Tab. 2 Descriptive terms of "corolla" (A), "pollination type" (B) and "tepal" (C).

A

butterfly-like corolla	チョウ形花冠	liliaceous corolla	ユリ形花冠
campanulate corolla	鐘形花冠	masked corolla	仮面状花冠
caryophyllaceous corolla	ナデシコ形花冠	orchidaceous corolla	ラン形花冠
choripetalous corolla	離弁花冠	papilionaceous corolla	チョウ形花冠
corolla	花冠	paracorolla	副花冠
corona	副花冠	personate corolla	仮面状花冠
crown	副花冠	rosaceous corolla	バラ形花冠
cruciate corolla	十字形花冠	rotate corolla	車形花冠
dialypetalous corolla	離弁花冠	schizopetalous corolla	離弁花冠
gamopetalous corolla	合弁花冠	synpetalous corolla	合弁花冠
hypocrateriform corolla	高つき形花冠	tubular corolla	管状花冠
infundibular corolla	漏斗形花冠	tubulous corolla	管状花冠
labiate corolla	唇形花冠	urceolate corolla	つぼ形花冠
ligulate corolla	舌状花冠	wheel-shaped corolla	車形花冠

B

anemogamous flower	風媒花	malacophilous flower	カタツムリ媒花
anemophilous flower	風媒花	moth flower	ガ媒花
entomophilous flower	虫媒花	ornithophilous flower	鳥媒花
hydrophilous flower	水媒花	wind-pollinating flower	風媒花

C

achlamydeous	無花被	heterochlamydeous	異花被
achlamydeous flower	無花被花	heterochlamydeous flower	異花被花
chlamydeous flower	有花被花	homochlamydeous	同花被
dechlamydeous	両花被	homochlamydeous flower	同花被花
dichlamydeous flower	両花被花	monochlamydeous	単花被
haplochlamydeous flower	単花被花	monochlamydeous flower	単花被花

Studies on the Components of Crude Drug "Kim-soan-lian"

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生薬"金線蓮"の成分研究（高附　巧[a]，王　正徳[b]，成井孝雄[b]，奥山　徹[b]）

"Kim-soan-lian" (金線蓮) (He 1987, Sun 1987), one of the most precious crude drugs in Taiwan, has been used for lung disease, hypertension, abdomen-pain, fever, tumor, acute and chronic liver complaint and snake-bite. "Kim-soan-lian" is derived from the whole plant or the aerial part of *Anoectochilus formosanus* Hay. and *A. koshunensis* Hay. (Orchidaceae). The chemical components of "Kim-soan-lian" has not been reported.

Dried herbs of "Kim-soan-lian" were extracted with AcOEt, MeOH and water. The AcOEt-extract was fractionated by silica gel column chromatography and HPLC. Finally two compounds were isolated in 0.0009% and 0.001% yield and identified as palmitic acid and 1,3-dipalmitin, respectively, in comparison with the physical data (see Experimental) of authentic samples. The MeOH-extract was fractionated by adsorption column chromatography, silica gel column chromatography and HPLC. Two compounds were isolated in 0.0011% and 0.0006% yield and identified as

4-hydroxycinnamic acid and β-sitosterol β-D-glucopyranoside, respectively, in comparison with the physical data (see Experimental) of authentic samples.

Experimental AcOEt, MeOH and H_2O-extracts from "Kim-soan-lian" The plant material was purchased at Taiwan market in 1990. The air-dried material (500 g) was extracted successively with AcOEt, MeOH and H_2O (each 3 l×2) for 3 hr nearly at their boiling points. Each extract was concentrated *in vacuo*.

Isolation of palmitic acid and 1,3-dipalmitin from AcOEt-extract The extract was chromatographed on a silica gel column with a gradient mixture of n-hexane-AcOEt and MeOH to afford twelve fractions (Fr.AA-1 to Fr.AA-12). Fr.AA-5 was further chromatographed by the same procedure to afford fifteen fractions (Fr.AB-1 to Fr.AB-15). Palmitic acid (4.5 mg) was obtained from Fr.AB-4 by HPLC on COSMOSIL $5C_{18}$ (ID. 10×250 mm) successively with $CHCl_3$-MeOH (1 : 2) and $CHCl_3$-MeOH (1 : 10) employing an RI detector. 1,3-Dipalmitin (4.8 mg) was obtained from Fr.AB-5 successively by HPLC on Senshu pak. silica (ID. 10×250 mm) with n-hexane-$CHCl_3$-MeOH (8 : 1 : 0.2), and on COSMOSIL $5C_{18}$ (ID. 10×250 mm) with $CHCl_3$-MeOH (1 : 4) employing an RI detector.

