

# The Bean Bag

A newsletter to promote communication among research scientists concerned with the systematics of the Leguminosae/Fabaceae

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## FROM THE EDITOR

Barbara Mackinder

The Bean Bag is designed to promote communication among research scientists concerned with legume systematics. To achieve this goal The *Bean Bag* is issued each year and features six columns: From the Editor, News (meetings, major events, announcements, etc.), Latin American Legume Report, Nodulation and Nitrogen Fixation, Gleanings, and Recent Legume Literature. Data in the Gleanings column are derived from questionnaire sheets which Readers complete and return. If you have news about legume systematics, send it to us for this column. The Recent Legume Literature column contains published research papers of specific interest to *Bean Bag* Readers and is derived from Readers contributions in conjunction with references from *The Kew Record of Taxonomic Literature*. Recent is defined as up to 18 months old. Specific interest to *Bean Bag* Readers is defined as research papers of interest to a worldwide group of legume systematic botanists.

*Bean Bag* Readers are encouraged to send notices, observations, etc.

The *Bean Bag* can be delivered to readers via e-mail. If you wish to have your copies e-mailed to you, please send an email message to the editor (email: **B.Mackinder@kew.org**). New readers please provide your title, first and last names, full postal address and area(s) of interest.

Electronic copies of some of the past issues of The *Bean Bag* can be viewed on the World Wide Web server of the Royal Botanic Gardens, Kew, UK at <http://www.rbgekew.org.uk/herbarium/legumes/beanbag.html>. Requests for copies of past issues to be delivered as email attachments should be sent to the editor.

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## NEWS

### The Rupert Barneby Award

James L. Luteyn

The New York Botanical Garden is pleased to announce that Valquiria Ferreira Dutra, of the Universidade Federal de Viçosa is the recipient of the **Rupert Barneby Award** for the year 2007. She will be studying the genus *Mimosa* in the “campos rupestres” in Eastern Brazil.

The New York Botanical Garden now invites applications for the **Rupert Barneby Award** for the year 2008. The award of US\$ 1,000.00 is to assist researchers to visit The New York Botanical Garden to study the rich collection of Leguminosae. Anyone interested in applying for the award should submit their curriculum vitae, a detailed letter describing the project for which the award is sought, how a visit to the NYBG would help accomplish the goals of the project, and the names of 3 referees. Travel to the NYBG should be planned for sometime in the year 2008. The application should be addressed to Dr. Fabián A. Michelangeli, (e-mail: [fabian@nybg.org](mailto:fabian@nybg.org)) or Institute of Systematic Botany, The New York Botanical Garden, 200<sup>th</sup> Street and Kazimiroff Blvd., Bronx, NY 10458-5126 USA, and received no later than December 1 2007. Electronic applications are preferred. Announcement of the recipient will be made by December 15<sup>th</sup>.

Anyone interested in making a contribution to **THE RUPERT BARNEBY FUND IN LEGUME SYSTEMATICS**, which supports this award, may send their check, payable to The New York Botanical Garden, to Dr. Michelangeli.

### 2007 International Pollination Symposium on Plant-Pollinator Relationships

Iowa State University, Ames, Iowa, USA. June 24 - 28, 2007

Jennifer Tabke

**Topics and themes of the Symposium are:** Gene flow; Transgenes; Mating system dynamics; Molecular & statistical genetic advances; Conservation of plant genetic resources & pollinators; and Gene bank management. Further information can be found at: [www.ucs.iastate.edu/mnet/plantbee/home.html](http://www.ucs.iastate.edu/mnet/plantbee/home.html)

### Fifth International Legume Conference

Gwilym Lewis

Some readers will know that the next International Legume Conference (ILC5) was provisionally to be held at the Jardim Botânico do Rio de Janeiro (Rio Botanic Gardens) in September 2008. Unfortunately, Rio Botanic Gardens has had to withdraw their offer to host the conference. Currently, others in Brazil are looking at options for an alternative Brazilian venue, but if one is found, the conference would at the earliest be in 2009. Further news is awaited. Should a venue and date be confirmed prior to the distribution of the next issue of The Bean Bag, then readers who have supplied an email address will be notified by email.

### A checklist and synopsis of American species of Acacia (Leguminosae: Mimosoideae)

María de Lourdes Rico-Arce

This book, entitled **American species of Acacia** on the cover, treats 188 species of *Acacia* found in the Americas of which 159 are native and 29 are exotics. The book begins with an extensive introduction to the morphology of *Acacia*. Species accounts include detailed synonymy, descriptions and an assessment of IUCN conservation status. Line drawings are provided for about a quarter of the species and there is a section of colour photographs at the end.

