

A New Phytochemical Survey of Malaya. II.¹⁾ Chemical Screening

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In Part I of this series, Carrick, Chan and Cheung¹⁾ have reported the screening results of Malayan plants from 82 families, representing 169 genera and 226 species, for presence of alkaloids, saponins, and steroids and triterpenes.

In this paper no attempt will be made to re-examine those that have already been reported, but new plants collected from West Malaysia and subjected to the same chemical tests as stated in the previous publication,¹⁾ are presented here. The results are shown in the Table. Of the 127 species belonging to 51 families and 102 genera, that have been screened, 14 species gave positive tests for alkaloids, 22 species for saponins and 65 species for steroids and triterpenes.

In this laboratory, the presence of alkaloids has so far been confirmed by detailed chemical studies in several species of *Uncaria*.³⁻⁵⁾ Detailed examinations of *Fagraea crenulata* MAINGAY ex CLARKE and *Alstonia macrophylla* WALL. are in progress. The work by Cheung and Feng⁶⁾ on *Dryobalanops aromatica* GAERTN. f. has resulted in the isolation of seven related pentacyclic triterpene acids and five triterpene alcohols. Two known triterpenes, dammarenediol-I and hydroxydammerenone-I, have been isolated from *Hopea pubescens* RIDL.⁷⁾

TABLE. Screening Tests

Family and species	Chemical tests for				Family and Species	Chemical tests for			
	Part	Alkaloids	Saponins	Steroids triterpenes		Part	Alkaloids	Saponins	Steroids triterpenes
Acanthaceae					Apocynaceae				
<i>Ruellia repens</i> L.	W	—	—	+	<i>Kopsia fruticosa</i> DC.	S	3+	—	+
<i>Thunbergia grandiflora</i> Roxb.	L, S	—	—	—		L	2+	—	+
Ampelidaceae					<i>Parsosia helicandra</i> Hook. & Arns.	W	—	3+	—
<i>Leea indica</i> Merr.	S	—	—	+	Araliaceae				
	L	—	—	—	<i>Schefflera venulosa</i> Ridl.	S	—	2+	—
Anacardiaceae						L	—	3+	—
<i>Pentaspadon velutinus</i> Hook. f.	S	—	—	+	<i>Trevesia cheirantha</i> Ridl.	S	—	1+	—
	L	—	—	—		L	—	4+	—
Annonaceae					Caesalpiniaceae				
<i>Goniothalamus curtisii</i> King	S	2+	—	—	<i>Cassia spectabilis</i> (cf. Corner)	S	1+	—	—
	L	1+	—	—		L	2+	—	—

1) J. Carrick, K.C. Chan and H.T. Cheung, *Chem. Pharm. Bull.* (Tokyo), **16**, 2436 (1968); this paper is considered as Part I of this series.

2) Location: *Kuala Lumpur, Malaysia*.

3) K.C. Chan, F. Morsingh and G.B. Yeoh, *Tetrahedron Letters*, **1966**, 931; *J. Chem. Soc.*, **1966**, 2245.

4) K.C. Chan, *Tetrahedron Letters*, **1968**, 3403.

5) K.C. Chan, *Phytochemistry*, **8**, 219 (1968).

6) H.T. Cheung and M.C. Feng, *J. Chem. Soc.*, **1968**, 1047; *ibid.*, **1968**, 2686.

7) K.C. Chan, *Phytochemistry*, in press.