Palmitic acid White powder (MeOH-$CHCl_3$), mp 58–59°; IR ν_{max}^{KBr} cm^{-1}: 2910, 1695; EI-MS *m/z:* 256 (M^+), 227, 213, 199, 185, 171, 154, 143, 129, 115, 97, 87, 85, 83, 73, 71, 69, 60, 57, 55, 43, 41; ^1H NMR (in $CDCl_3$) δ (ppm): 0.88 (3H, t, J=6.04 Hz, CH_3), 1.26 (2H×12, s, CH_2), 1.63 (2H, br.s, CH_2), 2.34 (2H, d, J=7.09 Hz, CH_2); ^{13}C NMR (in $CDCl_3$) δ (ppm): 14.1, 22.7, 24.7, 29.1, 29.3, 29.4, 29.5, 29.6, 29.7, 31.9, 179.4.

1,3-Dipalmitin White powder (MeOH-$CHCl_3$), mp 68–70°; IR ν_{max}^{KBr} cm^{-1}: 3445, 2920, 1743, 1753, 1472, 1185, 715; EI-MS *m/z:* 568 (M^+), 550, 354, 331, 313, 299, 239, 129, 98, 85, 84, 83, 71, 57, 43; ^1H NMR (in $CDCl_3$) δ (ppm): 0.88 (3H×2, t, J=6.04 Hz, CH_3), 1.26 (2H×24, s, CH_2), 2.35 (2H×2, quint, J=7.63 Hz, CH_2), 2.35 (2H×2, d, J=7.56 Hz, CH_2), 4.09 (1H, m, CH), 4.13 (2H, dd, J=11.55, 4.13 Hz, CH_2), 4.19 (2H, dd, J=11.55, 4.13 Hz, CH_2); ^{13}C NMR (in $CDCl_3$) δ (ppm): 15.1, 22.7, 24.9, 29.1, 29.3, 29.5, 29.6, 29.7, 31.9, 34.1, 65.1, 68.4, 173.9.

Isolation of 4-hydroxycinnamic acid and β-sitosterol β-*D*-glucopyranoside from MeOH-extract The extract eluted from an Amberlite XAD-2 column successively with H_2O, MeOH and acetone. The fraction eluted with MeOH was chromatographed on a silica gel column with a gradient mixture of $CHCl_3$-MeOH to afford fifteen fractions (Fr.MA-1 to Fr.MA-15). Fr.MA-8 was further chromatographed by the same procedure to afford eight fractions (Fr.MB-1 to Fr.MB-8). 4-Hydroxycinnamic acid (5.4 mg) was obtained from Fr.MA-7 by further purification with HPLC on COSMOSIL 5SL (ID. 10×250 mm) with $CHCl_3$-MeOH (35:1) and n-hexane-AcOEt (1:1), and Senshu Pak. AQUASIL (ID. 10×250 mm) with $CHCl_3$-MeOH-H_2O (40 : 16 : 3) employing a UV detector 254 nm). β-Sitosterol β-*D*-glucopyranoside (2.9 mg) was obtained from Fr.MC-6 by further purification with HPLC on Senshu Pak. AQUASIL (ID. 10×250 mm) and COSMOSIL $5C_{18}$ (ID. 10×250 mm) with $CHCl_3$-MeOH-H_2O (100 : 10 : 0.5) and $CHCl_3$-MeOH (1:6) employing an RI detector.

