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**Phylogenetic and taxonomic studies in *Macaranga*,
Mallotus and other acalyphoid genera (Euphorbiaceae s.s.)**
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REFERENCES

- ADANSON, M. 1763. Familles des plantes 2. Vincent, Paris.
- AIRY SHAW, H.K. 1963. Notes on Malaysian and other Asiatic Euphorbiaceae. Kew Bull. 16: 341–372.
- AIRY SHAW, H.K. 1965. Notes on Malaysian and other Asiatic Euphorbiaceae. Kew Bull. 19: 299–328.
- AIRY SHAW, H.K. 1966. Malaysian and other Asiatic Euphorbiaceae. Kew Bull. 20: 379–415.
- AIRY SHAW, H.K. 1968. Malesian and other Asiatic Euphorbiaceae. Kew Bull. 21: 379–400.
- AIRY SHAW, H.K. 1969. Notes on Malesian and other Asiatic Euphorbiaceae. Kew Bull. 23: 1–131.
- AIRY SHAW, H.K. 1971. Notes on Malesian and other Asiatic Euphorbiaceae. Kew Bull. 25: 473–553.
- AIRY SHAW, H.K. 1972. The Euphorbiaceae of Siam. Kew Bull. 26: 191–363.
- AIRY SHAW, H.K. 1974. Noteworthy Euphorbiaceae from tropical Asia. Hook. Ic. Pl. 38: 3716.
- AIRY SHAW, H.K. 1975. The Euphorbiaceae of Borneo. Kew Bull. Add. Ser. 4.
- AIRY SHAW, H.K. 1980a. The Euphorbiaceae of New Guinea. Kew Bull. Add. Ser. 8.
- AIRY SHAW, H.K. 1980b. New Euphorbiaceae from New Guinea. Kew Bull. 34: 591–606.
- AIRY SHAW, H.K. 1980c. A partial synopsis of the Euphorbiaceae–Platylobeae of Australia (excluding *Phyllanthus*, *Euphorbia* and *Calycopeplus*). Kew Bull. 35: 577–700.
- AIRY SHAW, H.K. 1981. The Euphorbiaceae of Sumatra. Kew Bull. 36: 239–374.
- AIRY SHAW, H.K. 1982. The Euphorbiaceae of Central Malesia (Celebes, Moluccas, Lesser Sunda Is.). Kew Bull. 37: 1–40.
- AIRY SHAW, H.K. 1983. An alphabetical enumeration of the Euphorbiaceae of the Philippine islands. Royal Botanic Gardens, Kew.
- AKHMETIEV, M.A. & S.V. VIKULIN. 1995. Peltate leaves *Macaranga* Thouin (Euphorbiaceae) in the Cenozoic of Eastern Sikhote-Alin' [in Russian]. Paleontol. J. 1995(2): 151–156.
- ALEJANDRO, G.D., S.G. RAZAFIMANDIMBISON & S. LIEDE-SCHUMANN. 2005. Polyphyly of *Mussaenda* inferred from ITS and trnT-F data and its implications for generic limits in Mussaendeae (Rubiaceae). Amer. J. Bot. 92: 544–557.
- ALFARO, M.E., S. ZOLLER & F. LUTZONI. 2003. Bayes or bootstrap? A simulation study comparing the performance of Bayesian Markov chain Monte Carlo sampling and bootstrapping in assessing phylogenetic confidence. Mol. Biol. Evol. 20: 255–266.
- ANGIOSPERM PHYLOGENY GROUP (APG). 1998. An ordinal classification for the families of flowering plants. Ann. Missouri Bot. Gard. 85: 531–553.
- ANGIOSPERM PHYLOGENY GROUP (APG II). 2003. An update of the Angiosperm Phylogeny Group classification for the orders and families of flowering plants: APG II. Bot. J. Linn. Soc. 141: 399–436.
- AUSTIN, J.J., E.N. ARNOLD & C.G. JONES. 2004. Reconstructing and island radiation using ancient and recent DNA: the extinct and living day geckos (*Phelsuma*) of the Mascarene islands. Mol. Phylog. Evol. 31: 109–122.
- BACKER, C.A. & R.C. BAKHUIZEN VAN DEN BRINK F. 1964. Flora of Java 1. P. Noordhoff, Groningen.
- BAILLON, H. 1858. Étude générale du groupe des Euphorbiacées. V. Masson, Paris.
- BAILLON, H. 1860. Species Euphorbiacearum. A. Euphorbiacées Africaines. Adansonia 1: 58–87.
- BÄNFER, G., B. FIALA & K. WEISING. 2004. AFLP analysis of phylogenetic relationships among myrmecophytic species of *Macaranga* (Euphorbiaceae) and their allies. Plant Syst. Evol. 249:

- 213–231.
- BÄNFER, G., U. MOOG, B. FIALA, M. MOHAMED, K. WEISING & F.R. BLATTNER. 2006. A chloroplast genealogy of myrmecophytic *Macaranga* species (Euphorbiaceae) in Southeast Asia reveals hybridisation, vicariance and long-distance dispersal. *Mol. Ecol.* 15: 4409–4424.
- BEDDOME, R.H. 1861. Contributions to the botany of southern India. *Madras J. Lit. Sci.* 2, 22: 70–71.
- BEDDOME, R.H. 1872. *Flora sylvatica* 2. Adelphi Press, Madras.
- BENTHAM, G. & J.D. HOOKER. 1880. *Genera plantarum* 3, 1. L. Reeve & Co, London.
- BERRY, P.E., A.L. HIPPI, K.J. WURDACK, B. VAN EE & R. RIINA. 2005. Molecular phylogenetics of the giant genus *Croton* and tribe Crotoneae (Euphorbiaceae sensu stricto) using ITS and *trnL-trnF* DNA sequence data. *Amer. J. Bot.* 92: 1520–1534.
- BLATTNER, F.R., K. WEISING, G. BÄNFER, U. MASCHWITZ & B. FIALA. 2001. Molecular analysis of phylogenetic relationships among myrmecophytic *Macaranga* species (Euphorbiaceae). *Mol. Phylog. Evol.* 19: 331–344.
- BLUME, C. L. 1826. *Bijdragen tot de flora van Nederlandsch Indië*, 12de stuk. Lands Drukkerij, Batavia.
- BOLLENDORFF, S.M., P.C. VAN WELZEN & J.W.F. SLIK. 2000. A taxonomic revision of *Mallotus* section *Polyadenii* (Euphorbiaceae). *Blumea* 45: 319–340.
- BRANDIS, D. 1906. *Indian trees*. A. Constable & Co., London.
- BURKILL, I.H. 1966. A dictionary of the economic products of the Malay Peninsula, repr., 1. Crown Agents for Overseas Governments and Administrations, London.
- BURMAN, N.L. 1768. *Flora Indica*. C. Haak & J. Schreuder, Leiden & Amsterdam.
- CASARETTO, J. 1843. *Novarum stirpium brasiliensium decades*. Joannis Ferrandi, Genuae.
- CHAKRABARTY, T. & M. GANGOPADHYAY. 1988a. A new species of *Cleidion* Bl. (Euphorbiaceae) from Burma. *J. Econ. Taxon. Bot.* 12: 473–474.
