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A MAJOR ALKALOID OF THE LEAVES AND STEMS OF *STEPHANIA ROTUNDA*[1]

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Stephania rotunda Loureiro (Menispermaceae) is a climber indigenous to India and Indochina, where it has been used as a folk medicine for the treatment of pulmonary consumption, dysentery, fever, abdominal ills (tubers), asthma (tubers and stems), ascariasis, dysmenorrhea (stems), indigestion, wounds, head-ache, sore-breasts (leaves), and leprosy (flowers) (1-5). We have previously reported the isolation of four isoquinoline alkaloids from the tubers (6, 7) with (−)-tetrahydropalmatine as the major alkaloid. In this report, we describe the isolation and identification of the hasubanan alkaloid, cepharamine, from the leaves and stems of the title plant. This major alkaloid was identified on the basis of the spectral data and by direct comparison with an authentic sample (8). (−)-Tetrahydropalmatine was not detected in the leaves and stems. The alkaloidal content of the aerial plant parts was found to be quite different from that of the tubers.

EXPERIMENTAL

PLANT MATERIAL.—The material was from cultivated plants transplanted from Nepal to Japan. The plant was identified by Dr. S. Kitamura, Professor Emeritus, Kyoto University. Voucher specimens have been deposited in the herbarium of Kyoto Pharmaceutical University.

EXTRACTION AND ISOLATION.—Air-dried and cut materials (leaves: 1.735 kg; stems: 1.2 kg) were extracted separately with hot MeOH. The extracts were subjected to an isolation procedure based on the Stas-Otto method (9, 10). The resulting phenolic alkaloid fraction (leaves: 3.346 g; stems: 0.248 g) was treated individually with hydrobromic acid to give cepharamine hydrobromide (leaves: 1.78 g; stems: 0.243 g). The free base was identified as cepharamine by mmp, uv, ir, ^{1}H-nmr, $[\alpha]_D$, and tlc comparisons with a reference sample. The alkaloidal constituents (phenolic and nonphenolic) from the leaves and from the stems were examined separately by tlc and showed no difference. However, their chromatograms were qualitatively different from those of tubers. The nonphenolic alkaloid fractions from the leaves and from the stems showed eight spots on tlc, but none of them corresponded to tetrahydropalmatine.

Full details of the isolation and identification procedures are available on request to the senior author.

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[1]Part 283 in the series "Studies on the alkaloids of Menispermaceous plants." For part 282, see: M. Matsui, Y. Yamamura, T. Takebayashi, K. Iwaki, Y. Takami, K. Kunitake, F. Koga, S. Urasaki, and Y. Watanabe, *J. Nat. Prod.*, **47**, 858 (1984).

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SUGIOL AND 5α-STIGMASTANE-3,6-DIONE FROM THE CHINESE DRUG "TI-KU-P'I" (*LYCII RADICIS CORTEX*)[1]

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"Ti-ku-p'i (root bark of *Lycium chinense* Mill., Solanaceae) has been used in traditional Chinese medicine for the treatment of fever, hemorrhagic inflammation, hypertension, and ulcers. Several compounds (betaine, linoleic acid, linolenic acid, melissic acid, β-sitosterol, cinnamic acid, and kukoamine A) have been isolated previously from the crude drug (1-4). As part of our search for the constituents of "Ti-ku-p'i", we reported the isolation of a new dipeptide, lyciumamide (5). In this communication, we describe the isolation and identification of sugiol and 5α-stigmastane-3,6-dione from the neutral fraction of the crude drug extracts. In the course of identification of the steroidal diketone, an exact coincidence of ^{1}H-nmr spectra in $CDCl_3$ with reported data (6) was not obtained (e.g., the chemical shift for the C-18 angular methyl was observed as δ0.70, while δ0.76 was reported). As the authentic sample was not available for direct comparison, 5α-stigmastane-3,6-dione[3] was synthesized from β-sitosterol (8). Identity of the isolated steroidal diketone and the synthetic compound was then fully established, including exact coincidence of ^{1}H-nmr spectra as described in the experimental section.

EXPERIMENTAL

MATERIAL.—The crude drug (dried root bark) was obtained from Mikuni & Co., Ltd., Osaka, Japan.

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[1]This paper forms Part II of "Studies on the Constituents of Chinese Drug 'Ti-ku-p'i'." For Part I, see Noguchi *et al.* (5).

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[3]The compound was also synthesized according to the method described by Fieser for 5α-cholestane-3,6-dione (7).