<i>Casia tora</i> L.	W	—	—	—
<i>Saraca palembanica</i> Miq.	L, S	—	—	—
<i>Tamarindus indica</i> L.	L, S	—	—	—
Capparaceae				
<i>Cleome rutidosperma</i> DC.	W	1+	—	—
Celastraceae				
<i>Kurrimia paniculata</i> Wall.	S	—	+	—
	L	3+	—	+
Compositae				
<i>Elephantopus scaber</i> L.	W	—	—	+
Convolvulaceae				
<i>Merremia peltata</i> (L.) Merr.	W	—	—	—
Cornaceae				
<i>Alangium unilicoula</i> King	S	2+	—	+
	L	1+	—	—
<i>Aralidium pinnatifidum</i> Miq.	S	—	—	+
	L	1+	—	+
Clusiaceae				
<i>Calophyllum inophyllum</i> L.	L, S	—	—	—
<i>Carcinia atroviridis</i> Griff.	L, S	—	—	—
Dipterocarpaceae				
<i>Dipterocarpus crinitus</i> Dyer.	S	1+	+	—
	L	—	—	+
<i>Hopea wightiana</i> Wall.	S	—	—	+
	L	—	—	—
<i>Shorea balanocarpoides</i> Sym.	S	—	+	+
	L	—	—	—
<i>Shorea materialis</i> Ridl.	S	—	2+	—
	L	—	+	—
<i>Shorea seminis</i> (De vries) V. Sl.	S	—	+	+
	L	—	—	—
Elaeocarpaceae				
<i>Elaeocarpus oxyphyren</i> K. & V.	L, S	—	—	—
<i>Elaeocarpus paniculatus</i> Wall.	S	—	—	+
	L	—	—	—
<i>Elaeocarpus stipularis</i> Bl.	L, S	—	+	—
Euphorbiaceae				
<i>Acalypha grandis</i> Benth. var. <i>longi-acuminata</i> Hayata	L, S	1+	—	—
<i>Antidesma ghaesembilla</i> Gaertn.	S	—	+	—
	L	—	—	—
<i>Antidesma pendulum</i> Hook.	S	2+	3+	—
	L	1+	—	—
<i>Aporosa frutescens</i> Bl.	S	—	+	+
	L	—	3+	—
<i>Baccaurea parviflora</i> Mull.	S	—	—	+
	L	—	—	—
<i>Glochidion microbotrys</i> Hook. f.	S	—	—	+
	L	—	—	—
<i>Macaranga cornuta</i> (cf. Corner)	S	—	—	+
	L	—	—	—
<i>Macaranga populifolia</i> Mull.	L, S	—	—	—
<i>Mallotus cf. floribundus</i> Mull.	S	—	+	+
	L	—	—	—
	F	1+	—	+
<i>Phyllanthus frondosus</i> Wall.	S	—	—	—
	L	—	+	—
Flacourtiaceae				
<i>Hydnocarpus wightiana</i> Blume	L, S	—	+	—
Lauraceae				
<i>Cinnamomum javanicum</i> Bl.	L, S	—	—	—
<i>Lindera pipericarpa</i> Boerl.	S	—	—	—
<i>Litsea trunciflora</i> Gamble	S	4+	+	+
	L	2+	—	—
<i>Neolitsea cassiaefolia</i> (Bl.) Merr.	S	3+	—	—
	L	—	—	—
Lecythidaceae				
<i>Lecythis zabucajo</i> Aubl.	S	—	4+	+
	L	—	5+	+
Liliaceae				
<i>Gloriosa superba</i> L.	W	—	—	+
<i>Smilax helferi</i> A. DC.	W	—	+	—
Lythraceae				
<i>Lagerstroemia flos-reginae</i> Retz.	S	—	—	+
	L	—	—	—
Malvaceae				
<i>Urena lobata</i> L.	W	—	—	—
Melastomataceae				
<i>Anerincleistus paniciflorus</i> Ridl.	S	—	—	+
	L	—	—	—
<i>Dissochaeta gracilis</i> Bl.	S	—	—	+
	L	—	—	—
<i>Dissochaeta. cf. sagittata</i> Bl.	S	1+	—	+
	L	—	—	+
<i>Dissotis rotundifolia</i> (J. E. Smith) Triana	W	—	—	—
<i>Marumia reticulata</i> Bl.	S	—	—	+
	L	—	—	—
<i>Melastoma malabathricum</i> L.	S	—	—	+
	L	—	—	—
<i>Pternandra capitellata</i> Jack.	L, S	—	—	+
Meliaceae				
<i>Dysoxylum arborescens</i> Meq.	L, S	—	—	—
Mimosaceae				
<i>Acacia auriculiformis</i> A. Cunn.	S	1+	—	—
	L	1+	—	—
<i>Pithecellobium clypearia</i> Benth.	S	—	+	—
	L	—	—	—
<i>Pithecellobium jiringa</i> (Jack.) Prain ex King	S	—	2+	—
	L	—	2+	—
Moraceae				
<i>Ficus indica</i> L.	S	—	—	+
	L	2+	—	—
Myrsinaceae				
<i>Ardisia elliptica</i> (cf. Corner)	L, S	—	—	+
<i>Embellia coriacea</i> Wall.	L, S	—	—	—
Myrtaceae				
<i>Decaspermum fruticosum</i> J. R. & G. Forst.	S	2+	2+	+
	L	—	2+	—
<i>Eucalyptus deglupta</i> Bl.	S	—	—	—
	L	—	—	+
<i>Eugenia cf. grata</i> Wight.	S	—	—	+
	L	—	+	—
<i>Eugenia pachyphylla</i> Kurz.	L, S	—	—	+
<i>Eugenia tumida</i> Duthie	L, S	—	—	—
<i>Rhodamnia cinerea</i> Jack.	S	—	+	+
	L	—	2+	+
<i>Tristania sumatrana</i> Miq.	S	—	+	—
	L	—	—	—
Oleaceae				
<i>Jasminum bifarium</i> Wall.	W	—	—	—