- CHAKRABARTY, T. & M. GANGOPADHYAY. 1988b. Notes on some Asiatic Euphorbiaceae 2. *J. Econ. Taxon. Bot.* 12: 491–493.
- CHASE, M.W., S. ZMARZTY, M.D. LLEDO, K.J. WURDACK, S.M. SWENSEN & M.F. FAY. 2002. When in doubt, put it in *Flacourtiaceae*: a molecular phylogenetic analysis based on plastid *rbcl* DNA sequences. *Kew Bull.* 57: 141–181.
- CHASE, M.W., D.E. SOLTIS, R.G. OLMSTEAD, D. MORGAN, D.H. LES, B.D. MISHLER, M.R. DUVAL, R.A. PRICE, H.G. HILLS, Y.L. QIU, K.A. KRON, J.H. RETTIG, E. CONTI, J.D. PALMER, J.R. MANHART, K.J. SYTSMA, H.J. MICHAELS, W.J. KRESS, K.G. KAROL, W.D. CLARK, M. HEDREN, B.S. GAUT, R.K. JANSEN, K.J. KIM, C.F. WIMPEE, J.F. SMITH, G.R. FURNIER, S.H. STRAUSS, Q.Y. XIANG, G.M. PLUNKETT, P.S. SOLTIS, S.M. SWENSEN, S.E. WILLIAMS, P.A. GADEK, C.J. QUINN, L.E. EGUIARTE, E. GOLENBERG, G.H. LEARN, S.W. GRAHAM, S.C.H. BARRETT, S. DAYANANDAN & V.A. ALBERT. 1993. Phylogenetics of seed plants - an analysis of nucleotide-sequences from the plastid gene *rbcl*. *Ann. Missouri Bot. Gard.* 80: 528–580.
- COOKE, T. 1906. *The flora of the presidency of Bombay* 2, 3. Taylor & Franchis, London.
- CORNER, E.H.J. 1976. *The seeds of the dicotyledons*. Cambridge University Press, Cambridge.
- CRAIB, W.G. 1911. Contributions to the flora of Siam. *Bull. Misc. Inf.* 1911: 385–474.
- CRONQUIST, A. 1988. *The evolution and classification of flowering plants*. New York Botanical Garden, New York.
- CROWE, T. 1994. Morphometrics, phylogenetic models and cladistics: Means to an end or much to do about nothing? *Cladistics* 10: 77–84.
- DALZELL, N.A. 1851. Contributions to the botany of western India. *Hooker's J. Bot. Kew Gard. Misc.* 3: 229.
- DALZELL, N.A. & A. GIBSON. 1861. *Bombay flora*. Education Society's Press, Byculla.
- DARLU, P. & G. LECOINTRE. 2002. When does the incongruence length difference test fail? *Mol. Biol. Evol.* 19: 432–437.
- DAVIES, S.J. 2001. Systematics of *Macaranga* sects. *Pachystemon* and *Pruinosae* (Euphorbiaceae). *Harv. Pap. Bot.* 6: 371–448.
- DAVIES, S.J., S.K.Y. LUM, R. CHAN & L.K. WANG. 2001. Evolution of myrmecophytism in western Malesian *Macaranga* (Euphorbiaceae). *Evolution* 55: 1542–1559.

- DAVIS, C.C. & M.W. CHASE. 2004. Elatinaceae are sister to Malpighiaceae; Peridiscaceae belong to Saxifragales. *Amer. J. Bot.* 91: 262–273.
- DAVIS, C.C., O.W. CAMPBELL, K.J. WURDACK, C.A. JARAMILLO & M.J. DONOGHUE. 2005. Explosive radiation of Malpighiales supports a Mid-Cretaceous origin of modern tropical rain forests. *Am. Nat.* 165: E36–E65.
- DAVIS, C.C., M. LATVIS, D.L. NICKRENT, K.J. WURDACK & D.A. BAUM. 2007. Floral gigantism in Rafflesiaceae. *Science* 315: 1812–1812.
- DAVIS, J.I., D.W. STEVENSON, G. PETERSEN, O. SEBERG, L.M. CAMPBELL, J.V. FREUDENSTEIN, D.H. GOLDMAN, C.R. HARDY, F.A. MICHELANGELO, M.P. SIMMONS, C.D. SPECHT, F. VERGARA-SILVA & M. GANDOLFO. 2004. A phylogeny of the monocots, as inferred from *rbcL* and *atpA* sequence variation, and a comparison of methods for calculating jackknife and bootstrap values. *Systematic Botany* 29: 467–510.
- DAYANANDAN, S., P.S. ASHTON, S.M. WILLIAMS & R.B. PRIMACK. 1999. Phylogeny of the tropical tree family Dipterocarpaceae based on nucleotide sequences of the chloroplast *rbcL* gene. *Amer. J. Bot.* 86: 1182–1190.
- DE GUZMAN, E.D., R.M. UMALI & E.D. SOTALBO. 1986. Guide to Philippine flora and fauna 3. JMC Press, Quezon City.
- DE LAET, J., S. FARRIS & P. GOLOBOFF. 2004. Treatment of multiple trees in resampling analyses. *Cladistics* 20: 590–590.
- DE LOUREIRO, J. 1790. Flora Cochinchinensis 1. J de Loureiro, Ulyssipone.
- DINERSTEIN, E. & C.M. WEMMER. 1988. Fruits Rhinoceros eat: dispersal of *Trewia nudiflora* (Euphorbiaceae) in lowland Nepal. *Ecology* 69: 1768–1774.
- DOLPHIN, K., R. BELSHAW, C.D.L. ORME & D.L.J. QUICKE. 2000. Noise and incongruence: Interpreting results of the incongruence length difference test. *Mol. Phylog. Evol.* 17: 401–406.
- DOUADY, C.J., F. DELSUC, Y. BOUCHER, W.F. DOOLITTLE & E.J.P. DOUZERY. 2003. Comparison of Bayesian and maximum likelihood bootstrap measures of phylogenetic reliability. *Mol. Biol. Evol.* 20: 248–254.
- EICHORN, K. 2006. Plant diversity after rain-forest fires in Borneo. *Blumea Suppl.* 18.
- EMSHWILLER, E. & J.J. DOYLE. 1999. Chloroplast-expressed glutamine synthetase (*nepGS*): Potential utility for phylogenetic studies with an example from *Oxalis* (Oxalidaceae). *Mol. Phylog. Evol.* 12: 310–319.
- EMSHWILLER, E. & J.J. DOYLE. 2002. Origins of domestication and polyploidy in *Oca* (*Oxalis tuberosa*: Oxalidaceae). 2. Chloroplast-expressed glutamine synthetase data. *Amer. J. Bot.* 89: 1042–1056.
- ENDLICHER, S.L. 1843. *Generum plantarum*, Suppl. 3. Fr. Beck, Wien.
- ESSER, H.-J. 2003. Fruit characters in Malaysian Euphorbiaceae. *Telopea* 10: 169–177.
- FARRIS, J.S. 1990. Phenetics in camouflage. *Cladistics* 6: 91–100.
- FARRIS, J.S., M. KALLERSJÖ, A.G. KLUGE & C. BULT. 1994. Testing significance of incongruence. *Cladistics* 10: 315–319.