More information will soon be available on CONABIO's website <http://www.conabio.gob.mx/>

# LATIN AMERICAN LEGUME REPORT

Renée H. Fortunato

## SIMPOSIO DE LEGUMINOSAS

LEGUMINOSAE EN LATINOAMÉRICA: RECIENTES AVANCES  
Santo Domingo, República Dominicana, 18-25 de junio de. 2006

En el marco del IX Congreso Latinoamericano de Botánica se efectuó el Simposio de especialistas en Leguminosas el día 22 de junio de. 2006

Coordinación: Renée H. Fortunato. Participantes: 136 personas. Durante el Simposio se presentaron las siguientes ponencias: María de Lourdes Rico Arce ([l.rico@kew.org](mailto:l.rico@kew.org)) - Actualizaciones sobre la Clasificación de la subfamilia Mimosoideae, con énfasis en los grupos más diversos en el neotrópico.

Lidia Poggio ([lidiapoggiocitoevol@hotmail.com](mailto:lidiapoggiocitoevol@hotmail.com)) Citogenética Evolutiva en Leguminosas Americanas

José Salvador Flores ([fguido@tunku.uady.mx](mailto:fguido@tunku.uady.mx)) - Florística y Etnobotánica de las Leguminosas en la Península de Yucatán, México.

Antonio Krapovickas ([ibone@agr.unne.edu.ar](mailto:ibone@agr.unne.edu.ar)) - La variabilidad del cacahuete cultivado.

On the 22/6/2006, during the ninth Latin American Botanical Congress in the Dominican Republic, a Symposium entitled "Recent Advances in Latin American Legume Research" was convened by Renée H. Fortunato. 2006. The Symposium was attended by 136 participants and the following presentations were given:

Maria de Lourdes Rico Arce ([l.rico@kew.org](mailto:l.rico@kew.org)) - Updates on the Classification of the subfamily Mimosoideae, with emphasis on the groups most diverse in the Neotropics.

Lidia Poggio ([lidiapoggiocitoevol@hotmail.com](mailto:lidiapoggiocitoevol@hotmail.com)) - Evolutionary Cytogenetics of the Legumes of the Americas.

José Salvador Flores ([fguido@tunku.uady.mx](mailto:fguido@tunku.uady.mx)) - Floristics and Ethnobotanics of the Legumes in the Yucatan Peninsula, Mexico.

Antonio Krapovickas ([ibone@agr.unne.edu.ar](mailto:ibone@agr.unne.edu.ar)) - The Variability of the Cultivated Peanut.

## NODULATION AND NITROGEN FIXATION

Legume Nodulation Reports not in Allen and Allen (1981)

Janet I. Sprent

New reports of nodulation in Brazilian species of *Mimosa* (F.B. dos Reis Jr, M.F. Simon, E. Gross, R.M. Boddey, G.N. Elliot, N.E. Neto, M. de Fatima Loureiro, L.P. de Quieros, E.K. James, pers. comm.)

*M. albolanata* Taub.  
*M. clausenii* Benth.  
*M. callithrix* Malme  
*M. cordistipula* Benth.  
*M. cyclophylla* Taub.  
*M. decorticans* Barneby  
*M. densa* Benth.  
*M. discobola* Barneby  
*M. dominarum* Barneby  
*M. foliolosa* Benth.  
*M. gardneri* Benth.  
*M. gemmulata* Barneby  
*M. gracilis* Benth.  
*M. hirsutissima* Mart.

*M. humivagans* Barneby  
*M. hypoglauca* Mart.  
*M. irrigua* Barneby  
*M. laniceps* Barneby  
*M. lanuginosa* Burkhart  
*M. lewisii* Barneby  
*M. manidea* Barneby  
*M. melanocarpa* Benth.  
*M. nuda* Benth.  
*M. pseudoradula* Glaz. ex Barneby  
*M. pseudosepiaria* Harms  
*M. pteridifolia* Benth.  
*M. pyreneae* Taub.  
*M. regina* Barneby

*M. setosissima* Taub.  
*M. setuligera* Harms.  
*M. skinneri* Benth.  
*M. speciosissima* Taub.  
*M. splendida* Barneby  
*M. thermanum* Barneby

*M. ulbrichiana* Harms.  
*M. ulei* Taub.  
*M. ursina* Mart.  
*M. venatorum* Barneby  
*M. verecunda* Benth.  
*M. vestita* Benth

New reports of nodulation in Australian legumes (A. McInnes, pers. comm.)

*Acacia rossei* F. Muell.  
*Acacia spinosissima* Benth  
*Daviesia nudiflora* Meissner

New reports of nodulation in South African legumes

*Cyclopia galioides* (Bergius) DC. (G.N. Elliot, E.K. James, J.I. Sprent, pers. comm.)  
*Cyclopia intermedia* E. Mey.  
*Cyclopia pubescens* Eckl. & Zeyh.  
*Psoralea aculeata* L. (S. Kanu and F.D.Dakora, pers comm.)

### Joseph H. Kirkbride, Jr.

This is the last article in this series. As explained in the accompanying article, 'USDA Nodulation Data in GRIN', our rhizobial nodulation data have now been incorporated into the USDA Germplasm Resources Information Network (GRIN), and are accessible via the World Wide Web, <http://www.ars-grin.gov/~sbmljw/cgi-bin/taxnodul.pl>. I plan to continue reporting new nodulation records in *The Bean Bag*, but in the future they will be reported as new in relation to the nodulation reports in GRIN.

