

## **Orchid Research Newsletter No. 72**

July 2018

Molecular methods have not only revolutionized but also rejuvenated plant systematics. Quite literally so, in that more young researchers than ever are active in this field, many of them in the main countries of origin of our favourite plant family. New techniques are constantly being added to their repertoire and with Next Generation Sequencing the amount of data that becomes available is overwhelming. This is not only true for the sheer number of molecular markers generated by these new techniques, but also for the data sources themselves, the specimens. Herbarium specimens which often failed to produce DNA suitable for traditional Sanger sequencing are now in many cases a goldmine of genomic information. The implications are momentous. Nearly every species is preserved in a herbarium somewhere in the world; the largest herbaria, such as the one at Kew, have representatives of almost every orchid genus. A stable phylogenetic tree of all orchid genera, i.e., one in which every branch is well-supported, is now within reach. There can hardly be any doubt that within a decade or so we will have a phylogeny of all known species, except for the few that are not preserved in any collection or where the extant material is too sparse to allow sampling.

Then what?

I fear that there will still be disputes about the best way to translate the tree into a Linnaean classification, because so far nobody has found a set of criteria that produces a unique and useful classification when applied to any given tree. There may not be such a set. Even the criterion of monophyly does not always apply, as we know that some—probably many—groups show reticulate evolution. Nomenclatural stability is often emphasized as a desirable feature of a revised classification, but that could imply holding on to a previous classification that is objectively suboptimal. What we probably need as a community is a mechanism to reach a consensus, a classification we can all live with, even if it has bits we dislike. The genus level is undoubtedly the most contentious one, because nobody can define exactly what a genus is and because changes in generic circumscription lead to changes in nomenclature. My own philosophy here is "if it ain't broke, don't fix it." Don't split up a genus that is monophyletic and easily recognized, unless there are compelling arguments to do so. But those are the easy cases...

**André Schuiteman**

Kew

## Upcoming Conferences

We welcome any news about future orchid conferences for promotion here. Please send details to André Schuiteman ([a.schuiteman@kew.org](mailto:a.schuiteman@kew.org)) as far in advance of the event as possible, remembering that the *Orchid Research Newsletter* is published only in January and July of each year.

The **7th International Orchid Conservation Congress** will be held at the Royal Botanic Gardens, Kew, UK in 2019. Provisional dates are 28 May to 1 June. More information will be given in the next *Orchid Research Newsletter*.

## Funding Opportunities

We will be happy to announce funding opportunities, provided they explicitly involve orchid research or conservation. Please send details to André Schuiteman ([a.schuiteman@kew.org](mailto:a.schuiteman@kew.org)).

The **American Orchid Society** is soliciting grant proposals for orchid research. Deadline is March 1 of each year. For application instructions see <http://www.aos.org/about-us/orchid-research/application-guidelines.aspx>

## News from Correspondents

Please submit any news about recently completed research, future research plans and needs, change of address, upcoming or recent fieldwork, etc. to André Schuiteman ([a.schuiteman@kew.org](mailto:a.schuiteman@kew.org)). Graduate students are especially encouraged to share the subjects of their thesis or dissertation with the international community.

## Recent Orchid Nomenclature

New orchid names may be retrieved from the IPNI website: <http://www.ipni.org/ipni/plantnamesearchpage.do>. Click on "Show additional search terms" on the right-hand side of the screen. After the search page appears, type in **Orchidaceae** under family name and (for example) **2010-11-30** under "Record date" and "Added since." This will pull up a list of all names added to the IPNI database since 30 November 2010. Also be sure to check the World Checklist of Selected Plant Families (<http://apps.kew.org/wcsp/>) for accepted names and synonyms as well as for building your own checklists.

## Recent Literature

We are grateful to Paolo Grünanger for supplying references from journals dedicated to European orchids. If you are aware of any relevant citations published between July 2017 and May 2018 not listed here or in the previous issue, please send them—in the exact style below—to André Schuiteman ([a.schuiteman@kew.org](mailto:a.schuiteman@kew.org)) for publication in the next issue (January 2019). Write "ORN references" in the subject line of the email. Book citations should include author(s), year of publication, title, publisher, and place of publication (in that order). Journal titles should be spelled out in full.

## Anatomy and morphology

Eggert, C. D. F. and Pedroso-De-Moraes, C. 2017. Seed morphoanatomy and biometrics of five species of *Cattleya* Lindl. (Orchidaceae) | Morfoanatomia e biometria seminal de cinco espécies de *Cattleya* Lindl. (Orchidaceae). *Iheringia - Serie Botanica* 72(3): 432–440 (doi: 10.21826/2446-8231201772314).

Muthukumar, T. and Shenbagam, M. 2018. Vegetative anatomy of the orchid *Bulbophyllum sterile* (Orchidaceae: Epidendroideae). *Lankesteriana* 18(1): 13–22 (doi: 10.15517/lank.v18i1.32701).

Siegel, C. 2018. The miracle of the orchid seed. *Orchid Digest* 82(1): 26–39.

Staedler, Y. M., Kreisberger, T., Manafzadeh, S., Chartier, M., Handschuh, S., Pamperl, S., Sontag, S., Paun, O., and Schönenberger, J. 2018. Novel computed tomography-based tools reliably quantify plant reproductive investment. *Journal of Experimental Botany* 69(3): 525–535 (doi: 10.1093/jxb/erx405).

Zotz, G., Schickenberg, N., and Albach, D. 2017. The velamen radicum is common among terrestrial monocotyledons. *Annals of Botany* 120(5): 625–632 (doi: 10.1093/aob/mcx097).

## Books

Kretschmar, H. 2018. *Die Orchideen Deutschlands. Finden und Bestimmen*. 3rd Edition. Quelle & Meyer, Wiebelsheim [orchids of Germany].

Kreutz, C. A. J., Fateryga, A. V., and Ivanov, S. P. 2018. *Orchids of the Crimea. Description, Pattern of Life, Distribution, Threats, Conservation, Iconography*. Kreutz Publishers, Landgraaf.

Kurbel, R., and Hirse, T. 2017. *Eesti Orhideede Käsiraamat*. MTÜ Käoraamat, Tallinn [orchids of Estonia].

Pessei, A. 2017. *Orchidee in Sardegna*. Ilisso, Nuoro [orchids of Sardinia].

Rice, R. 2018. *Photo Intro to: Vandoid Orchid Genera in Asia*. Revised Edition. Nature & Travel Books, Lismore, Australia.

Swami, N. 2017. *Orchids of Ziro, Arunachal Pradesh*. Naresh Swami, Arunachal Pradesh.

Wartmann, B. A. and Wartmann, C. 2018. *Orchideenwanderungen: 24 Routen zu Hotspots in der Schweiz*. Haupt Verlag, Bern [orchids of Switzerland].

## Conservation

Assédé, E. S. P., Djangoun, C. A. M. S., Azihou, F. A., Gogan, Y. S. C., Kouton, M. D., Adomou, A. C., Geldenhuys, C. J., Chirwa, P. W., and Sinsin, B. 2018. Efficiency of conservation areas to protect orchid species in Benin, West Africa. *South African Journal of Botany* 116: 230–237 (doi: 10.1016/j.sajb.2018.02.405).

de la Torre Llorente, D. 2018. Conservation status of the family Orchidaceae in Spain based on European, national, and regional catalogues of protected species. *Scientific World Journal* 2018: art. 7958689 (doi: 10.1155/2018/7958689).

Fay, M. F. 2018. Orchid conservation: how can we meet the challenges in the twenty-first century? *Botanical Studies* 59(1): art. 16 (doi: 10.1186/s40529-018-0232-z).

Gale, S. W., Fischer, G. A., Cribb, P. J., and Fay, M. F. 2018. Orchid conservation: Bridging the gap between science and practice. *Botanical Journal of the Linnean Society* 186(4): 425–434 (doi: 10.1093/botlinnean/boy003).

Hinsley, A., De Boer, H. J., Fay, M. F., Gale, S. W., Gardiner, L. M., Gunasekara, R. S., Kumar, P., Masters, S., Metusala, D., Roberts, D. L., Veldman, S., Wong, S., and Phelps, J. 2018. A review of the trade in orchids and its implications for conservation. *Botanical Journal of the Linnean Society* 186(4): 435–455 (doi: 10.1093/botlinnean/box083).

Li, J., Gale, S. W., Kumar, P., Zhang, J., and Fischer, G. A. 2018. Prioritizing the orchids of a biodiversity hotspot for conservation based on phylogenetic history and extinction risk. *Botanical Journal of the Linnean Society* 186(4): 473–497 (doi: 10.1093/botlinnean/box084).

Pedersen, H. E., Find, J. I., Petersen, G., and Seberg, O. 2018. On the "Seidenfaden Collection" and the multiple roles botanical gardens can play in orchid conservation. *Lankesteriana* 18(1): 1–12 (doi: 10.15517/lank.v18i1.32587).

Segovia-Rivas, A., Meave, J. A., González, E. J., and Pérez-García, E. A. 2018. Experimental reintroduction and host preference of the microendemic and endangered orchid *Barkeria whartonianana* in a Mexican Tropical Dry Forest. *Journal for Nature Conservation* 43: 156–164 (doi: 10.1016/j.jnc.2018.04.004).

## Ecology

Adams, P. B. 2017. Effects of fire on *Pyrorchis nigricans* (R.Br.) D.L. Jones & M.A.Clem. in the Arthur Pieman Conservation Area, Tasmania. *The Orchadian* 19(2): 54–58.

Einmann, H. J. R. and Zotz, G. 2017. Dispersal and establishment of vascular epiphytes in human-modified landscapes. *AoB PLANTS* 9(6): art. plx052 (doi: 10.1093/aobpla/plx052) [Panama].

Mújica, E. B., Mably, J. J., Skarha, S. M., Corey, L. L., Richardson, L. W., Danaher, M. W., González, E. H., and Zettler, L. W. 2018. A comparison of ghost orchid (*Dendrophylax lindenii*) habitats in Florida and Cuba, with particular reference to seedling recruitment and mycorrhizal fungi. *Botanical Journal of the Linnean Society* 186(4): 572–586 (doi: 10.1093/botlinnean/box106).

Rasmussen, H. N. and Rasmussen, F. N. 2018. The epiphytic habitat on a living host: Reflections on the orchid-tree relationship. *Botanical Journal of the Linnean Society* 186(4): 456–472 (doi: 10.1093/botlinnean/box085).

Štípková, Z., Romportl, D., Černocká, V., and Kindlmann, P. 2017. Factors associated with the distributions of orchids in the Jeseníky Mountains, Czech Republic. *European Journal of Environmental Sciences* 7(2): 135–145 (doi: 10.14712/23361964.2017.13).

## Ethnobotany/(Ethno)pharmacology

Cakova, V., Bonte, F., and Lobstein, A. 2017. *Dendrobium*: Sources of active ingredients to treat age-related pathologies. *Aging and Disease* 8(6): 827–849 (doi: 10.14336/AD.2017.0214).

Kanlayavattanakul, M., Lourith, N., and Chaikul, P. 2018. Biological activity and phytochemical profiles of *Dendrobium*: A new source for specialty cosmetic materials. *Industrial Crops and Products* 120: 61–70 (doi: 10.1016/j.indcrop.2018.04.059).

Parveen, S., Ramesh, C. K., Mahmood, R., and Pallavi, M. 2018. Folklore medicinal orchids from South India: The potential source of antioxidants. *Asian Journal of Pharmaceutical and Clinical Research* 11(6): 194–198 (doi: 10.22159/ajpcr.2018.v11i6.24726).

