

Syo KUROKAWA\* & John A. ELIX\*\* : **Two new  
Australian *Parmeliae***

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ウメノキゴケ属の2新種

(Plate V)

Two new species of *Parmelia*, collected in Australia, will be described in this paper. To date both species have only been obtained from a few localities in south-eastern Australia, but they may well be more widely distributed in eastern Australia as well as Tasmania and New Zealand.

***Parmelia hypoprotocetrarica*** Kurok. et Elix, sp. nov.

Thallus ad saxa laxe adnatus, virido-lutescens, subirregulariter lobatus, 6-8 cm diametro; lobi imbricati, tantum ad apicem saepe subascendentes, ad marginem plus minusve crenati, ciliis destituti, 1.0-2.0 mm lati, 250-280  $\mu$  crassi. Superficies superior distincte vel effigurate maculata, saepe fusco-vel nigro-marginata tantum versus apices loborum; isidiis sorediisque destituta; medulla alba; superficies inferior nigra, plus minusve rugulosa, rarissime rhizinata, rhizinis nigris, simplicibus, validis, 0.2-0.5 mm longis. Cortex superior prosoplectenchymatus, irregulariter incrassatus, 20-65  $\mu$  crassus; stratum gonidiale continuum, 25-70  $\mu$  crassum; stratum medullare 140-170  $\mu$  crassum; cortex inferior fuscus, 16-30  $\mu$  crassus.

Apothecia subsessilia, 3-7 mm diametro, margine distincte undulato, disco fusco, amphithecio maculato; hymenium hyalinum, ca. 45  $\mu$  altum; asci subclavati, ca. 10 $\times$ 30  $\mu$ ; spora 8-nae, hyalinae, ellipsoideae, simplices, 4-5 $\times$ 6-8  $\mu$ .

Superficies superior K + plus minusve lutescens, KC + lutescens; medulla K -, C -, KC -, P -; thallus acidum usnicum et acidum hypoprotocetraricum continens.

Type specimen. On porphyry boulders, Coppins' Crossing, Australian Capital Territory, Australia. J.A. Elix 101—holotype in TNS and isotype in MEL.

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This new species (Plate V, fig. 1) resembles *Parmelia notata* Kurok. (Kurokawa *et al.*, 1971), another Australian species of the subgenus *Xanthoparmelia*. Both of these lichens have similar loosely adnate thalli, effiguratly maculate upper-surface, and black under-surface with very sparse rhizines. All colour reactions of the medulla with various chemical reagents are negative in both species. However, *P. hypoprotocetrarica* is clearly characterized by the production of hypoprotocetraric acid in the medulla, while *P. notata* produces 4-O-methylhypoprotocetraric and notatic acids (Kurokawa *et al.*, 1971). In addition, the lobes are rather short and more distinctly crenate along the margin in *P. hypoprotocetrarica*.

This species is the first *Parmelia* that has been shown to contain hypoprotocetraric acid. The hypoprotocetraric acid was identified by means of crystal and thin layer chromatographic methods (Culberson, C.F., 1965), by isolation (in 4.2% yield) and by comparison with authentic material kindly provided by Dr. C.F. Culberson. Usnic acid (0.25%) was also isolated from this species.

At present this new species is known only from two localities in south-eastern Australia.

Additional specimen examined. New South Wales: Granite Hill, 2 miles north of Adelong. On granite. R. Filson 10877 (TNS).

***Parmelia subnuda* Kurok., sp. nov.**

Thallus adnatus vel laxe adnatus ad saxa, sulphureo-lutescens, di- vel trichotome lobatus, 4-7 cm diametro; lobi sublineariter elongati, saepe imbricati, versus apicem plus minusve ascendentes, ciliis destituti, 1-2.5 mm lati, 180-210  $\mu$  crassi. Superficies superior laevigata, plus minusve nitidula, emaculata, saepe nigro-marginata, isidiis sorediisque destituta; medulla alba; superficies inferior nigra, subnuda, tantum ad lobos veteriores rhizinata, rhizinis nigris, simplicibus, validis, 0.2-1 mm longis. Cortex superior prosoplectenchymatus, uniforme incrassatus, 12-16  $\mu$  crassus; stratum gonidiale continuum, ca. 35  $\mu$  crassus; stratum medullare 95-125  $\mu$  crassum; cortex inferior fusco-brunneus, ca. 16  $\mu$  crassus.

Apothecia sebsessilia, 2-10 mm diametro, margine plus minusve undulato, disco fusco, amphithecio laevigato emaculatoque; hymenium hyalinum, ca. 45  $\mu$  altum; asci subclavati, 7-8  $\times$  25-30  $\mu$ ; sporae 8-nae, hyalinae, ellipsoideae, simplices, ca. 5  $\times$  8  $\mu$ .



and were shown to be identical with authentic samples of these compounds. No hydrolysis would be anticipated under these mild conditions so it can be safely concluded that rhizonic acid is a true metabolite, and a probable biogenetic precursor of the barbatic acid.