Taxon	Status <sup>1</sup>	Source <sup>2</sup>
<i>Abarema campestris</i> (Benth.) Barneby & J. W. Grimes	+	5
<i>Abarema floribunda</i> (Benth.) Barneby & J. W. Grimes	+	5
<i>Acacia modesta</i> Wall.	+	1
<i>Adenopodia scelerata</i> (A. Chev.) Brenan	-	2
<i>Aeschynomene pulchella</i> Baker	-	2
<i>Afzelia bella</i> Harms var. <i>gracilior</i> Keay	-	2
<i>Albizia altissima</i> Hook. f.	+	2
<i>Albizia dinklagei</i> (Harms) Harms	+	2
<i>Albizia elegans</i> (Ducke) L.Rico as <i>Balizia elegans</i> (Ducke) Barneby & J. W. Grimes	+	5
<i>Alexa grandiflora</i> Ducke	-	5
<i>Amphimas pterocarpoides</i> Harms	+	2
<i>Anthoantha crassifolia</i> J. Léonard	-	2

<i>Anthoantha macrophylla</i> P. Beauv.	-	2
<i>Astragalus lusitanicus</i> Lam.	+	4
<i>Astragalus amberstianus</i> Benth.	+	1
<i>Aubrevillea kerstingii</i> (Harms) Pellegr.	-	2
<i>Aubrevillea platycarpa</i> Pellegr.	+	2
<i>Baphia capparidifolia</i> subsp. <i>polygalacea</i> Brummitt	+	2
<i>Bauhinia cupreonitens</i> Ducke	-	5
<i>Bobgunnia fistuloides</i> (Harms) J.H. Kirkbr. & Wiersema	-	2
<i>Bussea occidentalis</i> Hutch.	-	2
<i>Caesalpinia benthamiana</i> (Baill.) Herend. & Zarucchi	-	2
<i>Calliandra coriacea</i> (Willd.) Benth.	+	5
<i>Calliandra pittieri</i> Standl.	+	5
<i>Calpocalyx aubrevillei</i> Pellegr.	+	2
<i>Calpocalyx brevibracteatus</i> Harms	-	2
<i>Canavalia ensiformis</i> (L.) DC.	-	2
<i>Cassia aubrevillei</i> Pellegr.	-	2
<i>Cassia sieberiana</i> DC.	-	2
<i>Centrosema vexillatum</i> Benth.	+	5
<i>Cercis racemosa</i> Oliv.	+	3
<i>Chamaecrista kirkii</i> (Oliv.) Standl.	-	2
<i>Chamaecrista viscosa</i> (Kunth.) H. S. Irwin & Barneby	+	5
<i>Chidlowia sanguinea</i> Hoyle	+	2
<i>Clitoria arborea</i> Benth.	+	5
<i>Copaifera salikounda</i> Heckel	-	2
<i>Crotalaria cylindrocarpa</i> DC.	+	2
<i>Crotalaria doniana</i> Baker	-	2
<i>Crotalaria lachnosema</i> Stapf	+	2
<i>Crotalaria spectabilis</i> Roth	-	2
<i>Cryptosepalum tetraphyllum</i> (Hook. f.) Benth.	-	2
<i>Cyclocarpa stellaris</i> Afzel. ex Urb.	-	2

<i>Cynometra spruceana</i> Benth. var. <i>procera</i> Benth.	-	5
<i>Dalbergia afzeliana</i> G. Don	-	2
<i>Dalbergia albiflora</i> A. Chev. ex Hutch. & Dalziel subsp. <i>albiflora</i>	-	2
<i>Dalbergia bignoniae</i> Berhaut	+	2
<i>Dalbergia dalzielii</i> Hutch. & Dalziel	-	2
<i>Dalbergia oblongifolia</i> G. Don	-	2
<i>Dalbergia rufa</i> G. Don	-	2
<i>Dalbergia saxatilis</i> Hook. f.	-	2
<i>Dalbergiella welwitschii</i> (Baker) Baker f.	-	2
<i>Daniellia ogea</i> (Harms) Rolfe ex Holland	-	2
<i>Daniellia thurifera</i> Benn.	-	2
<i>Desmodium adscendens</i> (Sw.) DC.	-	2
<i>Desmodium ramosissimum</i> G. Don	-	2
<i>Desmodium velutinum</i> (Willd.) DC.	-	2
<i>Detarium heudelotianum</i> Baill.	-	2
<i>Dialium aubrevillei</i> Pellegr.	-	2
<i>Dialium dinklagei</i> Harms	-	2
<i>Dialium pobeguinii</i> Pellegr.	-	2
<i>Dimorphandra campinarum</i> Ducke	+	5
<i>Dioclea reflexa</i> Hook. f.	-	2
<i>Diploporis triloba</i> Gleason	+	5
<i>Distemonanthus benthamianus</i> Baill.	-	2
<i>Dolichos dinklagei</i> Harms	-	2
<i>Dolichos nimbaensis</i> Schnell	+	2
<i>Dolichos tonkouiensis</i> Portères	+	2
<i>Droogmansia scaettaiana</i> A. Chev. & Sillans	+	2
<i>Entada gigas</i> (L.) Fawc. & Rendle	+	2
<i>Eperua rubiginosa</i> Miq.	-	5
<i>Eriosema parviflorum</i> E. Mey. subsp. <i>parviflorum</i>	-	2
<i>Eriosema parviflorum</i> subsp. <i>collinum</i> Hepper	+	2

