

## Minutes

## International Committee on Systematics of Prokaryotes

Subcommittee on the taxonomy of *Agrobacterium* and *Rhizobium*

K. Lindström, *Secretary*  
E. Martínez-Romero, *Chairperson*

Minutes of the meeting, 23–24 July 2006, Århus, Denmark

**Minute 1. Call to order.** The closed meeting was called to order by the Chairperson, E. Martínez-Romero, at 12:30 on 23 July 2006 during the 7th European Nitrogen Fixation Conference in Århus, Denmark. The meeting was adjourned at 14:00 on 23 July 2006 and reconvened on the same site at 12:30 on 24 July 2006.

**Minute 2. Record of attendance.** The members present on 23–24 July 2006 were B. Eardly, P. de Lajudie, K. Lindström, E. Martínez-Romero and J. P. W. Young. All subcommittee members had the opportunity to participate in the online discussions.

**Minute 3. New taxa described since the last meeting.** *Azorhizobium doebereineriae* Moreira *et al.* 2006 sp. nov. [*Syst Appl Microbiol* **29** (2006), 197–206; Validation List no. 110, *Int J Syst Evol Microbiol* **56** (2006), 1459–1460], a microsymbiont of *Sesbania virgata*. *Bradyrhizobium betae* Rivas *et al.* 2004 sp. nov. [*Int J Syst Evol Microbiol* **54** (2004), 1271–1275]: this name is validly published, but the description is based on only one strain or one clone. We recommend that larger populations are studied before the description of novel species. Forms tumour-like structures on *Beta vulgaris*. *Bradyrhizobium canariense* Vinuesa *et al.* 2005 sp. nov. [*Int J Syst Evol Microbiol* **55** (2005), 569–575]: the description of this species is based on large strain collections from different sites and hosts and uses a multilocus sequence analysis approach for species demarcation. Acid-tolerant; nodulates genistoid legumes. Two novel *Bradyrhizobium japonicum* biovarieties were also described, bv. genistearum and bv. glycinearum, which nodulate genistoid legumes and soybeans, respectively. *Mesorhizobium septentrionale* Gao *et al.* 2004 sp. nov. and *Mesorhizobium temperatum* Gao *et al.* 2004 sp. nov., microsymbionts of *Astragalus adsurgens* [*Int J Syst Evol Microbiol* **54** (2004), 2003–2012]. *Mesorhizobium thiogangeticum* Ghosh and Roy 2006 sp. nov. [*Int J Syst Evol Microbiol* **56** (2006), 91–97], a chemolithotrophic rhizosphere bacterium.

**Minute 4. The phylogeny and naming of *Sinorhizobium* versus *Ensifer*.** The subcommittee noted the proposal by Willems *et al.* [*Int J Syst Evol Microbiol* **53** (2003), 1207–1217] to amalgamate the genera *Sinorhizobium* and

*Ensifer*. The name *Ensifer* was published in 1982, before the name *Sinorhizobium*, which was not published until 1988. The rules of precedence determine that *Ensifer* has priority over *Sinorhizobium*, so a combined genus would be called *Ensifer*. However, phylogenies based on several core genes suggest that *Ensifer adhaerens* and *Sinorhizobium morelense* form a sister clade to the rest of the *Sinorhizobium* species [Martens *et al.*, *Int J Syst Evol Microbiol* **57** (2007), 489–503]. If confirmed, this could be a basis for retaining *Sinorhizobium* and *Ensifer* as distinct genera.

**Minute 5. New members.** It was proposed online that the subcommittee should ask Professor Wei Gehong at Yangling Agricultural and Forestry University, Shaanxi, to become a member. He is Professor W. X. Chen's former student and has published several species descriptions, he works on *Rhizobium* taxonomy and has a large culture collection in China, a major source of new diversity and taxa. This proposal was accepted unanimously.

**Minute 6. The home page.** The new subcommittee website was made public in January 2007 and can be accessed at <http://edzna.ccg.unam.mx/rhizobial-taxonomy>.

**Minute 7. Guidelines for description of new taxa.** We propose to publish an opinion paper instead of new minimal standards. The subcommittee recognizes that DNA–DNA hybridization has major limitations for species delineation and will put forward the case for its replacement by sequence-based evidence.

**Minute 8. Interaction with other subcommittees.** Since legume-nodulating bacterial species belonging to the *Betaproteobacteria* have been described, the subcommittee will increase its interactions with the respective subcommittees in order to streamline guidelines and terminology.

**Minute 9. Current membership.** The current members of the subcommittee are E. Martínez-Romero (Mexico) (Chairperson), K. Lindström (Finland) (Secretary), P. van Berkum (USA), B. Eardly (USA), W. X. Chen (China), P. H. Graham (USA), B. D. W. Jarvis (New Zealand), G. Laguerre (France), P. de Lajudie (France), X. Nesme (France), P. Vinuesa (Mexico), A. Willems (Belgium) and J. P. W. Young (UK).

The meeting was continued online and closed on 14 February 2007.

**Minute 10. Next meeting.** The next meeting will be held in 2008 during the 8th European Nitrogen Fixation Conference in Gent, Belgium.

**Minute 11. Adjournment.** The closed meeting was adjourned at 14:00 on 24 July 2006. The meeting was continued online and online discussion was adjourned on 14 February 2007.