- FARRIS, J.S., V.A. ALBERT, M. KALLERSJÖ, D. LIPSCOMB & A.G. KLUGE. 1996. Parsimony jackknifing outperforms neighbor-joining. *Cladistics* 12: 99–124.
- FAY, M.F., S.M. SWENSEN & M.W. CHASE. 1997. Taxonomic affinities of *Medusagyne oppositifolia* (Medusagynaceae). *Kew Bull.* 52: 111–120.
- FELSENSTEIN, J. 1985. Confidence-limits on phylogenies - an approach using the bootstrap. *Evolution* 39: 783–791.
- FIALA, B. 1996. Ants benefit pioneer trees: The genus *Macaranga* as an example of ant-plant associations in dipterocarp forest ecosystems. In: E. Schulte & D. Schöne (eds.), *Dipterocarp forest ecosystems: towards sustainable management*. World Scientific, Singapore.
- FIGGE, R.M., M. SCHUBERT, H. BRINKMANN & R. CERFF. 1999. Glyceraldehyde-3-phosphate dehydrogenase gene diversity in Eubacteria and Eukaryotes: Evidence for intra- and inter-kingdom gene transfer. *Mol. Biol. Evol.* 16: 429–440.
- FLYNN, J.J. & M.A. NEDBAL. 1998. Phylogeny of the Carnivora (Mammalia): Congruence vs incompatibility among multiple data sets. *Mol. Phylog. Evol.* 9: 414–426.
- FORSTER, G. 1786. *Florulae insularum australium prodromus*. J.C. Dieterich, Göttingen.

- FORSTER, P.I. 1999. A taxonomic revision of *Mallotus* Lour. (Euphorbiaceae) in Australia. *Austrobaileya* 5: 457–497.
- FREUDENSTEIN, J.V., C. VAN DEN BERG, D.H. GOLDMAN, P.J. KORES, M. MOLVRAJ & M.W. CHASE. 2004. An expanded plastid DNA phylogeny of Orchidaceae and analysis of jackknife branch support strategy. *Amer. J. Bot.* 91: 149–157.
- GAGNEPAIN, F. & L. BEILLE. 1925/1926. Euphorbiaceae. In: M.H. Lecomte (ed.), *Flore générale de l'Indo-Chine* 5: 229–673. Masson & Cie, Paris.
- GAMBLE, J.S. 1925. *Flora of the presidency of Madras* 2, 7. West Newman & Co. & Adlard & Son, London.
- GARCIA-CRUZ, J. & V. SOSA. 2006. Coding quantitative character data for phylogenetic analysis: A comparison of five methods. *Systematic Botany* 32: 302–309.
- GARDNER, S., P. SIDISUNTHORN & V. ANUSARNSUNTHORN. 2000. A field guide to forest trees of Northern Thailand. Kobfai Publishing Project, Bangkok.
- GOLOBOFF, P.A. 1999a. Analyzing large data sets in reasonable times: solutions for composite optima. *Cladistics* 15: 415–428.
- GOLOBOFF, P.A. 1999b. NONA (NO NAME) ver. 2. Published by the author, Tucumán, Argentina.
- GOLOBOFF, P.A. & D. POL. 2005. Parsimony and Bayesian phylogenetics. In: V.A. Albert (ed.), *Parsimony, phylogeny and genomics*: 145–159. Oxford University Press, Oxford.
- GOLOBOFF, P.A., J.S. FARRIS & K.C. NIXON. 2003a. T.N.T. Tree analysis using New Technology. Program and documentation, available at <http://www.zmuc.dk/public/phylogeny/tnt>.
- GOLOBOFF, P.A., C.I. MATTONI & A.S. QUINTEROS. 2006. Continuous characters analyzed as such. *Cladistics* 22: 589–601.
- GOLOBOFF, P.A., J.S. FARRIS, M. KÄLLERSJÖ, B. OXELMAN, M.J. RAMÍREZ & C.A. SZUMIK. 2003b. Improvements to resampling measures of group support. *Cladistics* 19: 324–332.
- GOVAERTS, R., D.G. FRODIN & A. RADCLIFFE-SMITH. 2000. World checklist and bibliography of Euphorbiaceae (and Pandaceae). Royal Botanic Gardens, Kew.
- GREEN, P.S. 1986. New combinations in *Baloghia* and *Codiaeum* (Euphorbiaceae). *Kew Bull.* 41: 1026.
- GRIERSON, A.J.C. & D.G. LONG. 1987. *Flora of Bhutan* 1, 3. Royal Botanic Garden, Edinburgh.
- GUINDON, S. & O. GASCUEL. 2003. A simple, fast, and accurate algorithm to estimate large phylogenies by maximum likelihood. *Syst. Biol.* 52: 696–704.
- HAEGENS, R.M.A.P. 2000. Taxonomy, phylogeny, and biogeography of *Baccaurea*, *Distichirhops*, and *Nothobaccaurea* (Euphorbiaceae). *Blumea Suppl.* 12.
- HALL, T.A. 1999. BioEdit: a user-friendly biological sequence alignment editor and analysis program for Windows 95/98/NT. *Nucleic Acids Symp. Ser.* 41: 95–98.
- HENDERSON, C.P. & I.R. HANCOCK. 1988. *A guide to the useful plants of Solomon Islands*. Ministry of Agriculture and Lands, Honaira.
- HENNIG, W. 1966. *Phylogenetic systematics*. University of Illinois Press, Urbana.
- HEY, J. 2001. The mind of the species problem. *Trends Ecol. Evol.* 16: 326–329.
- HEY, J., R.S. WAPLES, M.L. ARNOLD, R.K. BUTLIN & R.G. HARRISON. 2003. Understanding and confronting species uncertainty in biology and conservation. *Trends Ecol. Evol.* 18: 597–603.
- HILLIS, D.M. & J.J. BULL. 1993. An empirical-test of bootstrapping as a method for assessing confidence in phylogenetic analysis. *Syst. Biol.* 42: 182–192.
- HIPP, A.L., J.C. HALL & K.J. SYTSMAN. 2004. Congruence versus phylogenetic accuracy: revisiting the Incongruence Length Difference Test. *Syst. Biol.* 53: 81–89.
- HOLDER, M. & P.O. LEWIS. 2003. Phylogeny estimation: traditional and Bayesian approaches. *Nat. Rev. Genet.* 4: 275–284.
- HOLLAND, B. & V. MOULTON. 2003. Consensus networks: a method for visualising incompatibilities in collections of trees. In: G. Benson & R. Page (eds.), *Algorithms in bioinformatics, WABI 2003*. Springer-Verlag, Berlin, Germany.
- HOLLAND, B.R., F. DELSUC & V. MOULTON. 2005. Visualizing conflicting evolutionary hypotheses in large collections of trees: Using consensus networks to study the origins of placentals and hexapods. *Syst. Biol.* 54: 66–76.
- HOOKE, J.D. 1887. *Flora of British India* 5. L. Reeve & Co, London.

- HORIUCHI, J. & H. TAKIMOTO. 2001. Plant mega-fossils from the Late Early to Early Middle Miocene Asawaka formation at Inuboe pass, Ibaraki prefecture, Kanto district, Japan. *Bull. Ibaraki Nat. Mus.* 4: 1–32.
