

ON THE IDENTITY OF *IRPEX VELLEREUS* BERK. & BR.,
POLYPORUS VENUSTUS BERK. AND *TRAMETES*
VERSATILIS BERK.

BY

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Key words : Identity, *Irpex vellereus*, *Polyporus venustus*, *Trametes versatilis*

As *Irpex vellereus*, *Polyporus venustus* and *Trametes versatilis* are confused. Morphological and anatomical characters of these species have been critically studied. It is concluded that *T. versatilis* is dimitic in construction and is completely different from *I. vellereus* and *P. venustus* which are monomitic and also synonymous.

INTRODUCTION

During the study of the Indian polypores it becomes evident that the identity of some species still remains uncertain. *Irpex vellereus* Berk. & Br. and *Trametes versatilis* Berk. are two such species which occur profusely in India. *T. versatilis* has been described as having dimitic basidiocarps by Cunningham (1965), Bakshi (1971) and Ryvarden and Johansen (1980). The last two authors places *Polyporus venustus* Berk. in synonymy with *T. versatilis*, implying thereby that *P. venustus* is also dimitic. But according to Cunningham (1965), *P. venustus* is monomitic and is synonymous with the fungus *I. vellereus*, which is also reported by Bakshi (1971) to produce monomitic basidiocarps.

Such confusion about these species prompted us to take up this work. We made detailed morphological and microscopical studies of several collections of the aforesaid species and conclude that *P. venustus* and *I. vellereus* are synonymous and monomitic, while *T. versatilis* is completely different from them and it is dimitic in construction. Descriptions of these fungi are presented followed by discussion which is confined to comparison. As in India, *I. vellereus* is the popular name of the monomitic fungus and not *P. venustus* the former nomenclature is used while making comparison in the discussion.

OBSERVATIONS

Polyporus venustus Berk. Hook. Lond. J. Bot. 4 : 55, 1845 = *Irpex vellereus* Berk. & Br. Linn. Soc. Lond., 14 : 61, 1875.

Specimens examined :

P. venustus PDD* 5378, 15122, 6829

I. vellereus VBMH** 80451, 80452, 80453

Basidiocarp effuso-reflexed or resupinate, imbricate, coriaceous, up to $3 \times 1.5 \times 0.5$ cm ; pileus surface pinkish grey, tomentose to hirsute, faintly zonate, margin thin ; context cream coloured to pinkish, 1 mm thick, hymenial surface pinkish when fresh, brownish when old, with a sterile border, 2.5 mm wide, poroid near the margin, otherwise irpiciform, sometimes daedaloid, pores 1-2 per mm, pore tubes upto 4 mm long.

Hyphal system monomitic. Generative hyphae (Fig. 1) hyaline, mostly thick-walled with narrow lumina, some thin-walled, simple septate, branched, often encrusted, $2.2-4 \mu\text{m}$ wide acyanophilous, non-amyloid and non-dextrinoid, basidia (Fig. 2) thin to slightly thick-walled, sub clavate, 4-sterigmate, $18.4-22.7 \times 4.2-6.2 \mu\text{m}$, basidiospores (Fig. 3) hyaline, thin-walled, oblong-ellipsoid, $4.5-6.5 \times 2-3 \mu\text{m}$, acyanophilous, non-amyloid and non-dextrinoid ; cystidia thick-walled, long, cylindrical or club-shaped, not fusoid, originating from subhymenium, encrusted at the apex or on the greater part of the distal ends, $40-45 \times 4.2-5.5 \mu\text{m}$; acanthophyses frequent in the hymenial region, sometimes warty projections appearing in the cystidia also.