Nguyen, H. C., Lin, K. H., Huang, M. Y., Yang, C. M., Shih, T. H., Hsiung, T. C., Lin, Y. C., and Tsao, F. C. 2018. Antioxidant activities of the methanol extracts of various parts of *Phalaenopsis* orchids with white, yellow, and purple flowers. *Notulae Botanicae Horti Agrobotanici Cluj-Napoca* 46(2): 457–465 (doi: 10.15835/nbha46211038).

Paudel, M. R., Chand, M. B., Pant, B., and Pant, B. 2018. Antioxidant and cytotoxic activities of *Dendrobium moniliforme* extracts and the detection of related compounds by GC-MS. *BMC Complementary and Alternative Medicine* 18(1): art. 134 (doi: 10.1186/s12906-018-2197-6).

Sarkar, N., Avasthi, A. S., and Ghosal, S. 2018. Bioactive fraction of *Tropidia curculioides*, a rare orchid of Arunachal Pradesh, India: Phytochemical profile and marker compounds. *Asian Journal of Pharmaceutical and Clinical Research* 11(5): 155–161 (doi: 10.22159/ajpcr.2018.v11i5.24145).

Wang, Q., Zi, C. T., Wang, J., Wang, Y. N., Huang, Y. W., Fu, X. Q., Wang, X. J., and Sheng, J. 2018. *Dendrobium officinale* orchid extract prevents ovariectomy-induced osteoporosis in vivo and Inhibits RANKL-induced osteoclast differentiation in vitro. *Frontiers in Pharmacology* 8(JAN): 966 (doi: 10.3389/fphar.2017.00966).

### **Micropropagation/seed germination**

Bustam, S., Sinniah, U. R., and Kumara Swamy, M. 2017. Simple and efficient in vitro method of storing *Dendrobium Sw. Shavin White* protocorm like bodies (PLBs). *Bangladesh Journal of Botany* 46: 439–449.

Calevo, J., Monroy, F., Peccenini, S., Cornara, L., and Giovannini, A. 2017. First time *in vitro* asymbiotic germination of *Orchis patens* Desf.: a preliminary study on an endangered Mediterranean orchid. *GIROS Orchidee spontanee d'Europa / European Native Orchids* 60(1): 94–104.

de Carvalho, O. C., de Paiva Neto, V. B., Padilha, D. R. C., Veloso, T. G. R., Bocayuva, M. F., Soares, D. C. O., and Kasuya, M. C. M. 2018. *Cyrtopodium paludicolum* germination with two *Tulasnella* isolates. *Acta Botanica Brasiliica* 32(1): 107–112 (doi: 10.1590/0102-33062017abb0181).

Decruse, S. W., Neethu, R. S., and Pradeep, N. S. 2018. Seed germination and seedling growth promoted by a Ceratobasidiaceae clone in *Vanda thwaitesii* Hook. f., an endangered orchid species endemic to South Western Ghats, India and Sri Lanka. *South African Journal of Botany* 116: 222–229 (doi: 10.1016/j.sajb.2018.04.002).

Duarte, E. R., Mangeón, V., Küppers, G., Rocha, P., and Niella, F. 2017. Seed size and viability: implications on the evolution and conservation of *Phaius tankervilleae* (Orchidaceae). *Caldasia* 39(2): 388–399 (doi: 10.15446/caldasia.v39n2.62184).

Frericks, J., Munkacsi, A., Ritchie, P., Luo, Y. B., and Lehnebach, C. A. 2018. Phylogenetic affinities and in vitro seed germination of the threatened New Zealand orchid *Spiranthes novae-zelandiae*. *New Zealand Journal of Botany* 56(1): 91–108 (doi: 10.1080/0028825X.2017.1418398).

- Gilián, L. D., Bódis, J., Eszéki, E., Illyés, Z., Biró, É., and Nagy, J. G. 2018. Germination traits of Adriatic lizard orchid (*Himantoglossum adriaticum*) in Hungary. *Applied Ecology and Environmental Research* 16(2): 1155–1171 (doi: 10.15666/aeer/1602\_11551171).
- Hanus-Fajerska, E. and Wojciechowska, R. 2017. Impact of light-emitting diodes (LEDs) on propagation of orchids in tissue culture. In: Gupta, S. D. (ed.), *Light Emitting Diodes for Agriculture: Smart Lighting*. 305–320 (doi: 10.1007/978-981-10-5807-3\_13).
- Hartati, S., Arniputri, R. B., Soliah, L. A., and Cahyono, O. 2017. Effects of organic additives and naphthalene acetic acid (NAA) application on the in vitro growth of Black orchid hybrid (*Coelogyne pandurata* Lindley). *Bulgarian Journal of Agricultural Science* 23(6): 951–957.
- Huang, H., Zi, X. M., Lin, H., and Gao, J. Y. 2018. Host-specificity of symbiotic mycorrhizal fungi for enhancing seed germination, protocorm formation and seedling development of over-collected medicinal orchid, *Dendrobium devonianum*. *Journal of Microbiology* 56(1): 42–48 (doi: 10.1007/s12275-018-7225-1).
- Katsalirou, E., Gerakis, A., Haldas, X., and Deconninck, G. 2017. Optimal disinfection times for seeds of mediterranean orchids propagated on nutrient media. *European Journal of Environmental Sciences* 7(2): 119–124 (doi: 10.14712/23361964.2017.10).
- Khumalo, S. I., Khan, S., Gitonga, L. N., Mugwedi, L., and Reddy, V. 2018. Optimized in vitro rooting procedure for *Eulophia streptopetala* Lindl: An indigenous southern African plant. *Acta Horticulturae* 1201: 555–560 (doi: 10.17660/ActaHortic.2018.1201.74).
- Kumar, R., Chakraborti, M., Sailo, N., Bhutia, T. C., and Singh, D. R. 2018. Asymbiotic seed germination and in vitro seedling development of *Paphiopedilum villosum* (Lindl.) Stein, a valuable and vulnerable lady's slipper orchid from India. *Current Science* 114(2): 266–269.
- Kundu, S. and Gantait, S. 2018. Thidiazuron-induced protocorm-like bodies in orchid: Progress and prospects. In: Ahmad, N. and Faisal, M. (eds), *Thidiazuron: From Urea Derivative to Plant Growth Regulator*. Springer, Singapore. Pp. 273–287 (doi: 10.1007/978-981-10-8004-3\_13).
- Li, Y. Y., Chen, X. M., Zhang, Y., Cho, Y. H., Wang, A. R., Yeung, E. C., Zeng, X., Guo, S. X., and Lee, Y. I. 2018. Immunolocalization and changes of hydroxyproline-rich glycoproteins during symbiotic germination of *Dendrobium officinale*. *Frontiers in Plant Science* 9: art. 552 (doi: 10.3389/fpls.2018.00552).
- Menezes-Sa, T. S. A., Arrigoni-Blank, M. F., da Costa, A. S., Blank, A. F., and Feitosa-Alcantara, R. B. 2018. Direct somatic embryogenesis in *Cattleya tigrina* A. Rich. *Propagation of Ornamental Plants* 18(1): 19–25.

- Mohanraj, R. 2018. Role of thidiazuron in tissue culture of orchids. In: Ahmad, N. and Faisal, M. (eds), *Thidiazuron: From Urea Derivative to Plant Growth Regulator*. Springer, Singapore. 455–462 (doi: 10.1007/978-981-10-8004-3\_26).
- Mose, W., Indrianto, A., Purwantoro, A., and Semiarti, E. 2017. The influence of thidiazuron on direct somatic embryo formation from various types of explant in *Phalaenopsis amabilis* (L.) Blume orchid. *HAYATI Journal of Biosciences* 24(4): 201–205 (doi: 10.1016/j.hjb.2017.11.005).
- Ping, K. S., Poobathy, R. R., Zakaria, R., and Subramaniam, S. 2017. Development of a PVS2 droplet-vitrification cryopreservation technique for *Aranda* Broga Blue orchid protocorm-like bodies (PLBs). *Cryo letters* 38(4): 290–298.
- Romeida, A., Supanjani, and Sinaga, S. S. 2018. Low-cost media for in vitro multiplication and development of Protocorm Like Bodies (PLBs) of *Eulophia graminea* orchid. *International Journal on Advanced Science, Engineering and Information Technology* 8(1): 78–84 (doi: 10.18517/ijaseit.8.1.1162).
- Schofield, E., Jones, E. P., and Sarasan, V. 2018. Cryopreservation without vitrification suitable for large scale cryopreservation of orchid seeds. *Botanical Studies* 59(1): art. 13 (doi: 10.1186/s40529-018-0229-7).
- Setiari, N., Purwantoro, A., Moeljopawiro, S., and Semiarti, E. 2018. Micropropagation of *Dendrobium phalaenopsis* orchid through overexpression of embryo gene AtRKD4. *Agrivita* 40(2): 284–294 (doi: 10.17503/agrivita.v40i2.1690).
- Shen, H. J., Chen, J. T., Chung, H. H., and Chang, W. C. 2018. Plant regeneration via direct somatic embryogenesis from leaf explants of *Tolumnia* Louise Elmore ‘Elsa’. *Botanical Studies* 59(1): art. 4 (doi: 10.1186/s40529-018-0220-3).
- Srivastava, D., Gayatri, M. C., and Sarangi, S. K. 2018. In vitro mutagenesis and characterization of mutants through morphological and genetic analysis in orchid *Aerides crispa* Lindl. *Indian Journal of Experimental Biology* 56(6): 385–394.
- Trunjaruen, A. and Taratima, W. 2018. An effective micropropagation of *Cymbidium aloifolium* (L.) Sw. *Thai Journal of Botany* 10(1): 77–91.
- Verma, S. and Pathak, P. 2018. Regenerative competence in root explants of medicinally important orchid *Cymbidium aloifolium*: An in vitro study. *Vegetos* 31(1): 100–103 (doi: 10.5958/2229-4473.2018.00014.9).
- Wattanapan, N., Nualsri, C., and Meesawat, U. 2018. In vitro propagation through transverse thin cell layer (Ttcl) culture system of lady’s slipper orchid: *Paphiopedilum callosum* var. *sublaeve*. *Songklanakarin Journal of Science and Technology* 40(2): 306–313 (doi: 10.14456/sjst-psu.2018.48).



Wongrasee, N. and Bunnag, S. 2018. A simple and reproducible protocol for plant regeneration and cryopreservation of *Grammatophyllum specinocum*[sic] Bl. *Songklanakarinn Journal of Science and Technology* 40(1): 251–257 (doi: 10.14456/sjst-psu.2018.6).

### Molecular biology

Callens, C., Tucker, M. R., Zhang, D., and Wilson, Z. A. 2018. Dissecting the role of MADS-box genes in monocot floral development and diversity. *Journal of Experimental Botany* 69(10): 2435–2459 (doi: 10.1093/jxb/ery086).

Dong, W. L., Wang, R. N., Zhang, N. Y., Fan, W. B., Fang, M. F., and Li, Z. H. 2018. Molecular evolution of chloroplast genomes of orchid species: Insights into phylogenetic relationship and adaptive evolution. *International Journal of Molecular Sciences* 19(3): art. 716 (doi: 10.3390/ijms19030716).

Kaewphalug, W., Srifah Huehne, P., and Sriboonlert, A. 2017. Characterization of a CONSTANS-like gene from pigeon orchid (*Dendrobium crumenatum* Swartz) and its expression under different photoperiod conditions. *Horticulture Journal* 86(2): 252–262 (doi: 10.2503/hortj.MI-123).