- HUELSENBECK, J.P. & F. RONQUIST. 2001. MRBAYES: Bayesian inference of phylogenetic trees. *Bioinformatics* 17: 754–755.
- HUSON, D.H. & D. BRYANT. 2006. Application of phylogenetic networks in evolutionary studies. *Mol. Biol. Evol.* 23: 254–267.
- JANSA, S.A., S.M. GOODMAN & P.K. TUCKER. 1999. Molecular phylogeny and biogeography of the native rodents of Madagascar (Muridae: Nesomyinae): A test of the single-origin hypothesis. *Cladistics* 15: 253–270.
- JUDD, W.S., C.S. CAMPBELL, E.A. KELLOGG & P.F. STEVENS. 1999. *Plant systematics: a phylogenetic approach*. Sinauer Associates, Sunderland.
- KANJILAL, U.N., P.C. KANJILAL, R.N. DE & A. DAS. 1940. *Flora of Assam*. Prabasi Press, Calcutta.
- KATHRIARACHCHI, H., P. HOFFMANN, R. SAMUEL, K.J. WURDACK & M.W. CHASE. 2005. Molecular phylogenetics of Phyllanthaceae inferred from five genes (plastid *atpB*, *matK*, 3' *ndhF*, *rbcl*, and nuclear *PHYC*). *Mol. Phylog. Evol.* 36: 112–134.
- KATHRIARACHCHI, H., R. SAMUEL, P. HOFFMANN, J. MLINAREC, K.J. WURDACK, H. RALIMANANA, T.F. STUESSY & M.W. CHASE. 2006. Phylogenetics of tribe Phyllanthae (Phyllanthaceae; Euphorbiaceae sensu lato) based on nrITS and plastid *matK* DNA sequence data. *Amer. J. Bot.* 93: 637–655.
- KELCHNER, S.A. 2000. The evolution of non-coding chloroplast DNA and its application in plant systematics. *Ann. Missouri Bot. Gard.* 87: 482–498.
- KEßLER, P.J.A. 2000. *Secondary forest trees of Kalimantan, Indonesia. A manual to 300 selected species*. MOFEC-Tropenbos-Kalimantan Project, Balikpapan.
- KITAMURA, S., S. SUZUKI, T. YOMOTO, P. CHUAILUA, K. PLONGMAI, P. POONSWAD, N. NOMA, T. MARUHASHI & C. SUCKASAM. 2005. A botanical inventory of a tropical seasonal forest in Khao Yai National Park, Thailand: implications for fruit-frugivore interactions. *Biodiversity and Conservation* 14: 1241–1262.
- KITCHING, I.J., P.L. FOREY, C.J. HUMPHRIES & D.M. WILLIAMS. 1998. *Cladistics. The theory and practice of parsimony analysis*. Oxford University Press, Oxford.
- KIU, H.S., S.M. HWANG & Y.T. CHANG. 1996. *Euphorbiaceae 2*. *Flora Reipubl. Popularis Sin.* 44, 2. Science Press, Beijing.
- KLOTZSCH F. & A. GARCKE. 1862. *Die Botanischen Ergebnisse der Reise seiner Königl. Hoheit des Prinzen Waldemar von Preussen*. R. Decker, Berlin.
- KLUGE, A.G. 1989. A concern for evidence and a phylogenetic hypothesis of relationships among Epicrates (Boidae, Serpentes). *Syst. Zool.* 38: 7–25.
- KULJU, K.K.M. & P.C. VAN WELZEN. 2005. Revision of the genus *Cleidion* (Euphorbiaceae) in Malesia. *Blumea* 50: 197–219.
- KULJU, K.K.M. & P.C. VAN WELZEN. Proposal to conserve the name *Mallotus* against *Trewia* (Euphorbiaceae s.s.). Submitted to *Taxon*.
- KULJU, K.K.M., S.E.C. SIERRA & P.C. VAN WELZEN. 2007. Re-shaping *Mallotus* [part 2]: Inclusion of *Neotrewia*, *Octospermum* and *Trewia* in *Mallotus* s.s. (Euphorbiaceae s.s.). *Blumea* 52: 115–136.
- KULJU, K.K.M., S.E.C. SIERRA, S.G.A. DRAISMA, R. SAMUEL & P.C. VAN WELZEN. In press. Molecular phylogeny of *Macaranga*, *Mallotus*, and related genera (Euphorbiaceae s.s.): insights from plastid and nuclear DNA sequence data. *Amer. J. Bot.*
- KURZ, S. 1877. *Forest flora of British Burma 2*. Government printing, Calcutta.
- LEHTONEN, S. 2006. Phylogenetics of *Echinodorus* (Alismataceae) based on morphological data. *Bot. J. Linn. Soc.* 150: 291–305.
- LINNAEUS, C. 1753. *Species plantarum 2*. Laurentii Salvii, Stockholm.
- MADDISON, D.R. & W.P. MADDISON. 2001. *MacClade 4: Analysis of phylogeny and character evolution*. Version 4.08. Sinauer Associates, Sunderland, Massachusetts.
- MAYDEN, R.I. 1997. A hierarchy of species concepts: the denouement in the saga of the species

- problem. In: M.F. Claridge, A.H. Dawah & M.R. Wilson (eds.), *Species: the units of biodiversity*: 381–424. Chapman & Hall, London.
- McLOUGHLIN, S. 2001. The breakup history of Gondwana and its impact on pre-Cenozoic floristic provincialism. *Aust. J. Bot.* 49: 271–300.
- MCNEILL, J., F.R. BARRIE, H.M. BURDET, V. DEMOULIN, D.L. HAWKSWORTH, K. MARHOLD, D.H. NICOLSON, J. PRADO, P.C. SILVA, J.E. SKOG, J.H. WIERSEMA & N.J. TURLAND (eds.) 2006. International Code of Botanical Nomenclature (Vienna Code) adopted by the Seventeenth International Botanical Congress Vienna, Austria, July 2005. *Regnum Veg.* 146.
- MCPHERSON, G. 1995. On *Mallotus* and *Deuteromallotus* (Euphorbiaceae) in Madagascar. *Bull. Mus. Nation. Hist. Nat., B, Adansonia* 17: 169–173.
- MCPHERSON, G. & C. TIREL. 1987. Flore de la Nouvelle-Calédonie et Dépendances 14. Euphorbiacées 1. Muséum National d'Histoire Naturelle, Paris.
- MEEUSE, A.D.J. 1990. The Euphorbiaceae auct. plur., an unnatural taxon. Eburon, Delft.
- MEIJER, W. 1967. Family Euphorbiaceae. *Bot. News Bull. Forest Dept., Sabah* 7: 52.
- MERRILL, E.D. 1906. The flora of the Lamao forest reserve. *Philipp. J. Sci.* 1, suppl. 1: 1–141.
- MERRILL, E.D. 1912. Notes on Philippine Euphorbiaceae. *Philipp. J. Sci., C. Bot.* 7: 379–410.
- MERRILL, E.D. 1914. Notes on Philippine Euphorbiaceae, II. *Philipp. J. Sci., C. Bot.* 9: 461–493.
- MERRILL, E.D. 1917. An interpretation of Rumphius's Herbarium Amboinense. Bureau of Printing, Manila.
