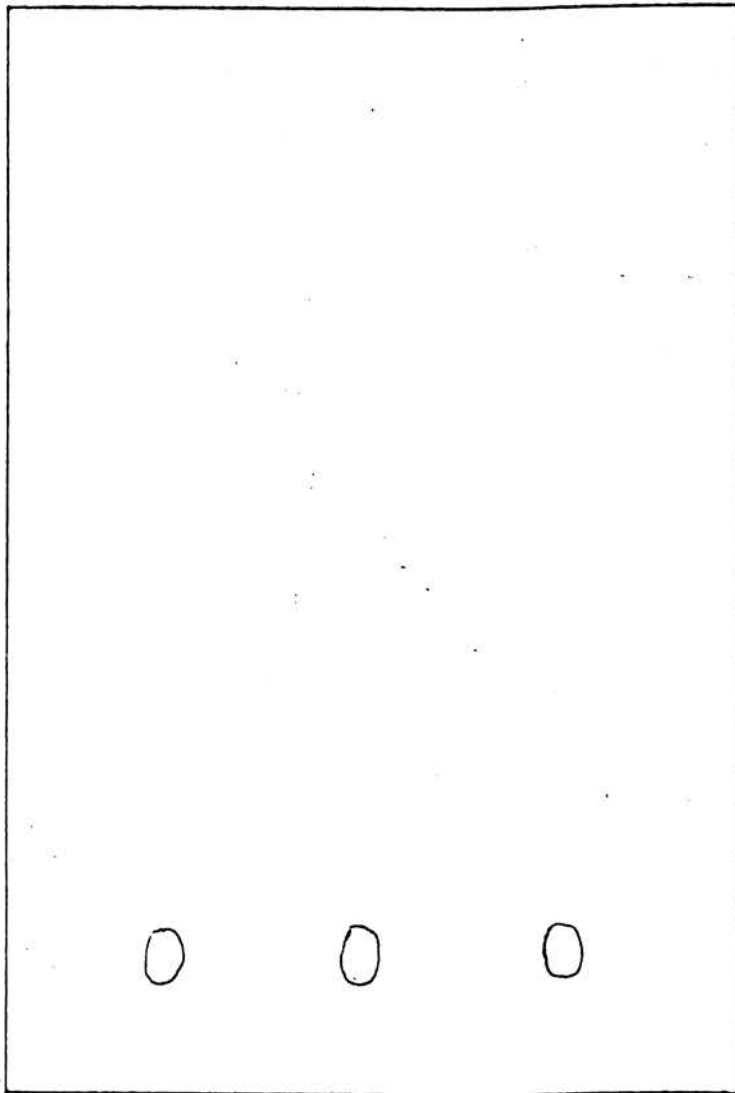


Fig. 7 Thin Layer Chromatogram of Ap

silica gel G/chloroform

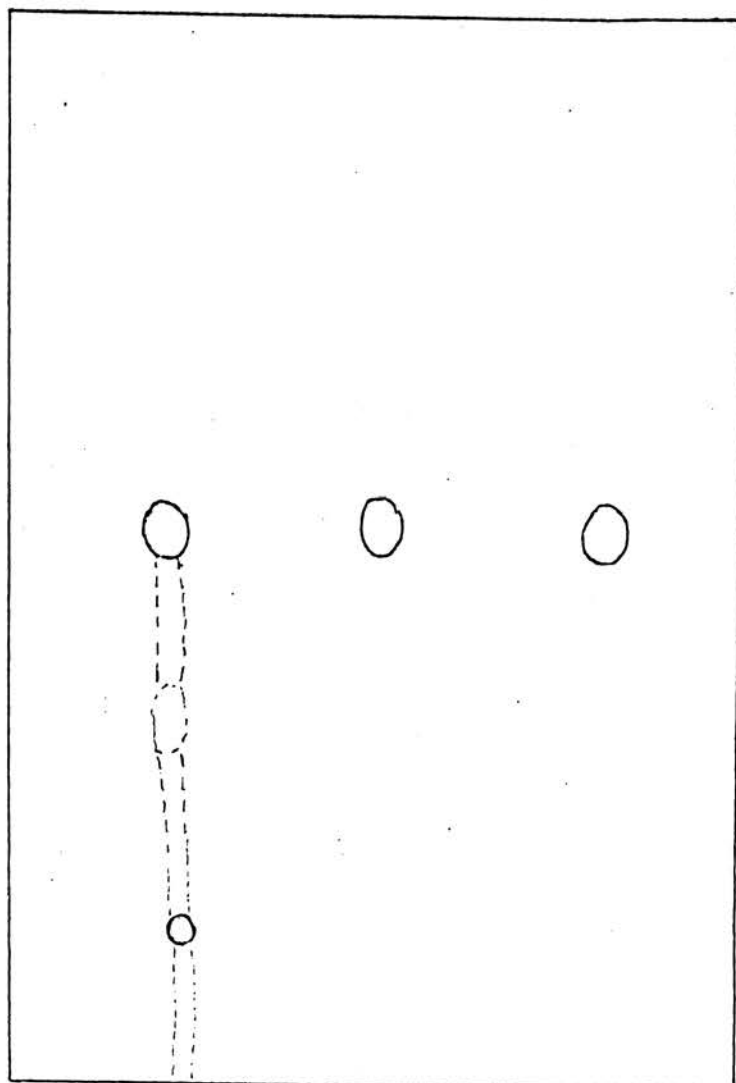


Fig. 8 Thin Layer Chromatogram of Ap