Kishor, R. and Sharma, G. J. 2018. The use of the hypervariable P8 region of trnL (UAA) intron for identification of orchid species: Evidence from restriction site polymorphism analysis. *PLoS ONE* 13(5): art. e0196680 (doi: 10.1371/journal.pone.0196680).

Lam, V. K. Y., Darby, H., Merckx, V. S. F. T., Lim, G., Yukawa, T., Neubig, K. M., Abbott, J. R., Beatty, G. E., Provan, J., Soto Gomez, M., and Graham, S. W. 2018. Phylogenomic inference in extremis: A case study with mycoheterotroph plastomes. *American Journal of Botany* 105(3): 480–494 (doi: 10.1002/ajb2.1070).

Li, H., Cao, H., Yu, R. P., Miao, Z., Wang, J. H., Qu, S. P., Yuan, Q., and Li, S. C. 2018. De novo transcriptome analysis of an albino mutant *Pasphiopedilum* pacific shamrock [sic—*Paphiopedilum* Pacific Shamrock] reveals reduced expression of genes related to chloroplast biosynthesis and division. *Horticulture Environment and Biotechnology* 59(3): 411–421 (doi: 10.1007/s13580-018-0037-8).

Li, J., Luo, Y., and Xu, L. 2017. Development of microsatellite markers for *Cypripedium tibeticum* (Orchidaceae) and their applicability to two related species. *Applications in Plant Sciences* 5(12): art. 1700084 (doi: 10.3732/apps.1700084).

Lu, J., Liu, Y., Xu, J., Mei, Z., Shi, Y., Liu, P., He, J., Wang, X., Meng, Y., Feng, S., Shen, C., and Wang, H. 2018. High-density genetic map construction and stem total polysaccharide content-related QTL exploration for chinese endemic *Dendrobium* (Orchidaceae). *Frontiers in Plant Science* 9: art. 398 (doi: 10.3389/fpls.2018.00398).

- Niu, Z., Pan, J., Xue, Q., Zhu, S., Wei Liu, and Ding, X. 2018. Plastome-wide comparison reveals new SNV resources for the authentication of *Dendrobium huoshanense* and its corresponding medicinal slice (Huoshan Fengdou). *Acta Pharmaceutica Sinica B* 8(3): 466–477 (doi: 10.1016/j.apsb.2017.12.004).
- Ramya, M., An, H. R., Baek, Y. S., Reddy, K. E., and Park, P. H. 2018. Orchid floral volatiles: Biosynthesis genes and transcriptional regulations. *Scientia Horticulturae* 235: 62–69 (doi: 10.1016/j.scienta.2017.12.049).
- Saputro, T. B., Semiarti, E., and Purwantoro, A. 2018. Phenotypic and molecular characterization of multishoots development in transgenic *Phalaenopsis amabilis* (L.) Blume harboring 35S::KNAT1 (KNOTTED-like *Arabidopsis thaliana* 1). *Biotropia* 25(1): 11–21 (doi: 10.11598/btb.2018.25.1.615).
- Shi, Y., Yang, L., Yang, Z., and Ji, Y. 2018. The complete chloroplast genome of *Pleione bulbocodioides* (Orchidaceae). *Conservation Genetics Resources* 10(1): 21–25 (doi: 10.1007/s12686-017-0753-x).
- Shimura, H., Masuta, C., and Koda, Y. 2018. Metagenomic analyses of the viruses detected in mycorrhizal fungi and their host orchid. *Methods in Molecular Biology* 1746: 161–172 (doi: 10.1007/978-1-4939-7683-6\_12).
- Simmons, C. L., Lamont, R. W., and Shapcott, A. 2017. Characterization of microsatellite primers in the endangered orchid *Phaius australis* and cross-amplification to *P. bernaysii* (Orchidaceae). *Applications in Plant Sciences* 5(12): art. 1700085 (doi: 10.3732/apps.1700085).
- Tseng, K. C., Chiang-Hsieh, Y. F., Pai, H., Chow, C. N., Lee, S. C., Zheng, H. Q., Kuo, P. L., Li, G. Z., Hung, Y. C., Lin, N. S., and Chang, W. C. 2018. MicroRPM: A microRNA prediction model based only on plant small RNA sequencing data. *Bioinformatics* 34(7): 1108–1115 (doi: 10.1093/bioinformatics/btx725).
- Wang, H., Park, S. Y., Lee, A. R., Jang, S. G., Im, D. E., Jun, T. H., Lee, J., Chung, J. W., Ham, T. H., and Kwon, S. W. 2018. Next-generation sequencing yields the complete chloroplast genome of *C. goeringii* acc. smg222 and phylogenetic analysis. *Mitochondrial DNA Part B: Resources* 3(1): 215–216 (doi: 10.1080/23802359.2018.1437812) [*Cymbidium*].
- Wang, T., Song, Z., Wei, L., and Li, L. 2018. Molecular characterization and expression analysis of WRKY family genes in *Dendrobium officinale*. *Genes and Genomics* 40(3): 265–279 (doi: 10.1007/s13258-017-0602-z).
- Wang, Y., Liu, L., Song, S., Li, Y., Shen, L., and Yu, H. 2017. DOFT and DOFTIP1 affect reproductive development in the orchid *Dendrobium Chao Praya Smile*. *Journal of Experimental Botany* 68(21–22): 5759–5772 (doi: 10.1093/jxb/erx400).

Yun, S. A., Son, H. D., Im, H. T., and Kim, S. C. 2018. Two complete chloroplast genomes of an endangered orchid species, *Pelatantheria scolopendrifolia* (Orchidaceae), in Korea. *Mitochondrial DNA Part B: Resources* 3(1): 225–226 (doi: 10.1080/23802359.2018.1437815).

Zeng, X., Li, Y., Ling, H., Chen, J., and Guo, S. 2018. Revealing proteins associated with symbiotic germination of *Gastrodia elata* by proteomic analysis. *Botanical Studies* 59(1): art. 8 (doi: 10.1186/s40529-018-0224-z).

Zeng, X., Ling, H., Yang, J., Li, Y., and Guo, S. 2018. LEA proteins from *Gastrodia elata* enhance tolerance to low temperature stress in *Escherichia coli*. *Gene* 646: 136–142 (doi: 10.1016/j.gene.2018.01.002).

Zhang, Y. J., Ma, C., Feng, Y., Cheng, X., and Song, J. 2018. The complete chloroplast genome sequence of an endangered orchid species *Dendrobium bellatulum* (Orchidaceae). *Mitochondrial DNA Part B: Resources* 3(1): 233–234 (doi: 10.1080/23802359.2018.1437811).

Zhang, Y. J., Song, J., and Cheng, X. 2018. The complete chloroplast genome sequence of an endangered traditional Chinese medicine plant *Dendrobium candidum* (Orchidaceae). *Conservation Genetics Resources* 10(1): 9–11 (doi: 10.1007/s12686-017-0750-0).

Zhou, S., Jiang, L., Guan, S., Gao, Y., Gao, Q., Wang, G., and Duan, K. 2018. Expression profiles of five FT-like genes and functional analysis of PhFT-1 in a *Phalaenopsis* hybrid. *Electronic Journal of Biotechnology* 31: 75–83 (doi: 10.1016/j.ejbt.2017.11.003).

Zhou, Y., Chen, L., Xu, Y., Wang, Y., Wang, S., and Ge, X. 2018. The CfAOS and CfAOC genes related to flower fragrance biosynthesis in *Cymbidium faberi* could confer drought tolerance to transgenic tomatoes. *International Journal of Agriculture and Biology* 20(4): 883–892 (doi: 10.17957/IJAB/15.0582).

### **Mycorrhiza and endophytes**

Cevallos, S., Herrera, P., Sánchez-Rodríguez, A., Declerck, S., and Suárez, J. P. 2018. Untangling factors that drive community composition of root associated fungal endophytes of Neotropical epiphytic orchids. *Fungal Ecology* 34: 67–75 (doi: 10.1016/j.funeco.2018.05.002).

da Silva, M., Cruz, E. S., Veloso, T. G. R., Miranda, L., Pereira, O. L., Bocayuva, M. F., and Kasuya, M. C. M. 2018. *Colletorichum serranegrense* sp. nov., a new endophytic species from the roots of the endangered Brazilian epiphytic orchid *Cattleya jongheana*. *Phytotaxa* 351(2): 163–170 (doi: 10.11646/phytotaxa.351.2.4).

- Egidi, E., May, T. W., and Franks, A. E. 2018. Seeking the needle in the haystack: Undetectability of mycorrhizal fungi outside of the plant rhizosphere associated with an endangered Australian orchid. *Fungal Ecology* 33: 13–23 (doi: 10.1016/j.funeco.2018.01.002) [*Diuris fragrantissima*].
- Fay, M. F., Feustel, M., Newlands, C., and Gebauer, G. 2018. Inferring the mycorrhizal status of introduced plants of *Cypripedium calceolus* (Orchidaceae) in northern England using stable isotope analysis. *Botanical Journal of the Linnean Society* 186(4): 587–590 (doi: 10.1093/botlinnean/box104).
- Gontijo, J. B., Andrade, G. V. S., Baldotto, M. A., and Baldotto, L. E. B. 2018. Bioprospecting and selection of growth-promoting bacteria for *Cymbidium* sp. Orchids. *Scientia Agricola* 75(5): 368–374 (doi: 10.1590/1678-992x-2017-0117).
- Jasinge, N. U., Huynh, T., and Lawrie, A. C. 2018. Changes in orchid populations and endophytic fungi with rainfall and prescribed burning in *Pterostylis revoluta* in Victoria, Australia. *Annals of Botany* 121(2): 321–334 (doi: 10.1093/aob/mcx164).
- Kaur, J., Poff, K. E., and Sharma, J. 2018. A rare temperate terrestrial orchid selects similar *Tulasnella* taxa in ex situ and in situ environments. *Plant Ecology* 219(1): 45–55 (doi: 10.1007/s11258-017-0776-0) [*Platanthera chapmanii*].
- Lee, B. H., Kwon, W. J., Kim, J. Y., Park, J. S., and Eom, A. H. 2017. Differences among endophytic fungal communities Isolated from the roots of *Cephalanthera longibracteata* collected from different sites in Korea. *Mycobiology* 45(4): 312–317 (doi: 10.5941/MYCO.2017.45.4.312).
- Mújica, E. B., Mably, J. J., Skarha, S. M., Corey, L. L., Richardson, L. W., Danaher, M. W., González, E. H., and Zettler, L. W. 2018. A comparison of ghost orchid (*Dendrophylax lindenii*) habitats in Florida and Cuba, with particular reference to seedling recruitment and mycorrhizal fungi. *Botanical Journal of the Linnean Society* 186(4): 572–586 (doi: 10.1093/botlinnean/box106).
- Park, M. S., Eimes, J. A., Oh, S. H., Suh, H. J., Oh, S. Y., Lee, S., Park, K. H., Kwon, H. J., Kim, S. Y., and Lim, Y. W. 2018. Diversity of fungi associated with roots of *Calanthe* orchid species in Korea. *Journal of Microbiology* 56(1): 49–55 (doi: 10.1007/s12275-018-7319-9).
- Salazar-Cerezo, S., Martinez-Montiel, N., Cruz-Lopez, M. C., and Martinez-Contreras, R. D. 2018. Fungal diversity and community composition of culturable fungi in *Stanhopea trigrina* cast gibberellin producers. *Frontiers in Microbiology* 9(APR): art. 612 (doi: 10.3389/fmicb.2018.00612).
- Soelistijono, R., Daryanti, and Handayani, M. T. 2018. Isolation of mycorrhizal *Rhizoctonia* as resistance inducer of *Dendrobium macrophyllum* to drought. *IOP Conference Series: Earth and Environmental Science* 142: art. 012013 (doi: 10.1088/1755-1315/142/1/012013).