- MERRILL, E.D. 1922. New or noteworthy Philippine plants, XVII. *Philipp. J. Sci.* 20: 367–476.
- MERRILL, E.D. 1923. An enumeration of Philippine flowering plants 2. Bureau of Printing, Manila.
- MERRILL, E.D. 1926. Additions to our knowledge of the Philippine flora, III. *Philipp. J. Sci.* 30: 389–430.
- MIQUEL, F.A.W. 1859. *Flora van Nederlandsch Indië* 1, 2. F. Fleischer, Leipzig.
- MÜLLER [ARGOVIENSIS], J. 1865. Euphorbiaceae. *Linnaea* 34: 1–224.
- MÜLLER [ARGOVIENSIS], J. 1866. Euphorbiaceae. In: A. de Candolle (ed.), *Prodromus systematis universalis regni vegetabilis* 15, 2: 189–1260. V. Masson & Filii, Paris.
- MÜLLER, K. 2004. PRAP-computation of Bremer support for large data sets. *Mol. Phylog. Evol.* 31: 780–782.
- MÜLLER, K. 2005a. SeqState: primer design and sequence statistics for phylogenetic DNA datasets. *Appl. Bioinformatics* 4: 65–69.
- MÜLLER, K. 2005b. The efficiency of different search strategies in estimating parsimony jackknife, bootstrap, and Bremer support. *BMC Evol. Biol.* 5.
- MÜLLER, K. 2006. Incorporating information from length-mutational events into phylogenetic analysis. *Mol. Phylog. Evol.* 38: 667–676.
- NECKER, N.J. 1790. *Elementa botanica* 2. Neowedae, Rhenum.
- NICOLSON, D.H., C.R. SURESH & K.S. MANILAL. 1988. An interpretation of van Rheede's *Hortus Malabaricus*. *Regnum Veg.* 119.
- NIXON, K.C. 1999. The Parsimony Ratchet, a new method for rapid parsimony analysis. *Cladistics* 15: 407–414.
- NOWICKE, J.W. & M. TAKAHASHI. 2002. Pollen morphology, exine structure and systematics of Acalyphoideae (Euphorbiaceae), Part 4. *Rev. Palaeob. Palyn.* 121: 231–336.
- NOWICKE, J.W., M. TAKAHASHI & G.L. WEBSTER. 1998. Pollen morphology, exine structure and systematics of Acalyphoideae (Euphorbiaceae), Part 1. *Rev. Palaeob. Palyn.* 102: 115–152.
- NOWICKE, J.W., M. TAKAHASHI & G.L. WEBSTER. 1999. Pollen morphology, exine structure and systematics of Acalyphoideae (Euphorbiaceae), Part 2. *Rev. Palaeob. Palyn.* 105: 1–62.
- NYLANDER, J.A.A. 2004. MrModeltest v2. Program distributed by the author. Evolutionary Biology Center, Uppsala University.
- OLSEN, K.M. & B.A. SCHAAL. 1999. Evidence on the origin of cassava: phylogeography of *Maninot esculenta*. *Proc. Natl. Acad. Sci. U.S.A.* 96: 5586–5591.
- PAX, F. 1896. Euphorbiaceae. In: A. Engler & K. Prantl (eds.), *Die natürlichen Pflanzenfamilien* 3, 5: 1–119. W. Engelmann, Leipzig.
- PAX, F. & K. HOFFMANN. 1914. Euphorbiaceae – Acalypheae – Mercurialinae. In: A. Engler (ed.),

- Das Pflanzenreich IV.147.vii. W. Engelmann, Leipzig & Berlin.
- PAX, F. & K. HOFFMANN. 1919. Euphorbiaceae – Additamentum VI. In: A. Engler (ed.), Das Pflanzenreich IV.147.xiv. Engelmann, Leipzig.
- PAX, F. & K. HOFFMANN. 1931. Euphorbiaceae. In: A. Engler & H. Harms (eds.), Die natürlichen Pflanzenfamilien ed. 2, 19C: 11–233. W. Engelmann, Leipzig.
- PHILCOX, D. 1997. Euphorbiaceae. In: M.D. Dassanayake (ed.), A revised handbook to the flora of Ceylon. A.A. Balkema, Rotterdam.
- PICKETT, K.M. & C.P. RANDLE. 2005. Strange bayes indeed: uniform topological priors imply non-uniform clade priors. *Mol. Phylog. Evol.* 34: 203–211.
- PIMENTEL, R. & R. RIGGINS. 1987. The nature of cladistic data. *Cladistics* 3: 201–209.
- POSADA, D. & T.R. BUCKLEY. 2004. Model selection and model averaging in phylogenetics: Advantages of akaike information criterion and Bayesian approaches over likelihood ratio tests. *Syst. Biol.* 53: 793–808.
- PRAIN, D. 1963. Bengal plants 2. Botanical Survey of India, Calcutta.
- PRESL, C. 1845. Botanische Bemerkungen. *Abh. Königl. Böhm. Ges. Wiss.* 5, 3: 431–584.
- PRIMACK, R.B. & H.S. LEE. 1991. Population dynamics of pioneer (*Macaranga*) trees and understorey (*Mallotus*) TREES (Euphorbiaceae) in primary and selectively logged Bornean rain forests. *J. Trop. Ecol.* 7: 439–458.
- QUANDT, D., K. MÜLLER & S. HUTTUNEN. 2003. Characterisation of the chloroplast DNA *psbT-H* region and the influence of dyad symmetrical elements on phylogenetic reconstructions. *Plant Biol.* 5: 400–410.
- QUISUMBING, E. 1978. Medicinal plant of the Philippines. Katha Publishing Co., Quezon City.
- QUISUMBING, E. & E.D. MERRILL. 1928. New Philippine plants. *Philipp. J. Sci.* 37: 133–212.
- RADCLIFFE-SMITH, A. 1987. Segregate families from the Euphorbiaceae. *Bot. J. Linn. Soc.* 94: 47–66.
- RADCLIFFE-SMITH, A. 1996. Euphorbiaceae. In: G.V. Pope (ed), *Flora Zambesiaca* 9(4). Royal Botanic Gardens, Kew, UK.
- RADCLIFFE-SMITH, A. 2001. Genera Euphorbiacearum. Royal Botanic Gardens, Kew, UK.
- RADCLIFFE-SMITH, A. & R.H.A. GOVAERTS. 1997. New names and new combinations in the Euphorbiaceae–Acalyphoideae. *Kew Bull.* 52: 477–481.
- RAE, T.C. 1998. The logical basis for the use of continuous characters in phylogenetic systematics. *Cladistics* 14: 221–228.
- RANNALA, B. & Z.H. YANG. 1996. Probability distribution of molecular evolutionary trees: A new method of phylogenetic inference. *J. Mol. Evol.* 43: 304–311.
- RAUBESON, L.A. & R.K. JANSEN. 2005. Chloroplast genomes of plants. In: R.J. Henry (ed.), *Diversity en evolution of plants - Genotypic and phenotypic variation in higher plants*: 44–68. CABI Publishing, Wallingford.
- RAVEN, P.H. & D.I. AXELROD. 1974. Angiosperm biogeography and past continental movements. *Ann. Missouri Bot. Gard.* 61: 539–673.