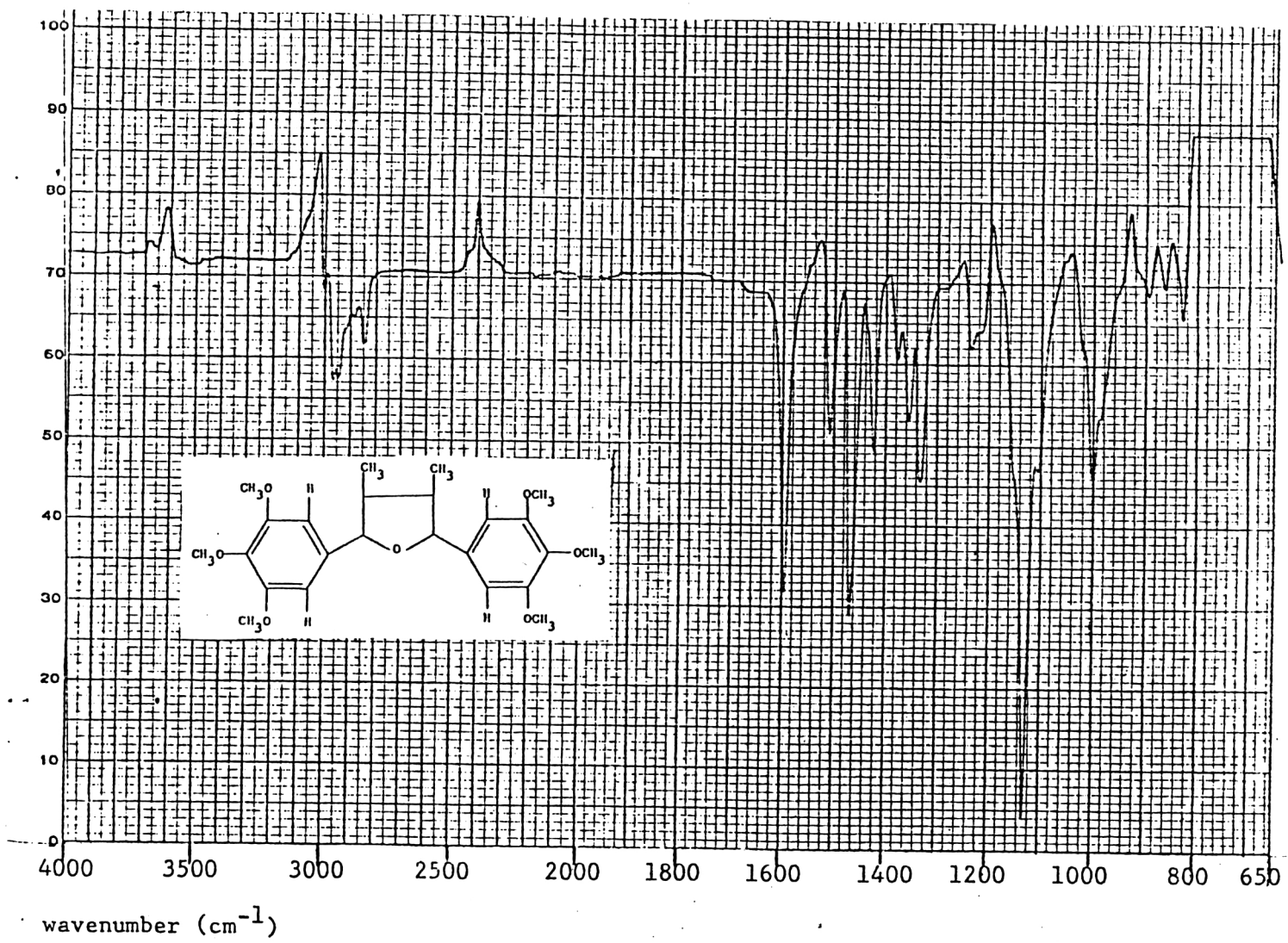


Fig. 9 Infrared absorption spectrum of Ap

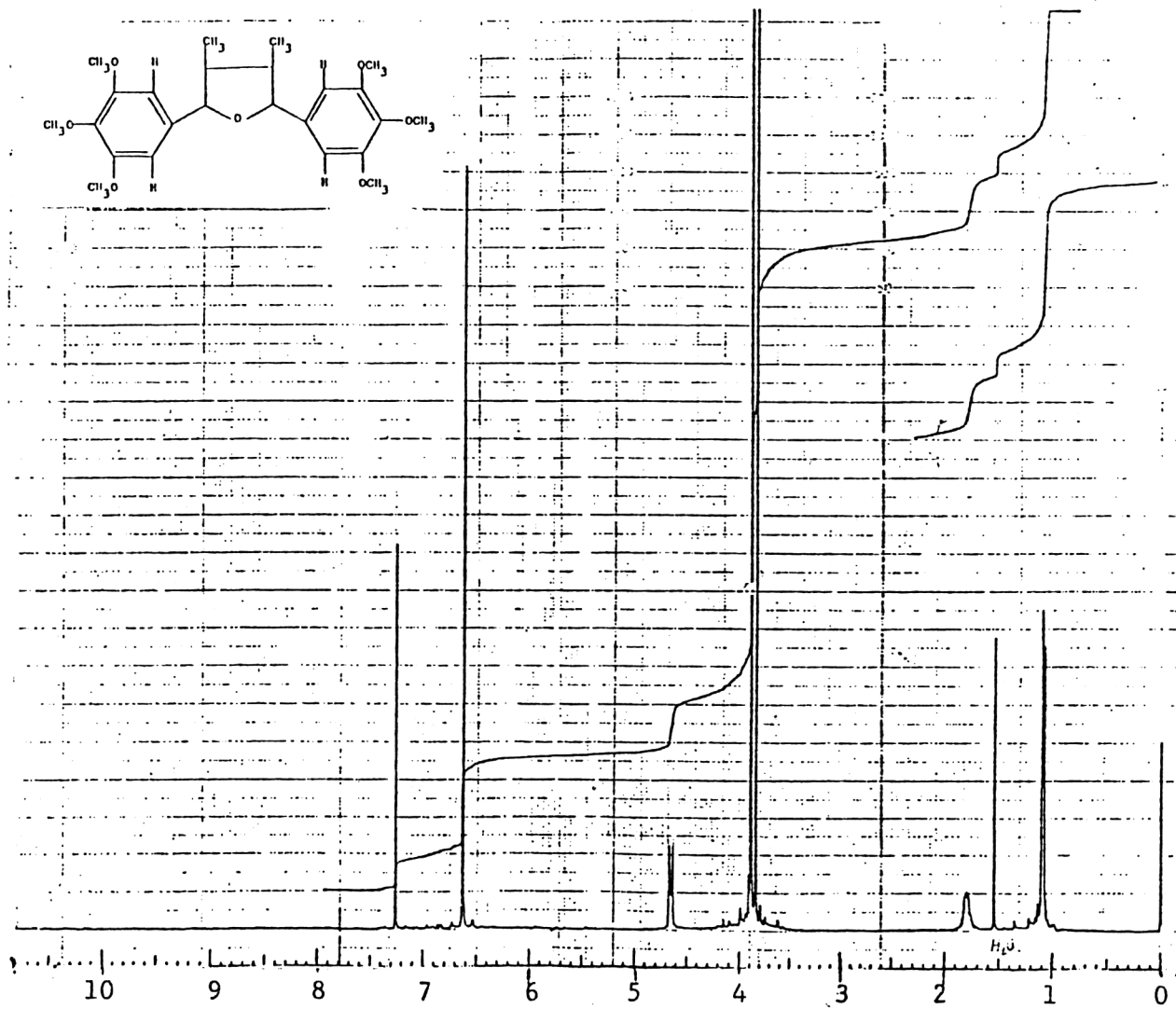


Fig. 10 Proton nuclear magnetic resonance spectrum of Ap