<i>Erythrina milbraedii</i> Harms	+	2
<i>Gilbertiodendron bilineatum</i> (Hutch. & Dalziel) J. Léonard	-	2
<i>Gilbertiodendron limba</i> (Scott-Elliot) J. Léonard	-	2
<i>Griffonia simplicifolia</i> (Vahl ex DC.) Baill.	-	2
<i>Guibourtia copallifera</i> Benn.	-	2
<i>Guibourtia ehie</i> (A. Chev.) J. Léonard	-	2
<i>Guibourtia leonensis</i> J. Léonard	-	2
<i>Hydrochorea gonggrijpii</i> (Kunth) Barneby & J. W. Grimes	+	5
<i>Hydrochorea marginata</i> (Kleinh.) Barneby & J. W. Grimes var. <i>marginata</i>	+	5
<i>Hymenaea intermedia</i> Ducke	-	5
<i>Indigofera dendroides</i> Jacq.	-	2
<i>Indigofera heudelotii</i> Benth. ex Baker var. <i>heudelotii</i>	-	2
<i>Indigofera macrophylla</i> Schumach. & Thonn.	-	2
<i>Indigofera paniculata</i> Pers. subsp. <i>paniculata</i>	-	2
<i>Indigofera simplicifolia</i> Lam.	-	2
<i>Inga acuminata</i> Benth.	+	5
<i>Inga duckei</i> Huber	+	5
<i>Inga microcalyx</i> Spruce ex Benth.	+	5
<i>Inga nobilis</i> Willd. subsp. <i>nobilis</i>	+	5
<i>Inga umbratica</i> Poepp. & Endl.	+	5
<i>Inga velutina</i> Willd.	+	5
<i>Kotschya lutea</i> (Portères) Hepper	+	2
<i>Kotschya ochreata</i> (Taub.) Dewit & P.A. Duvign. var. <i>ochreata</i>	+	2
<i>Leptoderris brachyptera</i> (Benth.) Dunn	+	2
<i>Leptoderris fasciculata</i> (Benth.) Dunn	+	2
<i>Lonchocarpus heptaphyllus</i> (Poir.) DC.	+	5
<i>Machaerium latifolium</i> Rusby	+	5
<i>Maclobium bifolium</i> (Aubl.) Pers.	-	5
<i>Maclobium campestre</i> Huber	-	5
<i>Maclobium campestre</i> Huber var. <i>arirambense</i> R. S. Cowan	-	5

<i>Macrolobium campestre</i> Huber var. <i>campestre</i>	-	5
<i>Macrolobium campestre</i> Huber var. <i>medium</i> R. S. Cowan	-	5
<i>Macrolobium multijugum</i> (DC.) Benth. var. <i>multijugum</i>	-	5
<i>Macrolobium pendulum</i> Willd. ex Vogel	-	5
<i>Macrolobium punctatum</i> Spruce ex Benth.	-	5
<i>Macrolobium suaveolens</i> Spruce ex Benth. var. <i>suaveolens</i>	-	5
<i>Macrosamanea duckei</i> (Huber) Barneby & J. W. Grimes	+	5
<i>Millettia barteri</i> (Benth.) Dunn	-	2
<i>Millettia dinklagei</i> Harms	+	2
<i>Millettia griffoniana</i> Baill.	-	2
<i>Millettia lane-poolei</i> Dunn	-	2
<i>Millettia lucens</i> (Scott-Elliot) Dunn	-	2
<i>Millettia rhodantha</i> Baill.	+	2
<i>Millettia warneckeii</i> Harms	-	2
<i>Millettia zechiana</i> Harms	+	2
<i>Mimosa guilandinae</i> (DC.) Barneby var. <i>spruceana</i> (Benth.) Barneby	+	5
<i>Mimosa myriadena</i> (Benth.) Benth.	+	5
<i>Mimosa rufescens</i> Benth.	+	5
<i>Mucuna flagellipes</i> Hook. f.	-	2
<i>Mucuna pruriens</i> (L.) DC. var. <i>pruriens</i>	-	2
<i>Mucuna pruriens</i> (L.) DC. var. <i>utilis</i> (Wall. ex Wight) Bak. ex Burck	-	2
<i>Mucuna sloanei</i> Fawc. & Rendle	-	2
<i>Neonotonia wightii</i> (Wight & Arn.) J.A.Lackey subsp. <i>wightii</i> as <i>Glycine wightii</i> Verdc. subsp. <i>wightii</i>	-	2
<i>Newtonia aubrevillei</i> (Pellegr.) Keay subsp. <i>aubrevillei</i>	-	2
<i>Newtonia duparquetiana</i> (Baill.) Keay	-	2
<i>Onobrychis cornuta</i> (L.) Desv.	+	1
<i>Ononis variegata</i> L.	+	4
<i>Ormocarpum megalophyllum</i> Harms	-	2
<i>Pachyrhizus ferrugineus</i> (Piper) M. Sørensen	+	6