Voronina, E. Y., Malysheva, E. F., Malysheva, V. F., Dmitriev, G. V., Tiunov, A. V., and Kovalenko, A. E. 2018. A mixotrophy is in question: New data on fungal community associated with photosynthetic terrestrial orchid *Goodyera repens*. *Botanica Pacifica* 7(1): 51–61 (doi: 10.17581/bp.2018.07106).

## Pathology

Contaldo, N., Paltrinieri, S., Bellardi, M. G., Lesi, F., Satta, E., and Bertaccinia, A. (2018). Rapid screening for phytoplasma presence in flower crops using tuf gene barcode. *Acta Horticulturae* 1193: 63–67 (doi: 10.17660/ActaHortic.2018.1193.9).

Khairum, A., Poolsawat, O., Pornbungkerd, P., Tharapreuksapong, A., Wongkaew, S., and Tantasawat, P. A. 2018. Effects of culture media on *Phytophthora palmivora* growth,  $\alpha$ -elicitin production and toxicity to *Dendrobium*. *Notulae Botanicae Horti Agrobotanici Cluj-Napoca* 46(2): 630–638 (doi: 10.15835/nbha46211076).

Morales-Báez, M., Salinas-Castro, A., Bello, D. E., Cadena, M. G. L., Fernández, A. R., and Trigos, A. 2016. *Stethobaroides nudiventris* (Coleoptera: Curculionidae), the curculionid cause of petal wilting on the *Catasetum integerrimum* orchid. *Annals of the Entomological Society of America* 109(6): 845–849 (doi: 10.1093/aesa/saw057).

Petchthai, U., Xie, Z., and Wong, S. M. 2018. Transgenic *Nicotiana benthamiana* resistance to synergistic infection of two orchid viruses CymMV and ORSV. *Acta Horticulturae* 1193: 69–76 (doi: 10.17660/ActaHortic.2018.1193.10).

Pinkesorn, J., Milne, J. R., and Kitthawee, S. 2017. Pattern and shape effects of orchid flower traps on attractiveness of *Thrips palmi* (Thysanoptera: Thripidae) in an orchid farm. *Agriculture and Natural Resources* 51(5): 410–414 (doi: 10.1016/j.anres.2017.11.006).

Sowanpreecha, R., Kanchanabanca, C., Sangvanich, P., and Rerngsamran, P. 2018. *Bacillus subtilis* N3 as a biocontrol agent for *Curvularia lunata* and its antifungal protein properties. *International Journal of Agriculture and Biology* 20(3): 531–538 (doi: 10.17957/IJAB/15.0511).

Suwannarach, N., Kumla, J., and Lumyong, S. 2018. Leaf spot on *Cattleya* orchid caused by *Neoscytalidium orchidacearum* in Thailand. *Canadian Journal of Plant Pathology* 40(1): 109–114 (doi: 10.1080/07060661.2017.1414882).

Zheng, G. H., Peng, D. W., Tong, Q. X., Zheng, Z. Z., and Ming, Y. L. 2017. Occurrence of turnip mosaic virus in *Phalaenopsis* sp. in China. *Journal of Plant Pathology* 99(3): 703–706 (doi: 10.4454/jpp.v99i3.3985).

## Physiology/Phytochemistry

Bertoncelli, D. J., Alves, G. A. C., Furlan, F. F., Freiria, G. H., Bazzo, J. H. B., and de Faria, R. T. 2018. Effect of glyphosate on in vitro culture of *Cattleya nobilior* Rchb. *F. Revista Ceres* 65(2): 165–173 (doi: 10.1590/0034-737X201865020008).

Kongklom, N., Chuensangjun, C., Chisti, Y., and Sirisansaneeyakul, S. 2018. Improved keeping quality of *Dendrobium* “Bom” orchids using nutrients entrapped in a biodegradable hydrogel. *Scientia Horticulturae* 234: 184–192 (doi: 10.1016/j.scienta.2018.02.031).

Lee, H. B., Lim, S. H., Lim, N. H., An, S. K., and Kim, K. S. 2018. Growth and CO<sub>2</sub> exchange in young *Phalaenopsis* orchids grown under different levels of humidity during the vegetative period. *Horticulture Environment and Biotechnology* 59(1): 37–43 (doi: 10.1007/s13580-018-0005-3).

Li, Y. Y., Chen, X. M., Zhang, Y., Cho, Y. H., Wang, A. R., Yeung, E. C., Zeng, X., Guo, S. X., and Lee, Y. I. 2018. Immunolocalization and changes of hydroxyproline-rich glycoproteins during symbiotic germination of *Dendrobium officinale*. *Frontiers in Plant Science* 9: art. 552 (doi: 10.3389/fpls.2018.00552).

Lindqvist, D. N., Pedersen, H., and Rasmussen, L. H. 2018. A novel technique for determination of the fructose, glucose and sucrose distribution in nectar from orchids by HPLC-ELSD. *Journal of Chromatography B: Analytical Technologies in the Biomedical and Life Sciences* 1081–1082: 126–130 (doi: 10.1016/j.jchromb.2018.02.019).

Poobathy, R., Zakaria, R., Murugaiyah, V., and Subramaniam, S. 2018. Autofluorescence study and selected cyanidin quantification in the Jewel orchids *Anoectochilus* sp. and *Ludisia discolor*. *PLoS ONE* 13(4): art. e0195642 (doi: 10.1371/journal.pone.0195642).

Ray, H. A., Stuhl, C. J., and Gillett-Kaufman, J. L. 2018. Floral fragrance analysis of *Prosthechea cochleata* (Orchidaceae), an endangered native, epiphytic orchid, in Florida. *Plant Signaling and Behavior* 13(1): art. e1422461 (doi: 10.1080/15592324.2017.1422461).

Sánchez-Vidaña, M. R., Tejeda-Sartorius, O., Hernández-Anguiano, A. M., Trejo-Téllez, L. I., Soto-Hernández, R. M., and Gaytán-Acuña, E. A. 2018. Environment and flowering background in growth, induction and flower development in *Laelia anceps* subsp. *anceps* (Orchidaceae). *Agrociencia* 52(1): 35–54.

Song, L. Y., Huang, F., Wang, Y., Wu, Z. J., and Ouyang, M. A. 2018. New alkaloid and aromatic glucoside from the flowers of *Cymbidium* Lunagrad Eternal Green. *Molecules* 23(1): art. 99 (doi: 10.3390/molecules23010099).

Yun, D. L., Kim, H. J., and Kim, Y. J. 2018. CO<sub>2</sub> enrichment increased leaf initiation and photosynthesis in *Doritaenopsis* Queen Beer ‘Mantefon’ orchids. *Horticulture Environment and Biotechnology* 59(2): 159–165 (doi: 10.1007/s13580-018-0025-z).

Zahara, M., Datta, A., Boonkorkaew, P., and Mishra, A. 2018. Effect of plant growth regulators on the growth and direct shoot formation from leaf explants of the hybrid *Phalaenopsis* 'Pink'. *Acta Agriculturae Slovenica* 111(1): 5–16 (doi: 10.14720/aas.2018.111.1.01).

### **Pollination, population genetics, and seed dispersal**

Bogarín, D., Fernández, M., Borkent, A., Heemskerk, A., Pupulin, F., Ramírez, S., Fmls, E. S., and Gravendeel, B. 2018. Pollination of *Trichosalpinx* (Orchidaceae: Pleurothallidinae) by biting midges (Diptera: Ceratopogonidae). *Botanical Journal of the Linnean Society* 186(4): 510–543 (doi: 10.1093/botlinnean/box087).

Chapurlat, E., Anderson, J., Ågren, J., Friberg, M., and Sletvold, N. 2018. Diel pattern of floral scent emission matches the relative importance of diurnal and nocturnal pollinators in populations of *Gymnadenia conopsea*. *Annals of Botany* 121(4): 711–721 (doi: 10.1093/aob/mcx203).

Chattopadhyay, P., Banerjee, G., and Banerjee, N. 2017. Distinguishing orchid species by DNA barcoding: Increasing the resolution of population studies in plant biology. *OMICS A Journal of Integrative Biology* 21(12): 711–720 (doi: 10.1089/omi.2017.0131).

Chung, M. Y., Le, H. T. Q., Son, S., Tian, H. Z., and Chung, M. G. 2018. Genetic diversity of the extremely rare *Habenaria dentata* and the rare *Habenaria linearifolia* (Orchidaceae) in South Korea: Implications for population history and conservation. *Plant Ecology and Evolution* 151(1): 48–60 (doi: 10.5091/plecevo.2018.1366).

Edens-Meier, R., Arduser, M., Camilo, G. R., and Bernhardt, P. 2018. Comparative pollination ecology between two populations and two varieties of *Cypripedium parviflorum* (Orchidaceae) in Missouri, United States of America—does size matter? *Botanical Journal of the Linnean Society* 186(4): 544–559 (doi: 10.1093/botlinnean/boy001).

Gargiulo, R., Ilves, A., Kaart, T., Fay, M. F., and Kull, T. 2018. High genetic diversity in a threatened clonal species, *Cypripedium calceolus* (Orchidaceae), enables long-term stability of the species in different biogeographical regions in Estonia. *Botanical Journal of the Linnean Society* 186(4): 560–571 (doi: 10.1093/botlinnean/box105).

Gomes, P. C. L., de Camargo Smidt, E., de Fraga, C. N., and Silva-Pereira, V. 2018. High genetic variability is preserved in relict populations of *Cattleya lobata* (Orchidaceae) in the Atlantic Rainforests inselbergs. *Revista Brasileira de Botanica* 41(1): 185–195 (doi: 10.1007/s40415-017-0422-z).

Hutchings, M. J., Robbirt, K. M., Roberts, D. L., and Davy, A. J. 2018. Vulnerability of a specialized pollination mechanism to climate change revealed by a 356-year analysis. *Botanical Journal of the Linnean Society* 186(4): 498–509 (doi: 10.1093/botlinnean/box086) [*Ophrys sphegodes*].

