

EXTRACTION AND SEPARATION.—Dried and finely powdered whole plants (600 g) were extracted with Et₂O in a Soxhlet apparatus. The extract was chromatographed on silica gel (containing 15% H₂O); elution with CHCl₃ yielded a single spot (tlc) fraction (0.055 g). ¹H-nmr (360 MHz, CDCl₃) double resonance experiments confirmed the chemical shifts stated above. The methanolic saponification of the fraction, worked up by usual procedures (3), gave (+)-marmesin mp 186-187°, [α]²⁰_D 28.5° (c=0.40, CHCl₃), which was identical by mmp, ir, ¹H-nmr, and ms data and co-chromatography with an authentic sample. The angelic acid (part of it becomes isomerized to tiglic acid), tiglic acid, and senecioic acid were subsequently isolated over silica gel plates impregnated with ammoniacal AgNO₃ as previously described (4).

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

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STUDIES ON CHILEAN LICHENS, VIII.¹ DEPSIDONES FROM *PSOROMA* SPECIES

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Species of the lichen genus *Psoroma* (Pannariaceae) are characterized by the tendency to accumulate chlorinated depsidones biogenetically related to β-orcinol. The presence of vicanicin and norvicanicin from *Psoroma sphinctrinum* (2) and isovicanicin from *Psoroma atrophylum*, have been reported (3); vicanicin was also isolated from *Psoroma leprolomun* (4), pannarin from *Psoroma diuretzi* (5) and dechloropannarin from *Psoroma caesium* (3). Recently, allorhizin was isolated from *Psoroma allorhizum* (3).

We wish to report here the results on research on the depsidones of four *Psoroma* species (Table 1).

TABLE 1. Depsidones from the Genus *Psoroma*

<i>Psoroma</i> Species		Compounds (%)	References
<i>P. dimorphum</i> Malme	vicanicin	0.2	4
	diploicin	0.01	6
	pannarin	0.01	
<i>P. pallidum</i> (Mont.) Nyl.	pannarin	2.0	7
	vicanicin	0.01	
	dechloropannarin	0.20	3
<i>P. pulchrum</i> Malme	vicanicin	0.53	
	pannarin	0.20	
<i>P. reticulatum</i> (Hue.) Zahlbr.	pannarin	0.19	

¹For Part VII, see Chamy *et al.* (1).

Diploicin, a chlorinated depsidone related to orcinol, previously not reported to be present in Panariaceae, was found in *Psoroma dimorphum* and leprolomin, a diaryl ether previously described (4), was isolated from *P. dimorphum* and *Psoroma pallidum*.

All these compounds were characterized from ^1H -nmr, ms, and ir spectral data and by comparison with authentic samples.

EXPERIMENTAL

GENERAL EXPERIMENTAL PROCEDURES.—Melting points were determined on a Kofler hot plate. Spectra were recorded with the following instruments: ir, Perkin-Elmer model 683; ^1H nmr, Varian T-60; ms, Varian MAT CH-7.

PLANT MATERIAL.—*Psoroma* species were collected in the southern zone of Chile (Villarrica), from bark of *Notbofagus* spp. Voucher specimens are deposited at the Herbarium of the School of Chemistry and Pharmacy, University Valparaíso, Chile.

EXTRACTION AND ISOLATION OF THE DEPSIDONES.—The air-dried lichen thalli were extracted two times at room temperature with petroleum ether (bp 40-60°), CHCl_3 , Et_2O , and finally Me_2CO . The extracts were chromatographed over Si gel columns, and column fractions further purified by preparative tlc. The isolated depsidones were purified by crystallization.

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

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ALKALOIDS OF PAPAVERACEAE, XII. ¹ ALKALOIDS OF *GLAUCIUM CORNICULATUM* SUBSPECIES *REFRACTUM*, POPULATION POL-DOKHTAR

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In continuation of chemotaxonomic studies of Iranian wild plants of the Papaveraceae (1-11), alkaloid content of *Glaucium corniculatum* (L.) Rudolph. subspecies *refractum*³ (NAB) Cullen, population Pol-Dokhtar was studied. This species is a perennial wild plant growing in an area near Pol-Dokhtar Tunnel on the highway from Mianeh to Zinjan at an altitude of 1600 meters. The height of the plant is about 49-95 cm. It blooms from April to August, has large (up to 5 cm) yellowish-orange flowers, and long (10-25 cm) seed pods.

Some of the alkaloids isolated from this plant population are common with those reported in our previous work on this species (10). Chemotaxonomic correlation of this species is under investigation.

¹For paper XI, see Shafiee, *et al.* (11).

²This work was a part of S. Akhlaghi's dissertation for the degree of Pharmacy Doctorate.

³The plant was identified by G. Amin, College of Pharmacy, University of Tebran; an herbarium sample was deposited in the Herbarium of The College of Pharmacy, University of Tebran.