<i>Linociera montana</i> (Bl.) DC.	S	1+	—	—
	L	1+	—	+
Onagraceae				
<i>Jussiaea villosa</i> Lam.	W	—	—	+
Oxalidaceae				
<i>Averrhoa carambola</i> L.	S	1+	—	—
	L	—	2+	—
Papilionaceae				
<i>Crotalaria retusa</i> L.	L, S	—	—	—
<i>Clivicidia sepium</i> Steud.	S	—	+	—
	L	—	—	—
Passifloraceae				
<i>Passiflora foetida</i> L.	W	1+	—	—
<i>Pasiflora laurifolia</i> L.	L, S	—	—	—
Piperaceae				
<i>Piper miniatum</i> Bl.	L, S	—	—	—
Polygalaceae				
<i>Salomonina cantoniensis</i> Lour.	W	1+	6+	—
<i>Xanthophyllum palembanicum</i> Miq.	S	2+	4+	+
	L	3+	+	—
Ranunculaceae				
<i>Naravelia laurifolia</i> Wall. ex. Hook. f. Thoms.	L, S	1+	—	—
Rhizophoraceae				
<i>Gynotroches axillaris</i> Bl.	S	—	+	+
	L	—	—	—
Rosaceae				
<i>Parinari polyneura</i> Miq.	L, S	—	—	—
Rubiaceae				
<i>Chasalia chartacea</i> Craib	S	1+	+	+
	L	—	—	—
<i>Hedyotis capitellata</i> Wall.	L, S	—	—	—
<i>Ixora coccinea</i> L.	S	—	—	—
	L	1+	—	+
<i>Ixora salicifolia</i> (Bl.) DC.	S	—	—	—
	L	—	—	+
<i>Mussaenda glabra</i> Vahl.	S	—	—	+
	L	—	—	—
<i>Mussaenda mutabilis</i> Hook. fil.	L, S	—	—	+
<i>Neonauclea calycina</i> (Bartl. ex DC.) Merr.	S	—	—	+
	L	—	—	—
<i>Pavetta indica</i> L.	L, S	1+	—	+
<i>Psychotria obovata</i> Wall.	W	—	—	—
<i>Randia anisophylla</i> Jack.	S	3+	+	—
	L	1+	—	+
<i>Randia macrophylla</i> Hook. fil.	S	1+	+	+
	L	2+	—	—
<i>Uncaria acida</i> Roxb.	S	2+	3+	+
	L	1+	3+	—
<i>Uncaria ferrea</i> (Bl.) DC.	L, S	1+	2+	+
<i>Uncaria gambir</i> (Hunt.) Roxb.	L, S	—	—	+
Rutaceae				
<i>Euodia Roxburghiana</i> Hook. fil.	S	—	—	+
	L	—	—	—
Sapindaceae				
<i>Nephelium cf. glabrum</i> Noronh.	S	—	2+	—
	L	—	+	—
<i>Nephelium mutabile</i> Bl.	L, S	—	—	+
<i>Cardiospermum halicacabum</i> L. var. <i>halicacabum</i>	W	—	—	+
<i>Cardiospermum halicacabum</i> L. var. <i>luridum</i> (Bl.) Adelb	W	—	—	+
Solanaceae				
<i>Solanum verbascifolium</i> L.	S	—	—	—
	L	1+	—	—
Sterculiaceae				
<i>Pterospermum cf. elongatum</i> Korth.	S	—	—	—
	L	1+	—	—
Styracaceae				
<i>Styrax benzoin</i> Dryand.	S	—	4+	+
	L	—	2+	+
Ternstroemiaceae				
<i>Eurya acuminata</i> DC.	S	—	2+	+
	L	1+	—	—
Tiliaceae				
<i>Grewia tomentosa</i> Juss.	S	—	+	+
	L	1+	—	—
Turneraceae				
<i>Turnera ulmifolia</i> L.	W	—	—	+
Ulmaceae				
<i>Trema virgata</i> Bl.	L, S	—	—	—
Urticaceae				
<i>Gironniera parvifolia</i> Planch.	L, S	—	—	+
<i>Laportea pustulosa</i> Ridl.	S	—	—	+
	L	—	—	—
<i>Villebrunea rubescens</i> (Bl.)	L, S	—	+	+
Verbenaceae				
<i>Callicarpa longifolia</i> L.	L, S	—	—	+
<i>Callicarpa reevesii</i> Wall.	S	—	—	—
	L	—	—	+
<i>Clerodendrum laevisifolium</i> (cf. Corner)	L, S	—	—	—
<i>Clerodendrum splendens</i> G. Don.	W	—	—	—
<i>Congea tomentosa</i> Roxb.	S	—	4+	—
<i>Gmelina elliptica</i> J.E. Smith	S	—	—	—
	L	1+	5+	—
<i>Lantana aculeata</i> L.	S	—	—	—
	L	—	2+	—
<i>Sphenodesma triflora</i> Wight.	S	—	—	+
	L	—	—	—
<i>Vitex gamosepala</i> Griff.	L, S	—	—	—
<i>Vitex longisepala</i> King	L, S	—	—	—
<i>Vitex negundo</i> L.	S	—	+	+
	L	1+	—	+
Vitaceae				
<i>Vitis elegans</i> Kurz.	W	—	—	—
<i>Vitis hastata</i> Miq.	W	—	—	—
<i>Vitis japonica</i> Thunb	W	—	—	—

Abbreviations plant parts : S=stem; L=leaf; F=fruit; W=whole plant

The same visual assessment as stated in the previous publication¹⁾ was adopted.

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