- Milet-Pinheiro, P., Silva, J. B. F., Navarro, D. M. A. F., Machado, I. C. S., and Gerlach, G. 2018. Notes on pollination ecology and floral scent chemistry of the rare neotropical orchid *Catasetum galeritum* Rchb.f. *Plant Species Biology* 33(2): 158–163 (doi: 10.1111/1442-1984.12202).
- Möller, H. 2017. Beobachtungen von Besuchern und Bestäubern auf *Neottia ovata* (L.) Bluff, and Fingerh. 1838. *Berichte aus den Arbeitskreisen Heimische Orchideen* 34(2): 146–161.
- Nagy, T., Nótári, K., Takács, A., Malkócs, T., Tökölyi, J., and Molnár, A. V. 2018. Precipitation and timing of flowering in ghost orchids (*Epipogium aphyllum* Sw.). *Acta Botanica Hungarica* 60(1–2): 223–230 (doi: 10.1556/034.60.2018.1-2.10).
- Paradiso, R. and De Pascale, S. 2014. Plant size at flower induction affects flowering of *Phalaenopsis* orchids. *Acta Horticulturae* 1037: 1139–1144 (doi: 10.17660/ActaHortic.2014.1037.152).
- Paulus, H. F. 2017. Zur Bestäubungsbiologie der Gattung *Ophrys* in Nordspanien: Freilandstudien an *Ophrys aveyronensis*, *O. subinsectifera*, *O. riojana*, *O. vasconica* and *O. forestieri*. *Journal Europäischer Orchideen* 49(3–4): 427–471.
- Paulus, H. F. and Hirth, M. 2017. Bestäubungsbiologie und Systematik des *Ophrys mammosa*-Komplexes im östlichen Mittelmeerraum und Neubeschreibungen von *Ophrys prespaensis* und *O. willingii* vom griechischen Festland. *Journal Europäischer Orchideen* 49(2): 221–314.
- Phillips, R. D. and Peakall, R. 2018. Breaking the rules: Discovery of sexual deception in *Caladenia abbreviata* (Orchidaceae), a species with brightly coloured flowers and a non-insectiform labellum. *Australian Journal of Botany* 66(2): 95–100 (doi: 10.1071/BT17151).
- Tao, Z. B., Ren, Z. X., Bernhardt, P., Liang, H., Li, H. D., Zhao, Y. H., Wang, H., and Li, D. Z. 2018. Does reproductive isolation reflect the segregation of color forms in *Spiranthes sinensis* (Pers.) Ames complex (Orchidaceae) in the Chinese Himalayas? *Ecology and Evolution* 8(11): 5455–5469 (doi: 10.1002/ece3.4067).
- Tian, H. Z., Han, L. X., Zhang, J. L., Li, X. L., Kawahara, T., Yukawa, T., López-Pujol, J., Kumar, P., Chung, M. G., and Chung, M. Y. 2018. Genetic diversity in the endangered terrestrial orchid *Cypripedium japonicum* in East Asia: Insights into population history and implications for conservation. *Scientific Reports* 8(1): art. 6467 (doi: 10.1038/s41598-018-24912-z).
- Travers, S. E., Anderson, K., Vitt, P., and Harris, M. O. 2018. Breeding system and inbreeding depression in the rare orchid, *Platanthera praeclara*, in a fragmented grassland landscape. *Botany* 96(3): 151–159 (doi: 10.1139/cjb-2017-0104).
- van der Niet, T. 2018. Autonomous self-pollination in the South African orchid *Satyrium rupestre* Schltr. *South African Journal of Botany* 117: 215–221 (doi: 10.1016/j.sajb.2018.05.023).



Zhang, W. and Gao, J. 2018. High fruit sets in a rewardless orchid: A case study of obligate agamospermy in *Habenaria*. *Australian Journal of Botany* 66(2): 144–151 (doi: 10.1071/BT17182).

## Systematics and distribution

### AFRICA (excluding NORTH AFRICA, including the southern part of the ARABIAN PENINSULA)

Farminhão, J. N. M., Meerts, P., Descourvières, P., Droissart, V., Simo-Droissart, M., and Stévant, T. 2018. A revised concept of *Rhipidoglossum* (Angraecinae, Orchidaceae). *Phytotaxa* 349(3): 249–256 (doi: 10.11646/phytotaxa.349.3.5).

Fibeck, W. and Phiri, V. 2017. *Microcoelia globulosa* (Hochst.) L.Jonss.—Porträt einer afrikanischen Wurzelorchidee. *Die Orchidee* 68(5): 342–347.

Fibeck, W. and Phiri, V. 2017. Ökologische Betrachtungen zur simbabwischen Orchideenflora. Teil 3: Das Trockenbiotop Granit. *Die Orchidee* 68(6): 440–453.

Fibeck, W. and Phiri, V. 2018. Ökologische Betrachtungen zur simbabwischen Orchideenflora, Teil 4: Niederschlag als ökologische Nische. *Die Orchidee* 69(2): 118–125.

Hermans, J. 2018. Zehn neue Orchideen von Madagaskar. *Die Orchidee* 69(1): 68–70.

Hervouet, J.-M. 2018. *A la recherche des Orchidées de Madagascar. Sur les traces d'Henri Perrier de la Bathi*. Biotope éditions, Mèze.

Huang, W.-C., Wang, Z.-W., Wei, N., Zhu, J., Lan, S.-R., Hu, G.-W., and Wang, Q.-F. 2018. *Gastrodia elatoides* (Orchidaceae: Epidendroideae: Gastrodieae), a new holomycoheterotrophic orchid from Madagascar. *Phytotaxa* 249(2): 167–172 (doi: 10.11646/phytotaxa.349.2.7).

Simo-Droissart, M., Plunkett, G. M., Droissart, V., Edwards, M. B., Farminhão, J. N. M., Ječmenica, V., D'Hajjère, T., Lowry, P. P., Sonké, B., Micheneau, C., Carlswald, B. S., Azandi, L., Verlynde, S., Hardy, O. J., Martos, F., Bytebier, B., Fischer, E., and Stévant, T. 2018. New phylogenetic insights toward developing a natural generic classification of African angraecoid orchids (Vandaeae, Orchidaceae). *Molecular Phylogenetics and Evolution* 126: 241–249 (doi: 10.1016/j.ympev.2018.04.021).

Simo-Droissart, M., Sonké, B., Droissart, V., and Stévant, T. 2018. *Afropectinariella* (Vandaeae, Orchidaceae), a new genus of the *Angraecum* alliance. *PhytoKeys* 96: 79–86 (doi: 10.3897/phytokeys.96.23933).

Simo-Droissart, M., Stévant, T., Sonké, B., Mayogo, S., Kamdem, N., and Droissart, V. 2018. New taxonomic and conservation status of *Ossiculum* (Vandaeae, Orchidaceae), a highly threatened and narrow-endemic angraecoid orchid from Central Africa. *PhytoKeys* 98: 85–97 (doi: 10.3897/phytokeys.98.23511).

Szlachetko, D. L., Grochocka, E., Olędrzyńska, N., and Mytnik, J. 2018. Taxonomical notes on Angraecoid orchids from Africa, with a new genus and new combinations. *Richardiana, nouv. sér.* 2: 87–96.

## AMERICA

Amezcu-Trigos, M., Pérez-Farrera, M. A., Archila, F., Cházaro-Basáñez, M., and Sosa, V. 2018. A new species of *Telipogon* (Orchidaceae) from Mexico and its phylogenetic position among Mesoamerican species. *Systematic Botany* 43(1): 9–16 (doi: 0.1600/036364418X697067).

Archila Morales, F., Szlachetko, D. L., Chiron, G., and Nowak, S. 2017. *Malaxis cobanensis* sp. nov. (Orchidaceae, Malaxidinae), a new tiny epiphytic orchid from Guatemala. *Wulfenia* 24: 121–124.

Archila Morales, F., Szlachetko, D. L., and Rykaczewski, M. 2017. A new species of *Lepanthes* (Orchidaceae, Pleurothallidinae) from Guatemala. *Wulfenia* 24: 92–96.

Baquero R., L. E. 2018. A new species of *Lepanthes* (Orchidaceae: Pleurothallidinae) from northwestern Ecuador. *Phytotaxa* 343(1): 075–081 (doi: 10.11646/phytotaxa.343.1.7).

Bastos, C. A., Meneguzzo, T. E. C., and Berg, C. V. D. 2018. A taxonomic revision of the Brazilian species of *Encyclia* (Orchidaceae: Epidendroideae: Epidendreae). *Phytotaxa* 342(1): 1–84 (doi: 10.11646/phytotaxa.342.1).

Bogarín, D., Fernández, M., and Serracín, Z. 2018. *Lepanthes aures-ursinae* and *L. vertebrata* spp. nov. (Orchidaceae: Pleurothallidinae) from Panama. *Nordic Journal of Botany* 36(1–2): art. njb-01292 (doi: 10.1111/njb.01292).

Bogarín, D., Karremans, A. P., and Fernández, M. 2018. Genus-level taxonomical changes in the *Lepanthes* affinity (Orchidaceae, Pleurothallidinae). *Phytotaxa* 340(2): 128–136 (doi: 10.11646/phytotaxa.340.2.2).

Bolson, M., Brito, A. L. V. T. d., and Smidt, E. C. 2018. A neglected name and new synonym in *Barbosella* (Pleurothallidinae, Orchidaceae). *Phytotaxa* 340(3): 246–254 (doi: 10.11646/phytotaxa.340.3.4).

Dalström, S. and Deburghgraeve, G. 2018. Eine auffallende Naturhybride von *Odontoglossum* (Orchidaceae; Oncidiinae) aus Venezuela bekommt bei der Namensgebung eine zweite Chance | An attractive natural hybrid *Odontoglossum* (Orchidaceae; Oncidiinae) from Venezuela gets a second chance to be named. *OrchideenJournal* 25(1): 28–35.

- Dalström, S. and Higgins, W. E. 2018. Die Wiederherstellung einer monophyletischen Gattung *Odontoglossum*. *Die Orchidee* 69(2): 94–101.
- De Barros, F., Hall, C. F., Neto, V. B. D. P., and Batista, J. A. N. 2018. Checklist of the Orchidaceae from the state of Mato Grosso do Sul, Brazil. *Iheringia - Serie Botanica* 73: 287–296 (doi: 10.21826/2446-8231201873s287).
- Díaz-Morales, M. and Pupulin, F. 2018. The New Refugium Botanicum—*Phragmipedium schlimii*. *Orchids, the Bulletin of the American Orchid Society* 86(12): 894–896.
- Ferreira, A. W. C., de Oliveira, M. S., Silva, E. O., Campos, D. S., Pansarin, E. R., and Guarçoni, E. A. E. 2017. *Vanilla bahiana* Hoehne and *Vanilla pompona* Schiede (Orchidaceae, Vanilloideae): Two new records from Maranhão state, Brazil. *Check List* 13(6): 1131–1137 (doi: 10.15560/13.6.1131).
- Funez, L. A. and Pansarin, E. R. 2018. *Cleisthes pallida* (Orchidaceae Vanilloideae): a new species from South Brazil. *Phytotaxa* 349(1): 061–066 (doi: 10.11646/phytotaxa.349.1.7).
- Gutiérrez Morales, N., Harding, P., Dalström, S., and Moreno, J. S. 2018. A new species of *Cyrtochilum* (Orchidaceae: Oncidiinae) from the Eastern Cordillera of Colombia. *Lankesteriana* 18(1): 63–68 (doi: 10.15517/lank.v18i1.33098).
- Hágsater, E. e. a. 2018. The genus *Epidendrum* Part 12—Species new & old in *Epidendrum*. *Icones Orchidacearum* 16(1).
- Karremans, A. P. and Jiménez, J. E. 2018. *Pleurothallis hawkingii* and *Pleurothallis vide-vallis* (Orchidaceae; Epidendroideae), two new species from Cordillera de Guanacaste in Costa Rica. *Phytotaxa* 349(2): 185–191 (doi: 10.11646/phytotaxa.349.2.10).
- Koch, A. K., Miranda, J. C., and Hall, C. F. 2018. Flora of the cangas of the Serra dos Carajás, Pará, Brazil: Orchidaceae. *Rodriguesia* 69(1): 165–188 (doi: 10.1590/2175-7860201869115).
- Kolanowska, M., Rykaczewski, M., Medina Trejo, R., and Szlachetko, D. L. 2018. *Brachionidium elzbietae* and *B. dorisiae* spp. nov. (Orchidaceae) from Colombia. *Nordic Journal of Botany* 36(1–2): art. njb-01546 (doi: 10.1111/njb.01546).
- Kolanowska, M., Szlachetko, D. L., and Skorowska, I. 2017. New species of *Brevilongium* (Orchidaceae) from Ecuador. *Wulfenia* 24: 193–198.
- Luer, C. A. 2017. Icones Stelidarum (Orchidaceae) Colombiae IV. *Harvard Papers in Botany* 22(2): 81–112 (doi: 10.3100/hpib.v22iss2.2017.n2).
- Matthews, L. M. 2018. A new species of *Pleurothallopsis* (Epidendreae, Epidendroideae, Orchidaceae). *Orchid Digest* 82(1): 16–18.