<i>Pelligriniodendron diphyllum</i> (Harms) J. Léonard	-	2
<i>Peltogyne catingae</i> Ducke	-	5
<i>Philenoptera cyanescens</i> (Schumach. & Thonn.) Roberty	-	2
<i>Physostigma venenosum</i> Balf.	-	2
<i>Platysepalum hirsutum</i> (Dunn) Hepper	-	2
<i>Poecilanthe amazonica</i> (Ducke) Ducke	+	5
<i>Pterocarpus mildbraedii</i> Harms subsp. <i>mildbraedii</i>	+	2
<i>Rhynchosia brunnea</i> Baker f.	+	2
<i>Rhynchosia mannii</i> Baker	-	2
<i>Rhynchosia minima</i> (L.) DC.	-	2
<i>Rhynchosia pycnostachya</i> (DC.) Meikle	-	2
<i>Senna chrysocarpa</i> (Desv.) H. S. Irwin & Barneby	-	5
<i>Senna pendula</i> (Willd.) H. S. Irwin & Barneby	-	5
<i>Senna podocarpa</i> (Guill. & Perr.) Lock	-	2
<i>Senna reticulata</i> (Willd.) H. S. Irwin & Barneby	-	5
<i>Serianthes myriadenia</i> (Guill.) Benth.	+	5
<i>Stryphnodendron paniculatum</i> Poepp. & Endl.	+	5
<i>Swartzia grandifolia</i> Benth.	+	5
<i>Swartzia leptopetala</i> Benth.	-	5
<i>Swartzia oriximinaensis</i> R. S. Cowan	+	5
<i>Tachigali macrostachya</i> Huber	+	5
<i>Tephrosia flexuosa</i> G. Don	-	2
<i>Tephrosia nana</i> Schweinf.	-	2
<i>Tephrosia nitens</i> Benth. ex Seem.	+	5
<i>Teramnus micans</i> (Welw. ex Baker) Baker f.	-	2
<i>Tessmannia baikiaeooides</i> Hutch. & Dalziel	-	2
<i>Vigna gracilis</i> (Guill. & Perr.) Hook. f.	-	2
<i>Vigna multiflora</i> Hook. f.	-	2
<i>Vigna nigrizia</i> Hook. f.	-	2
<i>Vigna venulosa</i> Baker	+	2

<i>Xylia evansii</i> Hutch.	+	2
<i>Zygia latifolia</i> (L.) Fawc. & Rendle var. <i>lasiopus</i> (Benth.) Barneby & J. W. Grimes	+	5
<i>Zygia ramiflora</i> (F. Muell.) Kosterm.	+	5

<sup>1</sup> Status: +, root nodules reported as present; -, root nodules reported as absent.

<sup>2</sup> Source:

1. Athar, M. 2005. Nodulation of native legumes in Pakistani rangelands. *Agriculturae Conspectus Scientificus* 70(2): 49–54.
2. Diabate, M., A. Munive, S.M. de Faria, A. Ba, B. Dreyfus, and A. Galiana. 2005. Occurrence of nodulation in unexplored leguminous trees native to the West African tropical rainforest and inoculation response of native species useful in reforestation. *New Phytologist* 166: 231–239 but also see Sprent, J.I. (2005) West African legumes: the role of nodulation and nitrogen fixation. *New Phytologist* 167, 326–330 which contains a critique of the methodology of Diabate et al 2005.
3. Liu, J.-W., T.-C. En, and X. Win. 2005. Diverse rhizobia associated with woody legumes *Wisteria sinensis*, *Cercis racemosa* and *Amorpha fruticosa* grown in the temperate zone of China. *Systematic and Applied Microbiology* 28: 465–477.
4. Personal communication., 2006: Amrani Said, Laboratoire de Biologie du Sol, Faculté des Sciences Biologiques, Usthb BP32 El Alia - Bab Ezzouar, Alger 16111 - Algeria
5. Personal communication., 2006: Sergio Miana de Faria, EMRAPA Agrobiologia KM 47 antiga Estrada Rio-São Paulo, Cep 23851–970 – Seropédica, RJ, Brasil
6. Rodríguez-Navarro, D.N., M. Camacho, E.O. Leidi, R. Rivas, and E. Velázquez. 2004. Phenotypic and genotypic characterization of rhizobia from diverse geographical origin that nodulate *Pachyrhizus* species. *Systematic and Applied Microbiology* 27: 737–745.