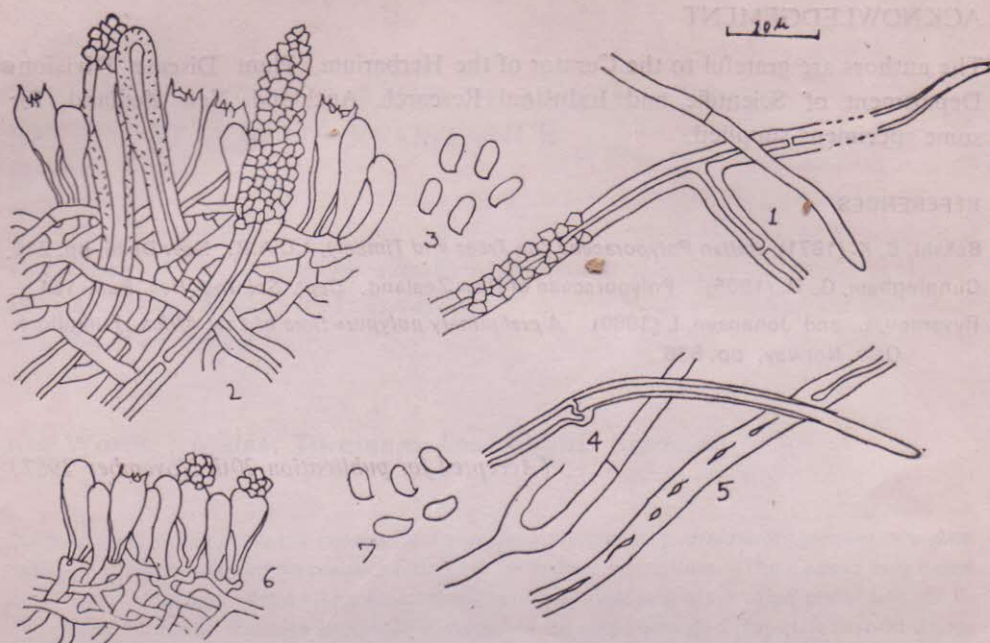
Trametes versatilis Berk. Hook. Lond. J. Bot. 1 : 150, 1842 Specimens examined : VBMH 841134, 73029, 73028, 73027.

Basidiocarps pileate to sessile, attached with a broad base, resupinate to reflexed, solitary or imbricate ; surface strigose-hirsute to hispid, azonate to zonate, colour dirty grey ; context very thin upto 1 mm thick ; hymenial surface deep purple when fresh, dirty brown on drying ; pore daedaloid to irpicoid, 1-2 per mm.

Hyphal system dimitic. Generative hyphae (Fig. 4) hyaline to pale brown, with sparse clamp connections and also showing simple septa, branched, mostly thick-walled, few thin-walled, $1.4-3.2 \mu\text{m}$ wide ; skeletal hyphae (Fig. 5) hyaline to pale brown, thick-walled, subsolid, unbranched, occasionally tortuous, aseptate, $2.5-3.5 \mu\text{m}$ wide, both the kinds of hyphae acyanophilous, non-dextrinoid and non-amyloid ; basidia subclavate, thin to slightly thick-walled, 4-sterigmate, $8.5-11 \times 4.2-5.4 \mu\text{m}$; basidiospores (Fig. 7) hyaline, thin-walled, oblong-ellipsoid, acyanophilous, non-amyloid and non-dextrinoid, $4.2-6.2 \times 2.6-3 \mu\text{m}$; cystidia originating from hymenial layer, hyaline, thick-walled, fusoid, mostly with crown of yellow crystals, $10.7-14.3 \times 4.5-5.2 \mu\text{m}$; hyphal peg present.

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Figs. 1-3. *Irpex vellereus* Berk. & Br. Fig. 1. Generative hyphae. Fig. 2. Hymenium.
Fig. 3. Basidiospores.

Figs. 4-7. *Trametes versatilis* Berk. Fig. 4. Generative hyphae. Fig. 5. Skeletal hyphae.
Fig. 6. Hymenium. Fig. 7. Basidio pores.

DISCUSSION

From the descriptions given above it is evident that morphologically *I. vellereus* (*P. venustus*) is very close to *T. versatilis*, but they differ widely microscopically. *I. vellereus* is monomitic bearing hyaline simple septate generative hyphae often showing encrustations, while *T. versatilis* is dimitic bearing hyaline to pale brown generative hyphae with clamp connections and also simple septa, and skeletal hyphae. Cystidia are present in both, but in *T. versatilis*, they are fusoid, encrusted only at the apex and always originate from the hymenial region; but in *I. vellereus*, the cystidia are cylindrical, with encrustations at the apex or on the greater part of their distal ends, never fusoid, and they originate from subhymenial region. Besides, acanthophyses which are quite common in the hymenial region of *I. vellereus* are lacking in *T. versatilis*. This leads to the conclusion that *P. venustus* and *I. vellereus* are not synonymous, as opined by Ryvarden and Johansen (1981), and they are two different species. *P. venustus* however, is synonymous with *I. vellereus* and we agree with Cunningham (1965) in this respect.

ACKNOWLEDGEMENT

The authors are grateful to the Curator of the Herbarium, Plant Disease Division, Department of Scientific and Industrial Research, Auckland, New Zealand, for some specimens supplied.

REFERENCES

- Bakshi, B. K. (1971). *Indian Polyporaceae (on Trees and Timber)*, I.C.A.R., New Delhi, pp. 246.
Cunningham, G. H. (1965). Polyporaceae of New Zealand. *Dept. Sci. Ind. Res. Bull.* 164.
Ryvarden, L. and Johansen, I. (1980). *A preliminary polypore flora of East Africa*. Fungiflora, Oslo, Norway, pp. 636.

(Accepted for publication 20th November 1987)