- Pace, M. C. and Cameron, K. M. 2017. The systematics of the *Spiranthes cernua* species complex (Orchidaceae): Untangling the Gordian Knot. *Systematic Botany* 42(4): 640–669 (doi: 10.1600/036364417X696537).
- Parizaca, A. D. 2018. *Acianthera rodolfo-vasquezii* and *A. ruizii*, spp. nov. (Orchidaceae: 3 Pleurothallidinae) from the montane cloud forest of the central Andes, Peru. *Brittonia* 70: art. 70 (doi: 10.1007/s12228-017-9508-y).
- Peinado-Arellanes, J. M. 2018. *Habenaria ocadiziana* (Habenariinae: Orchidaceae) a new and unusual species from western Mexico. *Phytotaxa* 334(3): 241–247 (doi: 10.11646/phytotaxa.334.3.5).
- Pessoa, E. M., Viruel, J., Alves, M., Bogarín, D., Whitten, W. M., and Chase, M. W. 2018. Evolutionary history and systematics of *Campylocentrum* (Orchidaceae: Vandaeae: Angraecinae): a phylogenetic and biogeographical approach. *Botanical Journal of the Linnean Society* 186(2): 158–178 (doi: 10.1093/botlinnean/box089).
- Petini-Benelli, A. and Chiron, G. 2018. Nouvelle espèce de *Catasetum* (Orchidaceae) du Mato Grosso (Brésil). *Richardiana, nouv. sér.* 2: 8–17.
- Pupulin, F. 2018. The New Refugium Botanicum—*Lycaste tricolor*. *Orchids, the Bulletin of the American Orchid Society* 87(5): 334–336.
- Romero-González, G. A., Carnevali, G., López, R. E., and Pérez, S. C. 2017. *Catasetum ×dunstervillei* (Orchidaceae: Catasetinae), a natural hybrid confirmed by artificial hybridization. *Harvard Papers in Botany* 22(2): 145–155 (doi: 10.3100/hpib.v22iss2.2017.n10).
- Salazar, G. A., Fernández-Díaz, A., Huerta-Alvizar, C. R., Jiménez-Machorro, R., Cabrera, L. I., and Jimeno-Sevilla, H. D. 2018. *Govenia polychroma*, a new species of Orchidaceae from Veracruz, Mexico. *Phytotaxa* 343(1): 082–088 (doi: 10.11646/phytotaxa.343.1.8).
- Salm, L. 2017. Eine dritte Art von *Restrepiella* (Pleurothallidinae, Epidendreae, Epidendroideae, Orchidaceae) | A third species of *Restrepiella* (Pleurothallidinae, Epidendreae, Epidendroideae, Orchidaceae). *OrchideenJournal* 24(4): 172–175.
- Sambin, A., Essers, D., and Chiron, G. R. 2018. Synopsis des espèces d'*Epidendrum* (Orchidaceae) de Guyane: 1-Groupe « *Arbuscula* ». *Richardiana, nouv. sér.* 2: 18–39.
- Sambin, A., Essers, D., and Chiron, G. R. 2018. Synopsis des espèces d'*Epidendrum* (Orchidaceae) de Guyane: 2-Groupe « *Difforme* ». *Richardiana, nouv. sér.* 2: 40–71.
- Santos, M. C., Brito, A. L. V. T. D., Amano, E., and Smidt, E. C. 2018. Nomenclatural notes in *Anathallis microphyta* (Pleurothallidinae, Orchidaceae). *Phytotaxa* 346(1): 104–112 (doi: 10.11646/phytotaxa.346.1.6).

Szlachetko, D. L., Baranow, P., and Dudek, M. 2018. Materials towards taxonomic revision of the genus *Palmorchis* (Orchidaceae). *Systematic Botany* 43(1): 130–152 (doi: 10.1600/036364418X697094).

Szlachetko, D. L. and Kolanowska, M. 2017. Synopsis of the genus *Ocampoa* (Orchidaceae). *Annals of the Missouri Botanical Garden* 102(4): 710–729 (doi: 10.3417/2016031).

Szlachetko, D. L. and Kolanowska, M. 2017. Two new species of the genus *Xanthoxerampellia* (Orchidaceae, Maxillariinae) from Antioquia, Colombia. *Wulfenia* 24: 199–204.

Szlachetko, D. L., Kolanowska, M., Muller, F., Vannini, J., Rojek, J., and Górnjak, M. 2017. First Guatemalan record of natural hybridisation between Neotropical species of the Lady's Slipper orchid (Orchidaceae, Cypripedioideae). *PeerJ* 2017(12): art. e4162 (doi: 10.7717/peerj.4162) [*Cypripedium*].

Szlachetko, D. L., Kolanowska, M., and Skorowska, I. 2017. Three new species of *Brevilongium* (Orchidaceae-Oncidiinae) from Colombia. *Phyton, Annales Rei Botanicae, Horn* 57: 107–111 (doi: 10.12905/0380.phyton57-2018-0107).

Toscano de Brito, A. L. V. 2017. *Zygostates luerorum*—A new species from Bolivia in the *Ornithocephalus* clade of subtribe Oncidiinae (Orchidaceae). *Harvard Papers in Botany* 22(2): 133–135 (doi: 10.3100/hpib.v22iss2.2017.n7).

Vierling, G. 2018. *Vaginaella*—Eine spektakuläre neue Gattung in der Subtribus Pleurothallidinae. *OrchideenJournal* 25(1): 17–21.

Wilson, M., Jiménez, M. M., Jost, L., Kay, A., Frank, G., and R., L. E. B. 2018. A new species of *Pleurothallis* (Orchidaceae, Pleurothallidinae) from northwestern Ecuador with affinities to both subgenera *Ancipitia* and *Scopula*. *Phytotaxa* 343(3): 249–258 (doi: 10.11646/phytotaxa.343.3.5).

Zambrano-Romero, B. J., Bogarín, D., and Solano, R. 2018. *Telipogon sonia-juaniorum* (Orchidaceae: Oncidiinae) a new species from Southwestern Ecuador. *Phytotaxa* 340(2): 167–174 (doi: 10.11646/phytotaxa.340.2.5).

Zambrano-Romero, B. J., Solano, R., and Wilson, M. 2018. Validation of the name *Pleurothallis marioi* (Zambrano et al. in *Phytotaxa* 308: 81). *Phytotaxa* 340(2): 191 (doi: 10.11646/phytotaxa.340.2.9).

## ASIA - PACIFIC (excluding the MIDDLE EAST, AUSTRALIA, and NEW ZEALAND)

Ariyaratne, M. and Yakandawala, D. 2018. Notes on fairy orchids (Magnoliopsida: Asparagales: Orchidaceae: *Oberonia*) of Sri Lanka: Revision in regional distribution and documentation on vegetative propagation. *Journal of Threatened Taxa* 10(5): 11683–11685 (doi: 10.11609/jot.3854.10.5.11683-11685).

Aung, Y. L. and Jin, X.-H. 2018. *Gastrodia kachinensis* (Orchidaceae), a new species from Myanmar. *PhytoKeys* 94: 23–29 (doi: 10.3897/phytokeys.94.21348).

Aung, Y. L., Mu, A. T., and Jin, X. 2018. *Odontochilus putaoensis* (Cranichideae, Orchidaceae), a new species from Myanmar. *PhytoKeys* 103: 19–26 (doi: 10.3897/phytokeys.103.25913).

Averyanov, L. V. 2017. *Schoenorchis phitamii* Aver., eine neue dekorative Miniaturorchidee aus Südvietnam. *Die Orchidee* 68(5): 401–407.

Averyanov, L. V. and Gruß, O. 2018. Die Gattung *Cleisostoma* in Vietnam. *Die Orchidee* 69(1): 34–40.

Averyanov, L. V. and Gruß, O. 2018. Vier im Jahr 2015 beschriebene Orchideen aus Vietnam. *Die Orchidee* 69(2): 128–132 [*Trichoglottis canhii* Aver., *Sarcoglyphis tichii* Aver., *Taeniophyllum phitamii* Aver., *Dendrobium thinhii* Aver.].

Averyanov, L. V., Gruß, O., Nguyen, H. T., and Chu, X. C. 2018. *Paphiopedilum concolor* (Lindl. ex Bateman) Pfitzer var. *trunkienii* Aver., O.Gruss, C.X.Canh et N.H.Tuan, eine neue Varietät einer gut bekannten Art aus dem Norden Vietnams. *Die Orchidee* 69(3): 192–196.

Averyanov, L. V., Gruß, O., Nguyen, P. T., and Nguyen, V. C. 2017. Die Vielfalt des *Paphiopedilum gratrixianum*-*Paphiopedilum daoense* Komplexes in Indochina. *Die Orchidee* 68(6): 489–494.

Averyanov, L. V., Nuraliev, M. S., Kuznetsov, A. N., and Kuznetsova, S. P. 2018. *Biermannia longicheila* (Orchidaceae, Aeridinae), a new species from southern Vietnam. *Phytotaxa* 343(2): 194–198 (doi: 10.11646/phytotaxa.343.2.11).

Averyanov, L. V., Ponert, J., Nguyen, P. T., Duy, N. V., Khang, N. S., and Nguyen, V. C. 2017. Ein Überblick über *Dendrobium* Sw. sect. *Formosae* (Benth. & Hook.f.) Hook.f. in Kambodscha, Laos und Vietnam. *OrchideenJournal* 24(4): 146–163.

Calaramo, M. A., Cootes, J., and Gaspar, K. 2018. Eine neue Aeridinae (Orchidaceae)-Art von Nordwest Luzon, Philippinen | A new Aeridinae (Orchidaceae)-species from Northwestern Luzon, Philippines. *OrchideenJournal* 25(1): 38–43 [*Robiquetia*].