## USDA Nodulation Data in GRIN

Joseph H. Kirkbride, Jr. and John H. Wiersema

After discussions with the Directorate of the International Legume Database and Information Service (ILDIS), a single field was created in their database for rhizobial nodulation data in 1986. Input of nodulation data into the ILDIS database had three phases: 1) entering the nodulation data from Allen and Allen (1981) with each datum referenced to that work, 2) reviewing and entering literature reporting legume nodulation published after 1979, and 3) examining and verifying the original references cited by Allen and Allen (1981) and attaching those references to the data in the ILDIS database. In 1986, Mrs. Ethel K. Allen and the University of Wisconsin Press gave their permission for the nodulation data in the Allens' book to be incorporated into the ILDIS database, and this phase was completed in 1990. The third phase was completed in early 2001. The second phase is complete up to the present, and current literature is being monitored for new data. The ILDIS Directorate gave their permission for us to use the nodulation data in the ILDIS database.

The USDA Germplasm Resources Information Network (GRIN) contains information on the USDA germplasm holdings. The ILDIS nodulation data are now incorporated into GRIN, and GRIN data are available via the World Wide Web. GRIN was selected to host the data because it could be made available on the WWW and to facilitate it being updated by USDA personnel. An access web page for the nodulation data is now available on the GRIN web site: <http://www.ars-grin.gov/~sbmljw/cgi-bin/taxnodul.pl>

Interested users are requested to try out the web page and send reactions and opinions of the overall interface, ease of use, data available, and the formatting of reported data.

The Introductory matters, including explanations of how to use the search page for the rhizobial nodulation data are not yet available. Hopefully they will be linked to this web page in the coming months via a subject bar down the right-hand side of the page. The default is to obtain all types of nodulation data (positive and negative root nodulation and positive stem nodulation); if one type or another is not desired, then uncheck the box(es) for that type(s). Queries can be made based on the traditional legume classification of Polhill, genus, species, infraspecific taxon, or by geographical unit (country or state/province). Geographical queries will be effective only for those taxa for which country/state distribution data exist in GRIN. Currently about 3,500 of the 4,700 accepted taxa, represented by 6,650 nodulation reports in GRIN, also have distribution data. The geographical queries can be either for the actual taxa with nodulation reports of a geographical unit or for the genera of a geographic unit with nodulation reports anywhere in the world.



**Options**

- ▶ GRIN TAXONOMY Home
- ▶ About GRIN TAXONOMY
- ▶ **Queries**
- Advanced Query of Species Data
- Simple Query of Species Data
- Families and Genera in GRIN
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- Federal and State Noxious Weeds in GRIN
- Rare and Endangered Plants in GRIN
- From Seed Associations' Web Page in GRIN
- Nomenclature of the PEAS database in GRIN
- Rhizobial Nodulation Data in GRIN
- ▶ Compare List to GRIN
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- ▶ Related Links
- ▶ About NGRP
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- Select Language**
- ▶ deutsch
- ▶ español
- ▶ français
- ▶ português

## GRIN Taxonomy for Plants

### Rhizobial Nodulation Data in GRIN

Select data set to search:

- Positive root nodulation reports
- Negative root nodulation reports
- Positive stem nodulation reports

Enter search criteria below.

Any or all fields can be searched. Wild cards (\*) are accepted.

Family:

- Cannabaceae
- Krameriaceae
- Fabaceae
- Fabaceae subf. Caesalpinioideae

(Use shift or control key to make multiple selections.)

Genus or species name:

(e.g. *Arachis* or *Arachis glabrata*)

- Species with nodulation reports
- Genera with potential for nodulation

in: Country:  [\(Country list\)](#)

State/Province:

(e.g. Alabama)

Cite as:

USDA, ARS, National Genetic Resources Program.  
 Germplasm Resources Information Network - (GRIN) [Online Database].  
 National Germplasm Resources Laboratory, Beltsville, Maryland.  
 URL: [http://www.ars-grin.gov/npgs/sbml/jhw/public\\_html/cgi-bin/taxnodul.pl?language=en](http://www.ars-grin.gov/npgs/sbml/jhw/public_html/cgi-bin/taxnodul.pl?language=en) (29 January 2007)

Last modified: 27 April 2006

For example if the GRIN nodulation data is queried for the genus *Anadenanthera*, a web page is returned with seven taxa listed for which nodulation reports exist. Two are accepted species, *A. colubrina* and *A. peregina*, three are infraspecific taxa, *A. colubrina* var. *cebil*, *A. colubrina* var. *colubrina*, and *A. peregina* var. *falcata*, and two taxa are synonyms, *A. falcata* and *A. macrocarpa*.

## Nodulation Plants in [GRIN](#) Taxonomy

(for the query: **genus/species** = '*Anadenanthera*'\* & (**infra-**)**family** = '*Celtidaceae, Fabaceae, Krameriaceae*' & **country** = " & **state** = " & **data set** = 'R+, R-, S+' & **report type** = 'species with nodulation data')

Abbreviations (use cursor to see details): [R+](#), [R-](#), [S+](#)

Follow links for GRIN taxon reports *or* literature references for nodulation data.