- RAXWORTHY, C.J., M.R.J. FORSTNER & R.A. NUSSBAUM. 2002. Chameleon radiation by oceanic dispersal. *Nature* 415: 784–787.
- REICHENBACH, H.G. & H. ZOLLINGER. 1856. Rottlera. In: H. Zollinger (ed.), *Über die Rottlera-Arten*. *Linnaea* 28: 299–332.
- RENNER, S.S. 2004. Multiple Miocene Melastomataceae dispersal between Madagascar, Africa and India. *Philos. Trans. R. Soc. Lond., B, Biol. Sci.* 359: 1485–1494.
- RIDLEY, H.N. 1910. Symbiosis of ants and plants. *Ann. Bot.* 24: 457–483.
- RITTERSHAUSEN, P. 1892. Anatomisch-systematische Untersuchung von Blatt und Axe der Acalypheen. Höfling, München.
- RONQUIST, F. & J.P. HUELSENBECK. 2003. MrBayes 3: Bayesian phylogenetic inference under mixed models. *Bioinformatics* 19: 1572–1574.
- ROTH, A.G. 1821. *Novae plantarum species praesertim Indiae Orientalis*. H. Vogleri, Halberstadii.
- SAMUEL, R., H. KATHIRIARACHCHI, P. HOFFMANN, M.H.J. BARFUSS, K.J. WURDACK, C.C. DAVIS & M.W. CHASE. 2005. Molecular phylogenetics of Phyllanthaceae: Evidence from plastid *matK* and nuclear *PHYC* sequences. *Amer. J. Bot.* 92: 132–141.

- SAMUEL, R., W. GUTERMANN, T.F. STUESSY, C.F. RUAS, H.W. LACK, K. TREMETSBERGER, S. TALAVERA, B. HERMANOWSKI & F. EHRENDORFER. 2006. Molecular phylogenetics reveals *Leontodon* (Asteraceae, Lactuceae) to be diphyletic. *Amer. J. Bot.* 93: 1193–1205.
- SANG, T., D.J. CRAWFORD & T.F. STUESSY. 1995. Documentation of reticulate evolution in peonies (*Peonia*) using Internal Transcribed Spacer sequences of nuclear ribosomal DNA - Implications for biogeography and concerted evolution. *Proc. Natl. Acad. Sci. U.S.A.* 92: 6813–6817.
- SATO, S. & A. SAKAI. 2005. Birds as dispersers of *Mallotus japonicus* in a coniferous plantation. *Jpn. J. Ornithol.* 54: 23–28.
- SAVOLAINEN, V., M.F. FAY, D.C. ALBACH, A. BACKLUND, M. VAN DER BANK, M.C. CAMERON, S.A. JOHNSON, M.D. LLEDO, J.-C. PINTAUD, M. POWELL, M.C. SHEAHAN, D.E. SOLTIS, P.S. SOLTIS, P. WESTON, W.M. WHITTEN, K.J. WURDACK & M.W. CHASE. 2000. Phylogeny of eudicots: a nearly complete familial analysis based on *rbcL* gene sequences. *Kew Bull.* 55: 257–309.
- SCHATZ, G.E. 1996. Malagasy/Indo-Australo-Malesian phylogeographic connections. In: W.R. Lourenco (ed.), *Biogeography of Madagascar*: 73–83. ORSTOM editions, Paris.
- SCHOLS, P., C. D'HONDT, K. GEUTEN, V. MERCKX, S. JANSSENS & E. SMETS. 2004. MorphoCode: coding quantitative data for phylogenetic analysis. *Phyloinformatics* 4: 1–4.
- SCHUMANN, K. 1895. *Plantae Bamlerianae*. *Notizbl. Königl. Bot. Gart. Berlin* 2: 44–57.
- SCHUMANN, K. & K. LAUTERBACH. 1905. *Nachträge zur Flora der Deutschen Schutzgebiete in der Südsee*. Gebrüder Borntraeger, Leipzig.
- SIERRA, S.E.C. & P.C. VAN WELZEN. 2005. A taxonomic revision of *Mallotus* section *Mallotus* (Euphorbiaceae) in Malesia. *Blumea* 50: 249–274.
- SIERRA, S.E.C. & P.C. VAN WELZEN. 2006. *Mallotus kongkandae* (Euphorbiaceae): New record for China. *Blumea* 51: 365–366.
- SIERRA, S.E.C., P.C. VAN WELZEN & J.W.F. SLIK. 2005. A taxonomic revision of *Mallotus* sections *Philippinenses* (former section *Rottlera* - Euphorbiaceae) in Malesia and Thailand. *Blumea* 50: 221–248.
- SIERRA, S.E.C., M. APARICIO, K.K.M. KULJU, Ž. FIŠER, P.C. VAN WELZEN & R.W.J.M. VAN DER HAM. 2006. Re-shaping *Mallotus* [part 1]: Expanded circumscription and revision of the genus *Cordemoya* (Euphorbiaceae) *Blumea* 51: 519–540.
- SIERRA, S.E.C., M. APARICIO, M.J.H. GEBRAAD, K.K.M. KULJU & P.C. VAN WELZEN. 2007. The morphological range in *Mallotus* (Euphorbiaceae) and a taxonomic revision of its section *Rottleropsis* (including *Axenfeldia*) in Malesia, Thailand and Africa. *Blumea* 52: 21–113.
- SIMMONS, M.P. & H. OCHOTERENA. 2000. Gaps as characters in sequence-based phylogenetic analyses. *Syst. Biol.* 49: 369–381.
- SIMMONS, M.P., K.M. PICKETT & M. MIYA. 2004. How meaningful are Bayesian support values? *Mol. Biol. Evol.* 21: 188–199.
- SLIK, J.W.F. 2005. Assessing tropical lowland forest disturbance using plant morphological and ecological attributes. *For. Ecol. Manag.* 205: 241–250.
- SLIK, J.W.F. & P.C. VAN WELZEN. 2001a. A phylogeny of *Mallotus* (Euphorbiaceae) based on morphology: Indications for a pioneer origin of *Macaranga*. *Syst. Bot.* 26: 786–796.
- SLIK, J.W.F. & P.C. VAN WELZEN. 2001b. A taxonomic revision of *Mallotus* sections *Hancea* and *Stylanthus* (Euphorbiaceae). *Blumea* 46: 3–66.
- SLIK, J.W.F., PRIYONO & P.C. VAN WELZEN. 2000. Key to the *Macaranga* and *Mallotus* species (Euphorbiaceae) of East Kalimantan, Indonesia. *Gard. Bull. Singapore* 52: 11–87.
- SLIK, J.W.F., P.J.A. KEBLER & P.C. VAN WELZEN. 2003a. *Macaranga* and *Mallotus* species (Euphorbiaceae) as indicators for disturbance in the mixed lowland dipterocarp forest of East Kalimantan (Indonesia) *Ecol. Ind.* 2: 311–324.