- Calaramo, M. A., Naive, M. A., Cootes, J., Nuytemans, H., and Martyr, J. C. 2017. *Euphlebium elineae* (Orchidaceae:Epidendroideae)—Eine neue Orchideenart von den Philippinen | A new orchid species from the Philippines. *OrchideenJournal* 24(4): 164–168.
- Cavestro, W. and Grub, O. 2018. *Paphiopedilum rohmanii* Cavestro & O.Gruss—Eine neue Art der Gattung *Paphiopedilum* aus der Sektion *Barbata* (Kraenzlin) V.A.Albert & Borge Pett[sic] aus Nord-Sumatra, Indonesien. *OrchideenJournal* 25(1): 9–12.
- Cavestro, W. and Gruss, O. 2018. *Phalaenopsis kapuasensis*: A new species from West Kalimantan recently described. *Orchid Digest* 82(1): 20–25.
- Chaurasia, B., Gond, D., and Shukla, R. P. 2018. *Zeuxine longilabris* (Orchidaceae): a new record for the flora of Uttar Pradesh, India. *Richardiana, nouv. sér. 2*: 72–81.
- Choltco, T. C., Moloney, B., and Gee, G. Y. 2018. Eine neue *Habenaria* aus Nordthailand. *OrchideenJournal* 25(1): 34–36.
- Chowlu, K. and Jalal, J. S. 2018. Record of the endemic orchid *Biermannia jainiana* (Asparagales: Orchidaceae: Epidendroideae) from its type locality, India. *Journal of Threatened Taxa* 10(1): 11231–11233 (doi: 10.11609/jott.3686.10.1.11231-11233).
- Darmawati, I. A. P., Rai, I. N., Dwiyani, R., and Astarini, I. A. 2018. The diversity of wild *Dendrobium* (Orchidaceae) in Central Bali, Indonesia. *Biodiversitas* 19(3): 1110–1116 (doi: 10.13057/biodiv/d190345).
- Devi, T. S., Singh, P. D., Somkuwar, B. G., Thorat, S. S., and Kumar, S. 2018. *Oberonia pachyrhachis* (Orchidaceae): a new addition to the flora of Manipur, India. *Richardiana, nouv. sér. 2*: 1–7.
- Geiger, D. L. and Kocyan, A. 2018. Studies on *Oberonia* 3. Aberrant flowers and other floral modifications in the orchid genus *Oberonia*. *Nordic Journal of Botany* 36(1–2): art. njb-01699 (doi: 10.1111/njb.01699).
- Grub, O., Benk, G., and Cavestro, W. 2018. Eine neue Farbform von *Phalaenopsis kapuasensis*. *OrchideenJournal* 25(1): 7–9.
- Grub, O. and Perner, H. 2017. *Paphiopedilum curtisii* f. *sanderae*—Korrekt Name für eine wohlbekannte Farbform. *Die Orchidee* 68(6): 478–480.
- Grub, O. and Tönne, S. 2018. *Phalaenopsis bellina* forma *caerulea*, *Phalaenopsis bastianii* forma *helvola*, *Phalaenopsis tetrasis* forma *livida* – Drei neue Farbformen der Gattung *Phalaenopsis* Blume. *Die Orchidee* 69(1): 29–32.
- Hartati, S. 2017. Study of genetic diversity on six species of Indonesian *Coelogyne* spp. based on ISSR markers. *Pakistan Journal of Biological Sciences* 20(11): 577–583 (doi: 10.3923/pjbs.2017.577.583).

Huang, H.-X., Chen, L.-J., Liu, Z.-J., and Li, M.-H. 2018. *Liparis vivipara* (Orchidaceae: Malaxideae), a new species from China: evidence from morphological and molecular analyses. *Phytotaxa* 351(4): 289–295 (doi: 10.11646/phytotaxa.351.4.5).

Jalal, J. S. and Jayanthi, J. 2018. An updated checklist of the orchids of Maharashtra, India. *Lankesteriana* 18(1): 23–62 (doi: 10.15517/lank.v18i1.32699).

Janzen, P. 2018. *Dendrobium diodon* Rchb. f. 1876—eine kleine Art aus Südindien und Sri Lanka. *Die Orchidee* 69(2): 152–155.

Jiang, M.-T., Wu, S.-S., Liu, Z.-J., and Lan, S.-R. 2018. *Pleione jinhuana* (Arethuseae; Epidendroideae; Orchidaceae), a new species from China based on morphological and DNA evidence. *Phytotaxa* 345(1): 043–050 (doi: 10.11646/phytotaxa.345.1.5).

Jin, X. H. and Kyaw, M. 2017. *Gastrodia putaoensis* sp. nov. (Orchidaceae, Epidendroideae) from North Myanmar. *Nordic Journal of Botany* 35(6): 730–732 (doi: 10.1111/njb.01581, ISSN 1756-1051).

Jongsirikankha, P., Seelanan, T., and Suriyachaiwatthana, T. 2017. Orchids on Phu Kradueng's plateau. *Songklanakar Journal of Science and Technology* 39(4): 479–487.

Koopowitz, H., Iamwiriyaikul, P., and Laohapatcharin, S. 2017. *Paphiopedilum myanmaricum*—Eine neue Frauenschuhart (Cypripedioideae, Orchidaceae). *OrchideenJournal* 24(4): 136–138.

Koopowitz, H., Iamwiriyaikul, P., and Laohapatcharin, S. 2018. *Paphiopedilum myanmaricum*: a new species of slipper orchid (Cypripedioideae, Orchidaceae). *Orchid Digest* 82(1): 10–15.

Kumar, P., Gale, S. W., Pedersen, H. Æ., Phaxaysombath, T., Bouamanivong, S., and Fischer, G. A. 2018. Additions to the orchid flora of Laos and taxonomic notes on orchids of the Indo-Burma region. *Taiwania* 63(1): 61–83 (doi: 10.6165/tai.2018.63.61).

Kumar, S., Singh, P. D., Devi, H. S., Thongam, B., Somkuwar, B. G., and Thorat, S. S. 2018. *Cymbidium dayanum* and *Cymbidium sinense* (Orchidaceae): two new additions to the orchid wealth of Manipur, India. *Richardiana, nouv. sér.* 2: 82–87.

Lan, S., Chen, L., Chen, G., Wu, X., Rao, W., Zhang, P., and Liu, Z. 2018. *Cymbidium densiflorum* (Orchidaceae; Epidendroideae; Cymbidieae): a new orchid species from China based on morphological and molecular evidence. *Phytotaxa* 345(1): 051–058 (doi: 10.11646/phytotaxa.345.1.6).

Lan, S. and Liu, Z.-J. 2018. A new name in *Cymbidium* (Orchidaceae) for one mistakenly published as a later homonym. *Phytotaxa* 357(1): 071 (doi: 10.11646/phytotaxa.357.1.8).



- Li, J.-W., Huang, L.-Q., Li, G.-W., Pan, B., Yin, J.-T., and Jin, X.-H. 2018. Lectotype, epitype and amendment of *Gastrodia angusta* (Orchidaceae). *Phytotaxa* 356(4): 291–296 (doi: 10.11646/phytotaxa.356.4.5).
- Liu, J., Li, M., Lan, S., and Liang, Y. 2018. *Bulbophyllum yongtaiense* (Orchidaceae, Epidendroideae, Dendrobieae), a new species from Fujian, China: Evidence from morphological and molecular analyses. *Phytotaxa* 349(3): 281–286 (doi: 10.11646/phytotaxa.349.3.9).
- Liu, Q., Zhou, S.-S., Jin, X.-H., Pan, B., Maung, K. W., Zyaw, M., Li, R., Quan, R.-C., and Tan, Y.-H. 2018. *Dendrobium naungmungense* (Orchidaceae, Dendrobieae), a new species from Kachin State, Myanmar. *PhytoKeys* 94: 31–38 (doi: 10.3897/phytokeys.94.21337).
- Margonska, H. B. 2017. Notes on the Papuan genus *Saurolophorkis* (Malaxidinae, Orchidaceae) and description of a new species. *Wulfenia* 24: 282–288.
- Metusala, D. and O'Byrne, P. 2018. *Phalaenopsis kapuasensis*—Eine neue Orchideenart aus Kalimantan in Borneo. *OrchideenJournal* 25(1): 4–7.
- Naive, M. A. K. and Alejandro, G. J. D. 2018. Two new combinations of the Philippine Orchidaceae. *Phytotaxa* 356(1): 100 (doi: 10.11646/phytotaxa.356.1.9).
- O'Byrne, P. 2017. *Oberonia calcarea*, a new orchid species from Peninsular Malaysia. *Malayan Orchid Review* 51: 53–57.
- Oduyo, N., Daimary, R., Roy, D. K., Mao, A. A., and Deori, C. 2017. Additions à l'orchidoflore du Nagaland (Inde). *l'Orchidophile* 48(4): 349–359.
- Ong, P. T. 2017. Rarities discovered: Two attractive orchids from northern Peninsular Malaysia. *Malayan Orchid Review* 51: 61–65 [*Vanda miniata*, *Pinalia obesa*].
- Prommanut, P., Suddee, S., and Kidyoo, M. 2018. A narrow endemic new species of *Dendrobium* sect. *Stachyobium* from Thailand (Orchidaceae: Malaxideae). *Phytotaxa* 348(2): 090–098 (doi: 10.11646/phytotaxa.348.2.3).
- Puspitaningtyas, D. M. 2018. Orchid exploration in Mount Bintan Besar protected forest, Bintan Island, Riau Islands Province, Sumatra, Indonesia. *Biodiversitas* 19(3): 1081–1088 (doi: 10.13057/biodiv/d190341).
- Qiang, L. and Gao, J.-Y. 2018. *Gastrochilus dulongjiangensis* (Aeridinae, Vandaeae, Epidendroideae, Orchidaceae), a new species from Yunnan Province, China. *Phytotaxa* 340(3): 293–296 (doi: 10.11646/phytotaxa.340.3.11).
- Saravanan, T. S. and Kaliamoorthy, S. 2017. *Zeuxine grandis* and *Z. chowdheryi* (Orchidaceae): New records to Eastern Ghats, peninsular India. *Rheedea* 27(2): 92–95 (doi: 10.22244/rheedea.2017.27.2.16).

- Schuiteman, A., Cribb, P., and Want, T. 2018. *Coelogyne alboaurantia*: Orchidaceae. *Curtis's Botanical Magazine* 35(1): 2–8.
- Schuiteman, A., Cribb, P., and Want, T. 2018. *Coelogyne calcicola*: Orchidaceae. *Curtis's Botanical Magazine* 35(1): 9–16.
- Schuiteman, A., Cribb, P., and Want, T. 2018. *Coelogyne weixiensis*: Orchidaceae. *Curtis's Botanical Magazine* 35(1): 17–23.
- Suetsugu, K. and Fukunaga, H. 2018. A new variety of the mycoheterotrophic plant *Lecanorchis triloba* (Orchidaceae) from Okinawa Island, Ryukyu Islands, Japan. *Acta Phytotaxonomica et Geobotanica* 69(1): 63–67 (doi: 10.18942/apg.201716).
- Suetsugu, K., Fukunaga, H., and Sawa, S. 2018. Epitypification of *Gastrodia pubilabiata* (Gastrodieae, Epidendroideae, Orchidaceae). *Phytotaxa* 347(2): 193–196 (doi: 10.11646/phytotaxa.347.2.9).
- Suetsugu, K., Shimaoka, C., Fukunaga, H., and Sawa, S. 2018. The taxonomic identity of three varieties of *Lecanorchis nigricans* (Vanilleae, Vanilloideae, Orchidaceae) in Japan. *PhytoKeys* 92: 17–35 (doi: 10.3897/phytokeys.92.21657).
- Suetsugu, K., Souladeth, P., Tagane, S., and Yahara, T. 2018. First record of the mycoheterotrophic orchid *Lecanorchis taiwaniana* from Nam Ha National Protected Area, Northern Laos. *Acta Phytotaxonomica et Geobotanica* 69(2): 139–141 (doi: 10.18942/apg.201719).
- Suetsugu, K., Suleiman, M., and Tsukaya, H. 2018. *Nephelaphyllum maliauensis* (Orchidaceae; Collabiinae), a new species from the Maliau Basin, Sabah, Borneo, with a discussion of the taxonomic identities of *N. pulchrum*, *N. latilabre* and *N. flabellatum* *Phytotaxa* 336(1): 089–094 (doi: 10.11646/phytotaxa.336.1.7).
- Suetsugu, K., Yiing, L. C., Naiki, A., Tagane, S., Takeuchi, Y., Toyama, H., and Yahara, T. 2018. *Lecanorchis sarawakensis* (Orchidaceae, Vanilloideae), a new mycoheterotrophic species from Sarawak, Borneo. *Phytotaxa* 338(1): 135–139 (doi: 10.11646/phytotaxa.338.1.13).
- Surveswaran, S., Gowda, V., and Sun, M. 2018. Using an integrated approach to identify cryptic species, divergence patterns and hybrid species in Asian ladies' tresses orchids (*Spiranthes*, Orchidaceae). *Molecular Phylogenetics and Evolution* 124: 106–121 (doi: 10.1016/j.ympev.2018.02.025).
- Truong, B. V., Cootes, J., Truong, Q. T., Do, A. T., and Mang, V. L. 2017. Nachweis der *Bulbophyllum*-Sektionen *Macrocaulia* und *Polymeres* für das Hon Ba Naturreiservat, Vietnam und eine neue *Bulbophyllum*-Art | *Bulbophyllum* sections *Macrocaulia* and *Polymeres* from Hon Ba nature reserve, Vietnam; with a new locality record. *OrchideenJournal* 24(4): 168–172.