Additional specimens examined. New South Wales: The same locality as the type. S. Kurokawa 5181 (TNS). Australian Capital Territory: Near Coppins' Crossing. On porphyry boulders. J.A. Elix 100 (TNS).

### Literature Cited

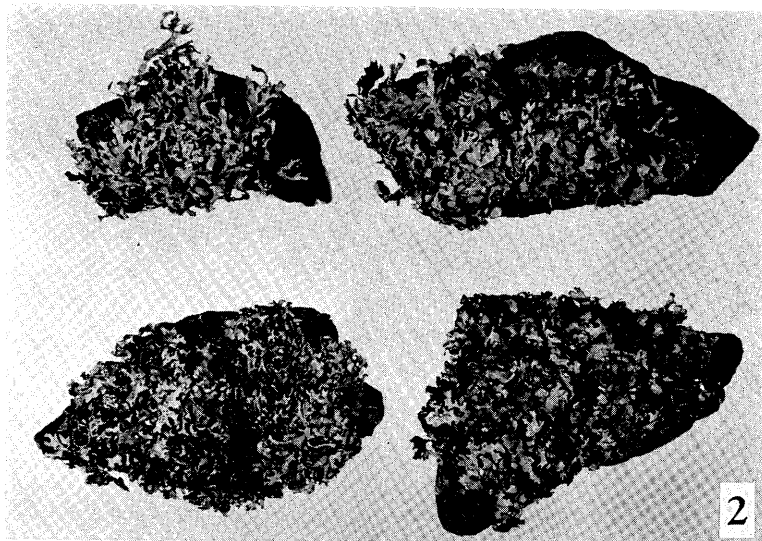
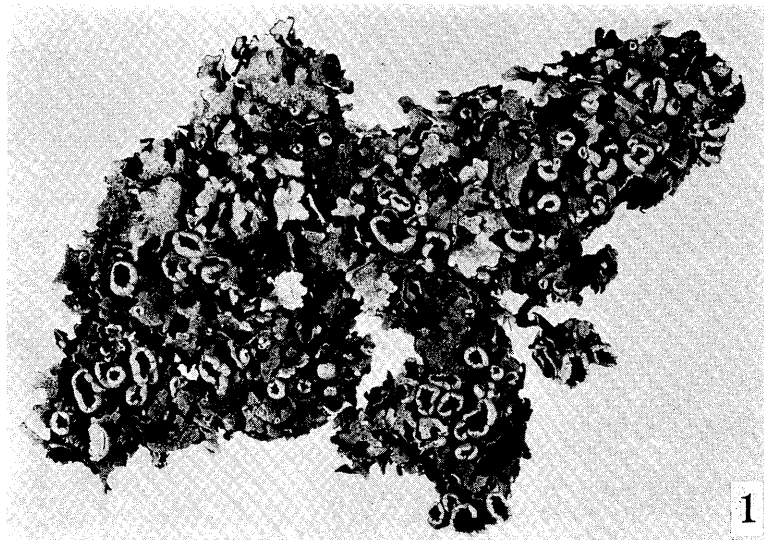
Culberson, C.F. 1965. Some microchemical tests for the lichen depsidone hypoprotocetraric acid. *Bryologist* 68: 301-304. — 1969. *Chemical and Botanical Guide to Lichen Products*. 628 pp. University of North Carolina Press. Kurokawa, S., J.A. Elix, P.L. Watson, and M.V. Sargent 1971. *Parmelia notata*, a new lichen species producing two new depsidones. *Journ. Jap. Bot.* 46: 33-36. St. Pfau, A. 1928. Zur Kenntnis der Flechtenbestandteile II. Die Konstitution der Barbatinsäure. *Helv. Chim. Acta* 11: 864-876.

### Explanation of Plate V

Fig. 1. Holotype of *Parmelia hypoprotocetrarica* Kurok. et Elix ( $\times 2$ ). Fig. 2. Holotype of *Parmelia subnuda* Kurok. ( $\times 1$ ).

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オーストラリア産のウメノキゴケ属の2新種を記載した。両種とも *Xanthoparmelia* 亜属に属し、現在は東南オーストラリアの二三の地点で採集されているだけであるが、東オーストラリア全域だけでなくタスマニヤやニューージーランドでの産出も期待される。*Parmelia hypoprotocetrarica* (Plate V, fig. 1) はさきに本誌(46巻33頁)に報告した *P. notata* に似ているが、含有成分が異なり、ウメノキゴケ属ではヒポプロトセラル酸を含む最初の種類として注目される。*P. subnuda* (Plate V, fig. 2) にはウスニン酸とノルスチクチン酸のほかに、バルバチン酸とリゾニン酸が含まれる。リゾニン酸 (fig. 1-II) はバルバチン酸 (fig. 1-I) を構成する  $\beta$ -オルチンであるが、人為的な加水分解による産物ではなく、天然に存在することを確認した。この事実はデブシド(この場合バルバチン酸)とその前駆物質にあたる  $\beta$ -オルチン(この場合リゾニン酸)が同時に存在することを示しており、デブシドの生合成の見地から興味をもたれる。



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