L.8 The methiodide crystallized from ethanol as prisms, m.p. 258-259° (cap.) (lit.8 m.p. of (−)-lupanine methiodide 274° (corr.); lit.8 m.p. of (+)-lupanine methiodide 258°), mixed m.p. with (+)-lupanine methiodide 240-241° (lit.10 m.p. of (±)-lupanine methiodide 239-241°) (Found: C, 49·2; H, 7·2; N, 7·2%). The identification was confirmed by comparison of the infrared spectra (Nujol) of the enantiomeric methiodides.

Fraction C was chromatographed on alumina (30 g). Elution of the column with mixtures of light petroleum and ether (9 : 1, then 4 : 1) gave further quantities of (+)-sparteine and (−)-lupanine; elution with ether then yielded (−)-anagyrine as a gum (240 mg). The infrared spectrum (liquid film) of the gum corresponded with that recorded for (−)-anagyrine.8 The picrate crystallized from methanol as yellow needles, m.p. 243-244° or 250-251° (dec.), depending on the rate of heating. The same behaviour was shown by an authentic sample of (−)-anagyrine picrate, and by a mixture of the two samples. The identification was confirmed by comparison of the infrared spectra (Nujol) of the two samples.

Fraction D also gave (+)-sparteine, (−)-lupanine, and (−)-anagyrine after chromatography on alumina.

Fraction E yielded (−)-sparteine, (−)-lupanine, and (−)-anagyrine after chromatography on alumina. Isolation of (−)-Cytisine (5)

(i) The above chloroform-soluble base was dissolved in benzene and chromatographed on alumina (activity I, 20 g); evaporation of the eluate and crystallization of the residue from dry acetone then yielded prisms (2·9 g), m.p. 155-156° (lit.11 155-156°), which was undepressed on admixture with an authentic specimen of (−)-cytisine; [α]D20 -120° (c, 0·7 in water) (lit.12 [α]D

(ii) Seeds of H. elliptica were obtained from the Western Australian Forestry Department. The seeds (120 g) were milled and extracted with methanol. The crude base, obtained as described above, crystallized. When this product was recrystallized from acetone, (−)-cytisine was obtained as needles, m.p. 155-156° (Found: C, 69·7; H, 7·6; N, 14·4. Calc. for C11H14N2O: C, 69·4; H, 7·4; N, 14·7%).

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