- SLIK, J.W.F., A.D. POULSEN, P.S. ASHTON, C.H. CANNON, K.A.O. EICHHORN, K. KARTAWINATA, I. LANNIARI, H. NAGAMASU, M. NAKAGAWA, M.G.L. VAN NIEUWSTADT, J. PAYNE, PURWANINGSIH, A. SARIDAN, K. SIDIYASA, R.W. VERBURG, C.O. WEBB & P. WILKIE. 2003b. A floristic analysis of the lowland dipterocarp forests of Borneo. *J. Biogeogr.* 30: 1517–1531.
- SMITH, J.E. 1819. *Trewia*. In: A. Rees (ed.), *The cyclopaedia; or universal dictionary of arts, sciences and literature* 36. Longman et al., London.
- SMITH, J.J. 1910. Bijdrage 12 tot de kennis der boomsoorten op Java. Euphorbiaceae. *Meded. Dept.*

- Landb. Ned.-Indië 10: 9–637.
- SOLTIS, D.E. & P.S. SOLTIS. 1998. Choosing an approach and an appropriate gene for phylogenetic analysis. In: D.E. Soltis, P.S. Soltis & J.J. Doyle (eds.), *Molecular systematics of plants II. DNA sequencing*. Kluwer Academic Publishers, Norwell.
- SOLTIS, D.E., P.S. SOLTIS, M.E. MORT, M.W. CHASE, V. SAVOLAINEN, S.B. HOOT & C.M. MORTON. 1998. Inferring complex phylogenies using parsimony: an empirical approach using three large DNA data sets for angiosperms. *Syst. Biol.* 47: 32–42.
- SOLTIS, D.E., A.E. SENTERS, M.J. ZANIS, S. KIM, J.D. THOMPSON, P.S. SOLTIS, L.P.R. DE CRAENE, P.K. ENDRESS & J.S. FARRIS. 2003. Gunnerales are sister to other core eudicots: Implications for the evolution of pentamery. *Amer. J. Bot.* 90: 461–470.
- SOLTIS, D.E., P.S. SOLTIS, M.W. CHASE, M.E. MORT, D.C. ALBACH, M. ZANIS, V. SAVOLAINEN, W.H. HAHN, S.B. HOOT, M.F. FAY, M. AXTELL, S.M. SWENSEN, L.M. PRINCE, W.J. KRESS, K.C. NIXON & J.S. FARRIS. 2000. Angiosperm phylogeny inferred from 18S rDNA, *rbcL*, and *atpB* sequences. *Bot. J. Linn. Soc.* 133: 381–461.
- SORENG, R.J. & J. DAVIS, I. 1998. Phylogenetics and character evolution in the grass family (Poaceae): Simultaneous analysis of morphological and chloroplast DNA restriction site character sets. *Botanical Review* 64: 1–85.
- SPRENGEL, C. 1826. *Systema vegetabilium* 3. J.C. Dieterich, Göttingen.
- STEUDEL, E.T. 1841. *Nomenclator botanicus* 2, 2. J.G. Cottae, Stuttgart & Tübingen.
- STEVENS, P.F. 1991. Character states, morphological variation, and phylogenetic analysis: a review. *Systematic Botany* 16: 533–583.
- STOKES, J. 1812. *A botanical materia medica* 4. J. Johnson & Co., London.
- STRAND, A.E., J. LEEBENS-MACK & B.G. MILLIGAN. 1997. Nuclear DNA-based markers for plant evolutionary biology. *Mol. Ecol.* 6: 113–118.
- SULLIVAN, J. 1996. Combining data with different distributions of among-site rate variation. *Syst. Biol.* 45: 375–380.
- SUSILA RANI, S.R.M. & N.P. BALAKRISHNAN. 1998. Notes on *Trewia nudiflora* L. (Euphorbiaceae) and its varieties. *J. Econ. Tax. Bot.* 22: 345–352.
- SUZUKI, Y., G.V. GLAZKO & M. NEI. 2002. Overcredibility of molecular phylogenies obtained by Bayesian phylogenetics. *Proc. Natl. Acad. Sci. U.S.A.* 99: 16138–16143.
- SWART J.J. 1942. A monograph of the genus *Protium* and some allied genera (Burseraceae). *Rec. Trav. Bot. Néerl.* 39: 211–446.
- Swofford, D.L. 2003. PAUP*. Phylogenetic Analysis Using Parsimony (*and Other Methods). Version 4. Sinauer Associates, Sunderland, Massachusetts.
- Swofford, D.L., G.J. OLSEN, P.J. WADDELL & D.M. HILLIS. 1996. Phylogenetic Inference. In: D.M. Hillis, C. Moritz & B. Mable (eds.), *Molecular Systematics*: 407–514. Sinauer Associates, Sunderland, Massachusetts.
- TABERLET, P., L. GIELLY, G. PAUTOU & J. BOUVET. 1991. Universal primers for amplification of 3 noncoding regions of chloroplast DNA. *Plant Mol. Biol.* 17: 1105–1109.
- TAKAHASHI, M., J.W. NOWICKE, G.L. WEBSTER, S.S. ORLI & S. YANKOWSKI. 2000. Pollen morphology, exine structure, and systematics of Acalyphoideae (Euphorbiaceae), Part 3. *Rev. Palaeob. Palyn.* 110: 1–66.
- TALBOT, W.A. 1911. *Forest flora of the Bombay presidency and Sind* 2. Government Photographic Department, Poona.
- THIELE, K. 1993. The holy grail of the perfect character: the cladistic treatment of morphometric data. *Cladistics* 9: 275–304.
- THOMPSON, J.D., D.G. HIGGINS & T.J. GIBSON. 1994. Clustal-W - Improving the sensitivity of progressive multiple sequence alignment through sequence weighting, position-specific gap penalties and weight matrix choice. *Nucleic Acids Res.* 22: 4673–4680.
- TOKUOKA, T. & H. TOBE. 2006. Phylogenetic analyses of Malpighiales using plastid and nuclear DNA sequences, with particular reference to the embryology of Euphorbiaceae sens. str. *J. Plant. Res.* 119: 599–616.
- TOKUOKA, T. 2007. Molecular phylogenetic analysis of Euphorbiaceae sensu stricto based on plastid and nuclear DNA sequences and ovule and seed character evolution. *J. Plant Res.*

- TROUP, R.S. 1921. The silviculture of Indian trees 3. Clarendon Press, Oxford.
- TURCZANINOW, N. 1843. Decas generum plantarum hucusque non descriptorum. Bull. Soc. Imp. Nat. Moscou 16: 51–62.
- VAN DE VEN, E.A. & R.W.J.M. VAN DER HAM. 2006. Pollen of *Melodinus* (Apocynaceae): Monads and tetrads. Grana 45: 1–8.
- VAN RHEEDE, H. 1678. Hortus Indicus Malabaricus 1. J. van Someren & J. van Dyck, Amsterdam.
- VAN STEENIS, C.G.G.J. 1957. Specific and infraspecific delimitation, Flora Malesiana I, Vol. 5: clxvii–ccxxxiv.
- VAN WELZEN, P.C. 1998. Revisions and phylogenies of Malesian Euphorbiaceae: Subtribe Lasio-coccinae (*Homonoia*, *Lasiococca*, *Spathiostemon*) and *Clonostylis*, *Ricinus*, and *Wetria*. Blumea 43: 131–164.