4-Hydroxycinnamic acid Colorless powder (hot water), mp 211–215°C (dec.); IR ν_{max}^{KBr} cm^{-1}: 3395, 1673, 1603, 1592, 1505; EI-MS *m/z:* 164 (M^+), 147, 119, 107, 91, 77, 65, 63; ^1H NMR (in DMSO-d_6) δ (ppm): 6.28 (1H×2, d, J=8.58 Hz, CH), 6.28 (1H, d, J=15.84 Hz, =CH), 7.49 (1H, d, J=15.84 Hz, =CH), 7.50 (1H×2, d, J=8.58 Hz, CH); ^{13}C NMR (in DMSO-d_6) δ (ppm):

115.4, 115.7, 125.3, 130.0, 144.1, 159.6, 167.9.

β-Sitosterol β-D-glucopyranoside Colorless powder (MeOH-$CHCl_3$), mp > 300°; EI-MS *m/z*: 414, 396, 381, 354, 329, 303, 288, 275, 255, 213, 177, 161, 147, 145, 135, 133, 121, 119, 109, 107, 105, 95, 93, 81, 69, 57, 55, 43; ^{1}H NMR (in pyridine-d_5) δ (ppm): 0.67 (3H, s, CH_3), 0.87 (3H, d, J=5.61 Hz, CH_3), 0.90 (3H, d, J=5.61 Hz, CH_3), 0.91 (3H, d, J=5.61 Hz, CH_3), 0.95 (3H, s, CH_3), 1.00 (3H, d, J=6.59 Hz, CH_3), ca. 4.00 (1H, m, CH), 5.08 (1H, d, J=7.59 Hz, anomer-H), 5.36 (1H, br.s, =CH); ^{13}C NMR (in pyridine-d_5) δ (ppm): (β-sitosterol) 12.0, 12.2, 19.0, 19.2, 19.5, 20.0, 21.3, 23.4, 24.5, 26.5, 28.6, 29.5, 30.3, 32.1, 32.2, 34.3, 36.4, 37.0, 37.4, 37.5, 40.0, 42.4, 46.1, 50.3, 56.3, 56.9, 78.5, 122.0, 141.0, (β-D-glucopyranoside): 62.9, 71.8, 75.4, 78.1, 78.7, 102.6.

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新　刊

Davies R. A. (ed.) : **Index Kewensis, Supplement XIX**（1986－1990）. 354pp. 1991. Clarendon Press, Oxford. £95.

Index Kewensis の supplement XIX が出版された．今回の supplement では1986－1990の間に新記載及び新組み替えされた分類群が扱われている．Index Kewensis は植物分類学者にとって最も重要な文献の1つであり，改めて紹介するまでもない．コンピューターの普及した現在では，このようなデーターベースを作ることはさほど困難ではないと思われるが，100年程前からずっと出版し続けてきたということには敬意を表するものである．植物分類学の分野だけではなく他の関連分野でも大いに利用されることを期待するものである．（寺林　進）

Roth I. : **Handbuch der Pflanzenanatomie XIV**. Leaf structure of a Venezuelan cloud forest in relation to the microclimate. 244pp. 1990. Gebruder Borntraeger, Berlin. DM148.

本書は植物形態学の教科書として有名な"Handbuch der Pflanzenanatomie"のシリーズの1つとして出版されたものである．ベネズエラ国立公園"Henri Pittier"の雲霧林は，南米では最もよく知られた森林の1つである．常時霧がかかり，霧による散乱光が満ちているという特殊な環境に適応するため，植物たちは特徴的な構造を示しているという．本書ではまず，雲霧林の層構造の説明から入り，80種の植物について層ごとに葉の大きさ，形，気孔の数，内部構造等を丹念に調べている．図や写真が多く内容の理解の助けとなっている．最終的には気候と葉の形態の関係に議論を進めている．葉の形のもつ意味をあらためて考えさせてくれる内容のある本である．（寺林　進）

菊地慶四郎・須藤志成幸：**永遠（とわ）の尾瀬 ——自然とその保護**　236pp. 1991年10月．上毛新聞社，前橋市古市町 1－50－21. ¥1,200（税込）．

特別天然記念物に指定されている国立公園尾瀬は訪れる人が年々多くなると共に荒れ方がひどく，自然保護が叫ばれるようになってきた．尾瀬の湿原回復や登山道の荒れの問題などを永年調査研究