1. [Anadenanthera colubrina \(Vell.\) Brenan](#) [[R+](#),[R-](#)]
2. [Anadenanthera colubrina var. cebil \(Griseb.\) Altschul](#) [[R-](#)]
3. [Anadenanthera colubrina var. colubrina](#) [[R-](#)]
4. [Anadenanthera falcata \(Benth.\) Speg. \(=Anadenanthera peregrina var. falcata \(Benth.\) Altschul\)](#) [[R+](#)]
5. [Anadenanthera macrocarpa \(Benth.\) Brenan \(=Anadenanthera colubrina var. cebil \(Griseb.\) Altschul\)](#) [[R+](#),[R-](#)]
6. [Anadenanthera peregrina \(L.\) Speg.](#) [[R+](#)]
7. [Anadenanthera peregrina var. falcata \(Benth.\) Altschul](#) [[R+](#)]

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| [USDA](#) | [ARS](#) | [GRIN](#) | [NPGS](#) | [New Search](#) |

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Cite as:

USDA, ARS, National Genetic Resources Program.

*Germplasm Resources Information Network - (GRIN)* [Online Database].

National Germplasm Resources Laboratory, Beltsville, Maryland.

URL: [http://www.ars-grin.gov/npgs/sbml/jhw/public\\_html/cgi-bin/nodulation.pl](http://www.ars-grin.gov/npgs/sbml/jhw/public_html/cgi-bin/nodulation.pl) (29 January 2007)

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If a user clicks on a taxon name, the GRIN taxonomy page for that name will be displayed, which includes Pohill's subfamilial classification, place of original publication, infraspecific taxa, common names, economic uses, distribution, references, synonyms, links to other databases, and links to images. Following the taxon name in square brackets are symbols indicating the class(es) of nodulation report(s) known for the taxon, R+, R-, S+, positive and negative root nodulation reports and positive stem nodulation reports, respectively. If a user clicks on a symbol, the complete bibliographic reference will be displayed.

## Literature References for [GRIN](#) Taxonomy Nodulation Data

Taxon: *Anadenanthera peregrina* (L.) Speg.

- Campêlo, A. B. & J. Dóbereiner. 1969. Estudo sobre inoculação cruzada de algumas leguminosas florestais. [Pesq. Agropecu. Brasil](#) 4:67-72. [nodulation report positive for root of *Anadenanthera peregrina*].

Cite as:

USDA, ARS, National Genetic Resources Program.

*Germplasm Resources Information Network - (GRIN)* [Online Database].

National Germplasm Resources Laboratory, Beltsville, Maryland.

URL: [http://www.ars-grin.gov/npgs/sbml/jhw/public\\_html/cgi-bin/nodlit.pl?100220](http://www.ars-grin.gov/npgs/sbml/jhw/public_html/cgi-bin/nodlit.pl?100220) (29 January 2007)

[Please send us your comments](#)

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Clicking on the abbreviated journal citation, for example Pesq. Agropecu. Brasil., will open a window with the complete journal name, Pesquisas agropecuarias Brasileira, Rio de Janeiro.

The first users to contact us have already sent us 54 new nodulation reports. We hope that interested persons will access the USDA nodulation data and send us their comments at joe@nt.ars-grin.gov before we finalize the web presentation.

## GLEANINGS

CANE and his team continue their work on the breeding biologies of several papilionaceous legumes of the Great Basin and Rocky Mountains. Katharine Swoboda just completed a thesis on the breeding biology and pollinators (all bees) of *Hedysarum boreale*. Kristal Watrous is working on *Astragalus filipes*. We will be repeating manual pollinations with *Dalea ornata* and *D. searlsiae*. All of these are partly self-incompatible, with outcrossed flowers yielding more seed, fruits, germination and more vigorous progeny. The work supports a larger effort to farm these species to allow large-scale production of affordable seed for wildland restoration. (jcane@biology.usu.edu)

Cardoso and LAMMEL (ESALQ/USP, Brazil), are studying nodulation in legumes of an *Araucaria* Forest in southeastern Brazil. Several bacteria were isolated from eleven legumes and a paper is in press. Now they are working on the 16S rRNA phylogeny of the isolates. (ejbncard@esalq.usp.br).

Ellison and LISTON are continuing their molecular phylogenetic studies of the genus *Trifolium* and request samples (seeds or herbarium specimens) of the following species. If material is limited, we can use as little as a single leaflet, and have had success with specimens that are up to 50 years old. Please mail to: Dr. Nick Ellison, Grasslands Research Centre, AgResearch, Private Bag 11008, Palmerston North, New Zealand.

*T. acutiflorum* Morocco; *T. angulatum* SE Europe; *T. ankaratrense* Madagascar; *T. antucoensis* Chile; *T. attenuatum* S Rocky Mts, USA; *T. bivonae* Sicily; *T. blancheanum* Lebanon, Israel; *T. caudatum* Turkey; *T. chlorotrichum* Turkey; *T. cinctum* Balkan peninsula; *T. congestum* Balkan peninsula, Italy; *T. daveaunum* France; *T. davisii* Turkey; *T. dichroanthoides* Syria; *T. dolopium* Greece; *T. elgonense* Uganda, Kenya, Ethiopia; *T. euxinum* Turkey; *T. gillettianum* Cameroon; *T. juliani* Tunisia, Algeria; *T. mauginianum* Ethiopia; *T. meironense* Turkey, Israel; *T. mucronatum* SW USA, Mexico; *T. pachycalyx* Turkey; *T. pilczii* Balkan peninsula; *T. radicosum* Iran; *T. roussaeum* Turkey; *T. saxatile* European Alps; *T. sebastianii* SE Europe - SW Asia; *T. siskiyouense* Oregon, USA; *T. stipulaceum* S. Africa; *T. ukingense* Tanzania; *T. velenovskyi* Balkan Peninsula; *T. vestitum* Chile; *T. wenzelianum* Tanzania; *T. wettsteinii* Balkan Peninsula. (listona@bcc.orst.edu)