- VAN WELZEN, P.C. & K. CHAYAMARIT. 2001. Two new *Mallotus* and two new *Sauropus* species (Euphorbiaceae) endemic to Thailand. Kew Bull. 56: 649–656.
- VAN WELZEN, P.C. & K. PHATTARAHIRANKANOK. 2001. *Mallotus kongkandae* (Euphorbiaceae), a new species from Thailand. Blumea 46: 67–69.
- VAN WELZEN, P.C. & S.E.C. SIERRA. 2006. The *Mallotus wrayi* complex (Euphorbiaceae). Blumea 51: 373–388.
- VAN WELZEN, P.C., R.W.J.M. VAN DER HAM & K.K.M. KULJU. 2004. *Mallotus glomerulatus* (Euphorbiaceae), a new species: its description, pollen, and phylogenetic position. Thai Forest Bulletin 32: 173–178.
- VAN WELZEN, P.C., S.E.C. SIERRA, J.W.F. SLIK & S.M. BOLLENDORFF. In press. *Mallotus*. In: P.C. Van Welzen & K. Chayamarit (eds.), Flora of Thailand 8(2). The Forest Herbarium, Bangkok.
- VAN WELZEN, P.C., S.E.C. SIERRA, M.J.H. GEBRAAD & K.K.M. KULJU. 2006. The distinction of five *Mallotus* species formerly in section *Hancea* (Euphorbiaceae). Blumea 51: 367–372.
- VIDAL Y SOLER, S. 1886. Revision de plantas vasculares Filipinas. M. Perez, Manila.
- VU VAN DUNG (ed.). 1996. Vietnam forest trees. Agricultural Publishing House, Hanoi.
- WATT, G. 1893. A dictionary of the economic products of India 6, 4. W.H. Allen & Co., London.
- WEBSTER, G.L. 1975. Conspectus of a new classification of the Euphorbiaceae. Taxon 24: 593–601.
- WEBSTER, G.L. 1987. The sage of the spurges: a review of classification and relationships in the Euphorbiales. Bot. J. Linn. Soc. 94: 3–46.
- WEBSTER, G.L. 1994a. Classification of the Euphorbiaceae. Ann. Missouri Bot. Gard. 81: 3–32.
- WEBSTER, G.L. 1994b. Synopsis of the genera and suprageneric taxa of Euphorbiaceae. Ann. Missouri Bot. Gard. 81: 33–144.
- WENDEL, J.F. & J.J. DOYLE. 1998. Phylogenetic incongruence: window into genome history and molecular evolution. In: D.E. Soltis, P.S. Soltis & J.J. Doyle (eds.), Molecular systematics of plants II: DNA sequencing. Kluwer Academic Publishers, Boston.
- WHITE, T.J., T. BRUNS, S. LEE & J. TAYLOR. 1990. Amplification and direct sequencing of fungal ribosomal RNA genes for phylogenetics. In: M.A. Innis, D.H. Gelfand, J.J. Sninsky & T.J. White (eds.), PCR Protocols. A Guide to Methods and Applications.: 315–322. Academic Press, San Diego.
- WHITMORE, T.C. 1965. Studies in *Macaranga*, an easy genus of Malayan wayside trees. Malayan Nat. J. 20: 89–99.
- WHITMORE, T.C. 1966. Guide to the forests of the British Solomon Islands. Oxford University Press, London.
- WHITMORE, T.C. 1969. Studies in *Macaranga*, III. First thoughts on species evolution in Malayan *Macaranga*. Biol. J. Linn. Soc. Lond. 1: 223–231.
- WHITMORE, T.C. 1973. Tree Flora of Malaya 2. Longman, London.
- WHITMORE, T.C. 1980. Studies in *Macaranga*, VIII. *Macaranga* in New Guinea and the Bismarck Archipelago. Kew Bull. 34: 599–606.
- WHITMORE, T.C. In press. Prodromus of *Macaranga* (Euphorbiaceae) [edited by M.J.E. Coode and P. Hoffmann]. Royal Botanic Gardens, Kew, UK.
- WIENS, J.J. 1998. Combining data sets with different phylogenetic histories. Syst. Biol. 47: 568–581.

- WIENS, J.J. 2001. Character analysis in morphological phylogenetics: Problems and solutions. *Syst. Biol.* 50: 688–699.
- WIENS, J.J. 2003. Missing data, incomplete taxa, and phylogenetic accuracy. *Syst. Biol.* 52: 528–538.
- WIERINGA, J.J. 1999. *Monopetalanthus* exit. A systematic study of *Aphanocalyx*, *Bikinia*, *Icuria*, *Michelsonia* and *Tetraberlinia* (Leguminosae, Caesalpinioideae). Wageningen Agricultural University Papers 99: 1–320.
- WIGHT, R. 1852. *Icones plantarum Indiae Orientalis*. J.B. Pharoah, Madras.
- WILLDENOW, C.D. 1797. *Schradera* et *Rottlera*, bina nova plantarum genera. *Gött. J. Naturwiss.* 1: 1–9.
- WILLDENOW, C.D. 1806. *Species Plantarum* ed. 4, 2. G.C. Nauk, Berlin.
- WOLFE, K.H., P.M. SHARP & W.H. LI. 1989. Rates of Synonymous Substitution in Plant Nuclear Genes. *J. Mol. Evol.* 29: 208–211.
- WOLFE, K.H., W.H. LI & P.M. SHARP. 1987. Rates of nucleotide substitution vary greatly among plant mitochondrial, chloroplast, and nuclear DNAs. *Proc. Natl. Acad. Sci. U.S.A.* 84: 9054–9058.
- WURDACK, K.J. 2002. Molecular systematics and evolution of Euphorbiaceae sensu lato. Ph.D. dissertation, University of North Carolina, Chapel Hill, North Carolina.
- WURDACK, K.J., P. HOFFMANN & M.W. CHASE. 2005. Molecular phylogenetic analysis of uniovulate Euphorbiaceae (Euphorbiaceae sensu stricto) using plastid *rbcL* and *trnL-F* DNA sequences. *Amer. J. Bot.* 92: 1397–1420.
- WURDACK, K.J., P. HOFFMANN, R. SAMUEL, A. DE BRUIJN, M. VAN DER BANK & M.W. CHASE. 2004. Molecular phylogenetic analysis of Phyllanthaceae (Phyllanthoideae Pro Parte, Euphorbiaceae sensu lato) using plastid *rbcL* DNA sequences. *Amer. J. Bot.* 91: 1882–1900.
- YODER, A.D., J.A. IRWIN & B.A. PAYSEUR. 2001. Failure of the ILD to determine data combinability for slow loris phylogeny. *Syst. Biol.* 50: 408–424.
- YUAN, Y.-M., S. WOHLHAUSER, M. MÖLLER, J. KLACKENBERG, M.W. CALLMANDER & P. KÜPFER. 2005. Phylogeny and biogeography of *Exacum* (Gentianaceae): A disjunctive distribution in the Indian Ocean basin resulted from long-distance dispersal and extensive radiation. *Syst. Biol.* 54: 21–34.
- ZOHARY, M. 1973. *Geobotanical foundations of the Middle East*. Gustav Fischer Verlag, Stuttgart.
- ZOLLINGER, H. 1856. Über die *Rottlera*-Arten. *Linnaea* 28: 299–332.

