



# THE LEGITIMATE SCIENTIFIC NAME OF THE VALUABLE MEDICINAL MUSHROOM “NIU-CHANG-CHIH” KNOWN ONLY FROM TAIWAN

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## ABSTRACT

“*Niu-Chang-Chih*” is a valuable medicinal mushroom known only from Taiwan. It has long been used in folk medicine as an antidote for alcohol and drug intoxication, as an anticancer agent in liver cancer and in the treatment of diarrhea, abdominal pain, hypertension and skin itching. The pharmacological activities and the chemical constituents of crude extract of “*Niu-Chang-Chih*” are quite different from those reported for ‘*Linzhi*’ (*Ganoderma lucidum*). Thus, a legitimate scientific name for the mushroom is essential for health, trade, conservation, property rights protection, and data retrieval systems. The desirability for use of a legitimate name is not only evident, but such use is becoming increasingly urgent with wider recognition of the important role the mushroom plays in bioindustry and biotechnology. There are four scientific names related to the mushroom “*Niu-Chang-Chih*” in the commercial and scientific literature: *Ganoderma camphoratum* Zang et Su, 1990; *Antrodia cinnamomea* Chang et Chou, 1995; *Antrodia camphorata* (Zang et Su) Wu *et al.*, 1997; and *Taiwanofungus camphoratus* (Zang et Su) Wu *et al.*, 2004. In order to determine the legitimate name from those cited for the mushroom, the nomenclatural standing with regard to legitimacy of each name is critically reviewed in accordance with particular rules of the *International Code of Nomenclature for algae, fungi, and plants* (ICN, the Melbourne

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Editorial note: The main subject of this paper is in process of being solved. The editors are open to editorials, letters or manuscripts from colleagues interested in this constructive discussion.

Code of 2011). Clearly they all are effectively and validly published names. However, the name *G. camphoratum* is legitimate for a “*Linzhi*” mushroom, but illegitimate for the “*Niu-Chang-Chih*” mushroom because it is based on a mixed nomenclatural type (HKAS 22294) with two taxonomically discordant elements. The echinulate *Ganoderma* spore element of the mixed holotype HKAS 22294 was later separated and designated as lectotype of *G. camphoratum* by Chang and Chou in 2004. In addition, the new combinations *A. camphorata* (1997) and *T. camphoratus* (2004) were superfluous names for *A. cinnamomea* (1995) when published and must be rejected because the name *A. cinnamomea* was readily available. Each mushroom can bear only one legitimate name and any name that is contrary to rules of the ICN must be rejected unless conserved or sanctioned by the International Botanical Congress. Consequently, *A. cinnamomea* is the only “legitimate” name now available for the mushroom “*Niu-Chang-Chih*” with the holotype TFRI 119. It is thus incorrect (wrong) to cite these illegitimate names *A. camphorata* and *T. camphoratus* as taxonomic synonyms of the legitimate name *A. cinnamomea*. Unfortunately, these illegitimate names *A. camphorata* and *T. camphoratum* are still frequently cited in the literature, including the patent literature, for “*Niu-Chang-Chih*”.

**Key words:** *Antrodia cinnamomea*, illegitimate names, legitimate name, medicinal mushroom, “*Niu-Chang-Chih*”, nomenclatural status, Taiwan.

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