KIRKBRIDE visited the 1) Nationale Plantentuin van België (BR), Meise, Belgium, 2) Institut de Botanique, Université Montpellier II (MPU), Montpellier, France, 3) Muséum National d'Histoire Naturelle (P), Paris, France, and 4) Museo di Storia Naturale dell'Università (FI), Firenze, Italy in late September and early October, 2006 to examine types of *Lotus* subgen. *Pedrosia*. (joe@nt.ars-grin.gov)

KLITGAARD continues with her monographic and floristic studies of the Dalbergioid clade and the Detarioid clade. She is beginning monographic studies of *Pterocarpus* in collaboration with Nelson Zamora and beginning floristic treatments of Dalbergioid and Detarioid genera for Flora Mesoamericana. (B.Klitgaard@nhm.ac.uk)

KLITGAARD, BRUNEAU and HERENDEEN and Prenner continue their study of Legume flower evolution and have prepared two manuscripts on caesalpinoid flower evolution. (B.Klitgaard@nhm.ac.uk)

KLITGAARD, BANKS, Crane and Claxton are collaborating on a project which is exploring the usefulness of palynology for resolving relationships in the Fabales clade and have prepared a manuscript on the pollen morphology of the Polygalaceae.

MAASS continues her work researching and preparing papers on the domestication and evolution of *Lablab purpureus*. She would like to receive seed of wild *Lablab purpureus* (= *Dolichos lablab*) var. *rhomboideus* from Namibia, Madagascar or other parts of (most likely) southern Africa. She is also looking for seed of any 'wild' *Lablab purpureus* from India or Bangladesh (bmaass@gwdg.de)

Obiang-Mbomia and BRETELER have completed their revision of *Eurypetalum* (Caesalpinioideae) and submitted it for publication to Adansonia and the revision of *Crudia* Nguema & BRETELER will follow later this year.

Breteler continues to work on the African genus *Anthonota* s.l. ( $\pm 30$  species).

PLANCHUELO is the Project Director for the Research and Technology Transfer Program. National University of Córdoba and Agency for Research Promotion, Córdoba, Argentina. The research project combines studies in seed anatomy and morphology of crop legumes with taxonomic studies of wild species. Herbarium specimens of *Lupinus* and *Crotalaria* are needed for the project and herbarium specimens from Central Argentina are offered in exchange.

SIMPSON and Ulibarri are collaborating on a project investigating the phylogeny of *Adesmia*. (beryl@mail.utexas.edu)

VANDEBORGHT, is maintaining a Phaseoleae-Phaseolinae collection, chiefly centred on wild *Phaseolus* and Vigna species. Detailed data can be consulted at the following address:

<http://www.br.fgov.be/RESEARCH/COLLECTIONS/LIVING/PHASEOLUS> (T.Vanderborgh@br.fgov.be).

## RECENT LEGUME LITERATURE

Ed. Note: Every effort has been made to ensure authors' names are correctly cited but please notify the editor if your name is misspelled. Authors names in all capital letters are *Bean Bag* Readers.

Almada, R.D., Davina, J.R. and J.G. Seijo. 2006. Karyotype analysis and chromosome evolution in southernmost South American species of *Crotalaria* (Leguminosae). *Bot. J. Linn. Soc.* 150: 329-341  
Some stomatal guard cell and pollen grain sizes.

Alvarez N de, G., Meeking, R.J. and D.W.R. White. 2006. The origin, initiation and development of axillary shoot meristems in *Lotus japonicus*. *Ann. Bot.* 98: 953-963 LM, SEM.

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Atahuachi, B.M. and C.E. HUGHES. 2006. Two new species of *Mimosa* (Fabaceae) endemic to Bolivia. *Brittonia* 58(1): 59-65 2 spp. nov.

BANKS, H., Feist-Burkhart, S. and B. KLITGAARD. 2006. The unique pollen morphology of *Duparquetia* (Leguminosae: Casesalpinioideae): developmental evidence of aperture orientation using confocal microscopy. *Amer. J. Bot.* 98: 107-115 LM, SEM.

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Boss, P.K., Sreekantan, L. and M.R. Thomas. 2006. A grapevine TFL1 homologue can delay flowering and alter floral development when overexpressed in heterologous species. *Funct. Pl. Biol.* 33: 31-41 SEM & LM of flower (shoot meristem, inflorescence). Macro images of plant. Diagram of shoot architecture. *Vitis*.

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