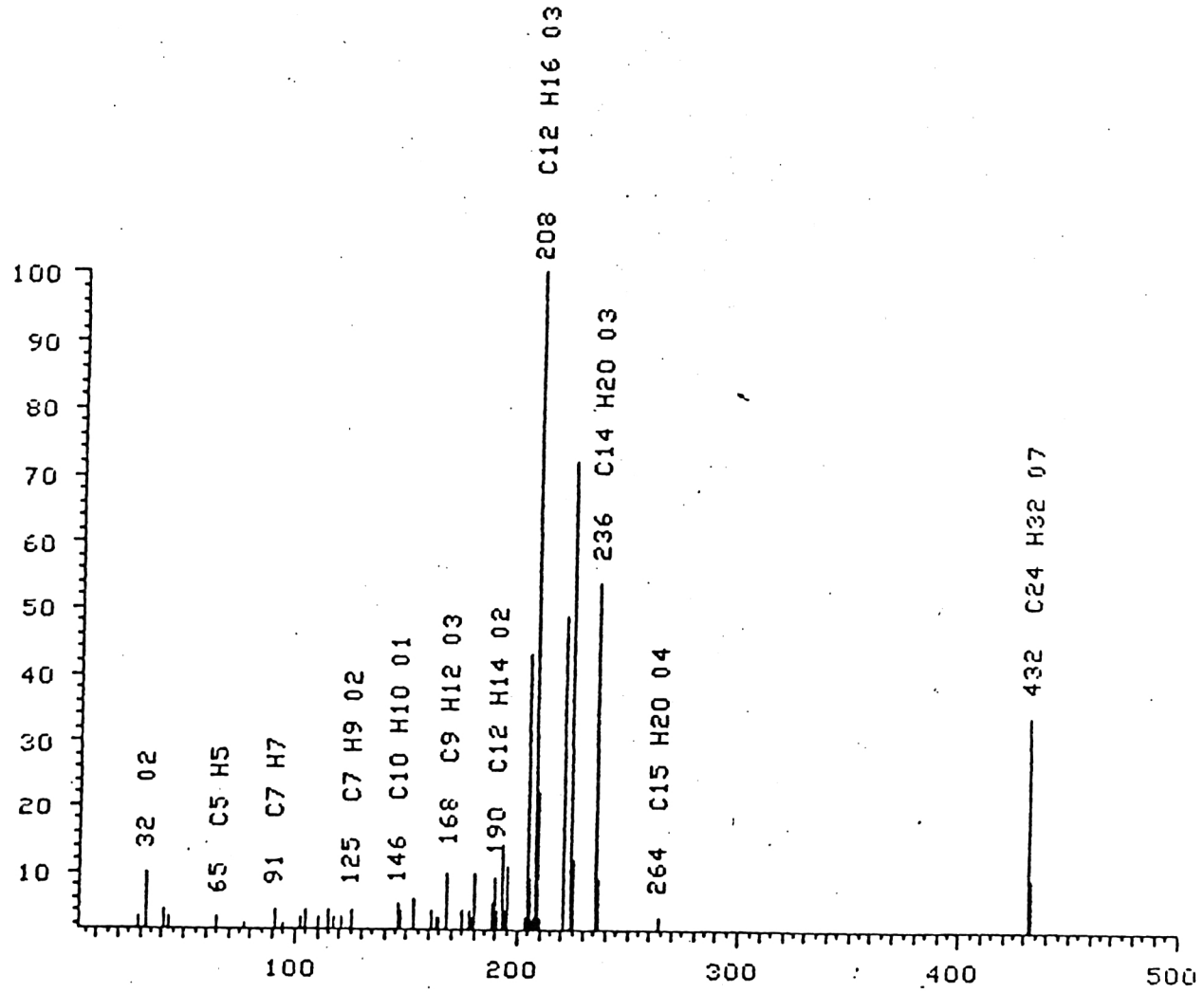
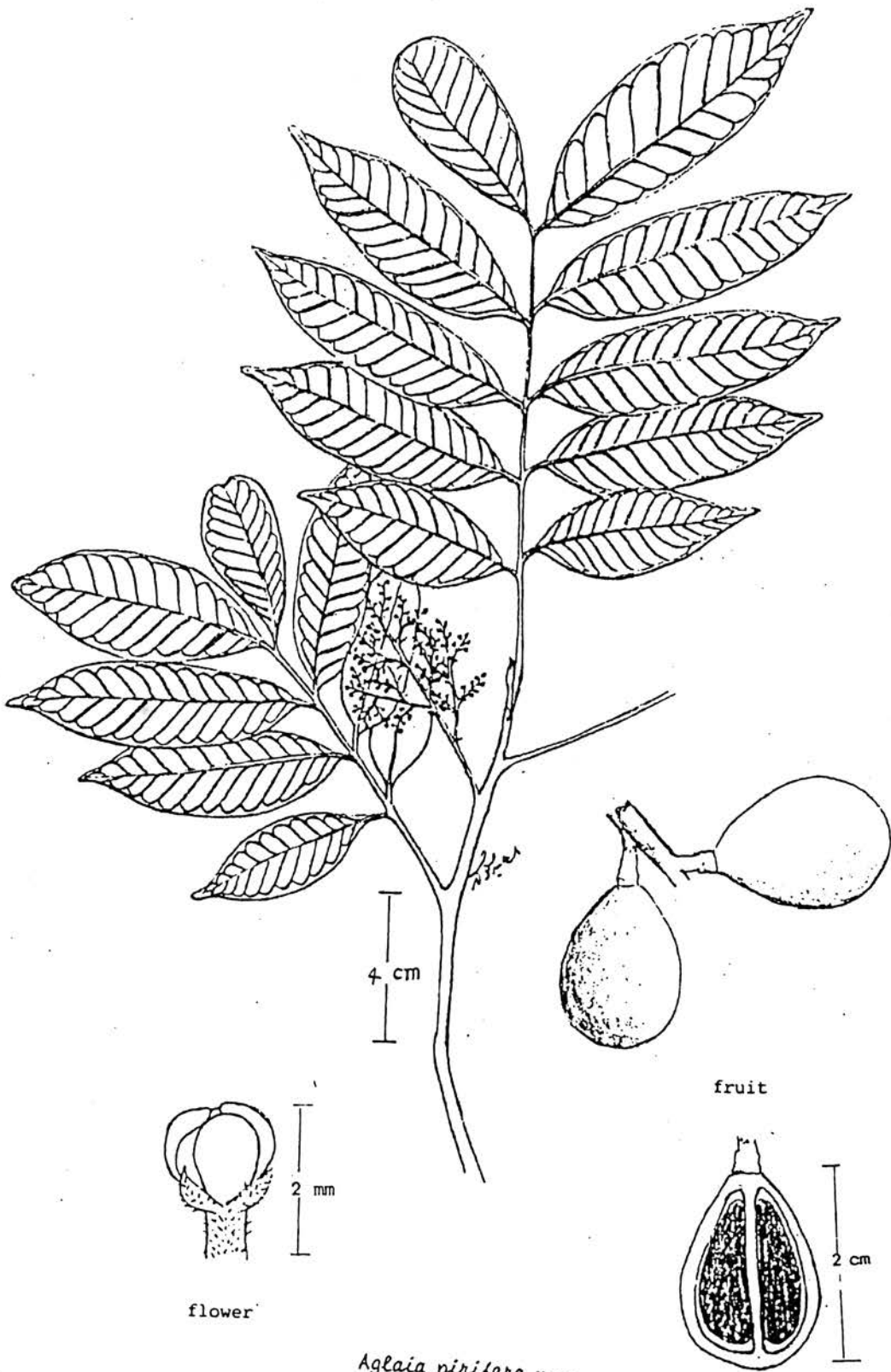


Fig. 11 Mass spectrum of Ap

VITA

Miss Roongaroon Ngowgarmratana was born on July 10, 1959 in Bangkok, Thailand. She received her Bachelor of Science in 1982 from the Department of Biology, Faculty of Science and Arts, Kasetsart University.



Aglaia piriifera Hance

long section of fruit



Aglaia pirifera Hance in late flowering stage. Photographed
by Assistant Professor Ekarin Saifah, Ph.D.



Aglaia pirifera Hance in late fruiting stage. Photographed
by Mr. Sinthop Chomya.