Truong, B. V., Cootes, J., Truong, Q. T., Do, A. T., and Nguyen, H. 2017. Überblick über die Gattung *Thrixspermum* im Hon Ba Naturresevat, Vietnam. *Die Orchidee* 68(6): 484–488.

Truong, V. B., Truong, T. Q., Nguyen, K. V., and Cootes, J. 2018. *Pelatantheria woonchengii*, a new addition for the orchid flora of Vietnam. *Lankesteriana* 18(1): 69–73 (doi: 10.15517/lank.v18i1.33104).

Vermeulen, J. J., Cootes, J., and Perry, M. 2017. *Bulbophyllum pleurocrepis* J.J. Vermeulen, J. Cootes et M. Perry (Dendrobiinae; Epidendroideae; Orchidaceae), eine neue Art ähnlich wie *Bulb. lobbii* Lindl. und *Bulb. facetum* Garay, Hamer et Siegerist | *Bulbophyllum pleurocrepis* J.J. Vermeulen, J. Cootes et M. Perry (Dendrobiinae; Epidendroideae; Orchidaceae), a new species similar to *Bulb. lobbii* Lindl. and *Bulb. facetum* Garay, Hamer et Siegerist. *Die Orchidee* 68(5): 394–399.

Xu, Q., Wu, X.-Y., Zhang, G.-Q., Chen, L.-J., Liu, Z.-J., and Lan, S.-R. 2018. *Dendrobium libingtaoi* (Orchidaceae; Epidendroideae; Malaxideae) a new species from China: evidence from morphology and DNA. *Phytotaxa* 334(1): 035–040 (doi: 10.11646/phytotaxa.334.1.5).

Ye, Q.-L., Li, Y.-F., Zhong, Z.-M., Wu, L.-F., Chen, L.-J., and Li, M.-H. 2018. *Platanthera guangdongensis* and *P. zijinensis* (Orchidaceae: Orchideae), two new species from China: Evidence from morphological and molecular analyses. *Phytotaxa* 343(3): 201–213 (doi: 10.11646/phytotaxa.343.3.1).

Zhang, W., Qin, J., Yang, R., Yang, Y., and Zhang, S.-B. 2018. Two new natural hybrids in the genus *Pleione* (Orchidaceae) from China. *Phytotaxa* 350(3): 247–258 (doi: 10.11646/phytotaxa.350.3.4).

## AUSTRALIA & NEW ZEALAND

Collier, P. A. 2017. *Prasophyllum abblittiorum* (Orchidaceae), a new distinctive species from north-western Tasmania. *Muelleria* 36: 3–7.

Dixon, K. W. and Christenhusz, M. J. M. 2018. Flowering in darkness: a new species of subterranean orchid *Rhizanthella* (Orchidaceae; Orchidoideae; Diurideae) from Western Australia. *Phytotaxa* 334(1): 075–079 (doi: 10.11646/phytotaxa.334.1.12).

Dixon, K. W. and Christenhusz, M. J. M. 2018. Endangered fairies: two new species of *Caladenia* (Orchidaceae; Orchidoideae; Diurideae), from the bauxite plateaux of southwestern Western Australia. *Phytotaxa* 334(1): 087–090 (doi: 10.11646/phytotaxa.334.1.12).

Frericks, J., Munkacsi, A., Ritchie, P., Luo, Y. B., and Lehnebach, C. A. 2018. Phylogenetic affinities and in vitro seed germination of the threatened New Zealand orchid *Spiranthes novae-zelandiae*. *New Zealand Journal of Botany* 56(1): 91–108 (doi: 10.1080/0028825X.2017.1418398).

Harrison, M. 2018. Some observations and comments on *Dendrobium fleckeri* Rupp and C.White. *Australian Orchid Review* 83(1): 2–14.

Jones, D. L. 2018. Characterisation of *Corunastylis nudiscapa*, *Corunastylis densa* (Orchidaceae: Prasophyllinae) and the description of a *Corunastylis leptochila*, a related new species. *Australian Orchid Review* 82(5): 48–56.

Jones, D. L. 2018. *Prasophyllum copelandii* (Orchidaceae: Prasophyllinae), a threatened new species of leek orchid from northern New South Wales. *Australian Orchid Review* 83(2): 48–52.

Jones, D. L. and Bates, R. J. 2018. A new subspecies of *Diuris behrii* Schldl. from the highland plains and associated hills east of the Flinders Ranges in South Australia. *Australian Orchid Review* 82(6): 29–33.

Jones, D. L. and Clements, M. A. 2018. *Sarcochilus loganii*, a new species from the Wide Bay District of south-eastern Queensland. *Australian Orchid Review* 82(6): 2–11.

Jones, D. L. and Clements, M. A. 2018. Newly recognised and reinstated species of *Corunastylis* Fitzg. (Orchidaceae: Prasophyllinae), with a proposed infrageneric classification of the genus. *Australian Orchid Review* 83(1): 52–58.

Jones, D. L., Clements, M. A., and Banks, D. P. 2018. *Sarcochilus setosus*, a new species from the North Kennedy District of north-eastern Queensland. *Australian Orchid Review* 83(2): 2–10.

Jones, D. L. and Copeland, L. M. 2018. *Bunochilus readii* (Orchidaceae: Pterostylidinae), a new rare species from northern New South Wales, Australia. *Australian Orchid Review* 82(6): 48–50.

Jones, D. L. and Copeland, L. M. 2018. *Acianthus cuneatus* (Orchidaceae), a new species from the Northern Tablelands of New South Wales, Australia. *Australian Orchid Review* 82(6): 51–53.

Jones, D. L. and Copeland, L. M. 2018. *Corunastylis cuspidata* (Orchidaceae), a new species from north-eastern New South Wales and south-eastern Queensland, Australia. *Australian Orchid Review* 82(6): 54–56.

Jones, D. L. and Copeland, L. M. 2018. Six new species of *Prasophyllum* R.Br. in the *Prasophyllum patens* R.Br. / *Prasophyllum odoratum* R.S.Rogers complex from northern New South Wales. *Australian Orchid Review* 83(1): 39–51.

Jones, D. L. and French, C. J. 2018. Five new species of *Plumatochilos* (Orchidaceae: Pterostylidinae) from western Australia. *Australian Orchid Review* 82(5): 27–41.

Jones, D. L. and French, C. J. 2018. Characterisation of *Urochilus sanguineus* (Orchidaceae: Pterostylidinae) and the description of a related new species. *Australian Orchid Review* 82(5): 42–47.

Jones, D. L. and French, C. J. 2018. New combinations in the Pterostylidinae. *Australian Orchid Review* 83(1): 63.

Nauheimer, L., Schley, R. J., Clements, M. A., Micheneau, C., and Nargar, K. 2018. Australasian orchid biogeography at continental scale: Molecular phylogenetic insights from the Sun Orchids (*Thelymitra*, Orchidaceae). *Molecular Phylogenetics and Evolution* 127: 304–319 (doi: 10.1016/j.ympev.2018.05.031).

Walsh, G. and Adams, P. B. 2017. *Dendrobium mortii* F.Muell. section *Rhizobium*. *The Orchadian* 19(2): 68–72.

### **EUROPE, NORTH AFRICA & THE MIDDLE EAST (excluding the southern part of the ARABIAN PENINSULA)**

Bateman, R. M. and Rudall, P. J. 2018. Clarified relationship between *Dactylorhiza viridis* and *Dactylorhiza iberica* renders obsolete the former genus *Coeloglossum* (Orchidaceae: Orchidinae). *Kew Bulletin* 73(1): art. 4 (doi: 10.1007/s12225-017-9728-z).

Bateman, R. M., Sramkó, G., and Paun, O. 2018. Integrating restriction site-associated DNA sequencing (RAD-seq) with morphological cladistic analysis clarifies evolutionary relationships among major species groups of bee orchids. *Annals of Botany* 121(1): 85–105 (doi: 10.1093/aob/mcx129) [*Ophrys*].

Bergfeld, D. 2018. *Neotinea ustulata* var. *aestivalis* im Vergleich zur Nominatsippe—eine Zusammenfassung des aktuellen Kenntnisstandes. *Journal Europäischer Orchideen* 50(1): 3–42.

Biagioli, M. 2018. Nomenclatural corrections of some recently-published new names of orchid hybrids. *GIROS Orchidee spontanee d'Europa | European Native Orchids* 61(1): 5–8.

Calevo, J., Braglia, L., De Benedetti, L., Marchioni, I., Cornara, L., Peccenini, S., and Giovannini, A. 2017. Different methodologies for the identification of *Serapias* orchids in the Regional Park of Portofino (Liguria). *GIROS Orchidee spontanee d'Europa | European Native Orchids* 60(1): 156–169.

D'Alonzo, F. and Perilli, M. 2017. Quattro nuovi ibridi naturali di *Ophrys* del Gargano (Foggia, Puglia). *GIROS Orchidee spontanee d'Europa | European Native Orchids* 60(1): 5–25.

D'Alonzo, F., Perilli, M., and Biagioli, M. 2017. Tre nuovi ibridi naturali di *Ophrys* nel Parco Nazionale del Gargano (Puglia settentrionale). *GIROS Orchidee spontanee d'Europa | European Native Orchids* 60(2): 308–321.

D'Alonzo, F., Perilli, M., and Biagioli, M. 2017. Tre nuovi ibridi naturali di *Ophrys* nella Murgia materana (Basilicata) e barese (Puglia). *GIROS Orchidee spontanee d'Europa | European Native Orchids* 60(2): 404–420.

D'Alonzo, F., Perilli, M., and Biagioli, M. 2018. Quattro nuovi ibridi naturali di *Ophrys* nel Parco Nazionale del Gargano (Foggia, Puglia settentrionale). *GIROS Orchidee spontanee d'Europa | European Native Orchids* 61(1): 60–78.

Delforge, P. 2017. Remarques sur le caractères distinctifs et la répartition d'*Ophrys quercophila* M. Nicole et al. 2017. *Naturalistes belges* 98 (Orchid. 30): 31–61.

Delforge, P. 2017. Que devient en 2017 un individu robuste d'*Epipactis helleborine* (L.) Crantz après une transplantation réussie, effectuées en 2011? *Naturalistes belges* 98 (Orchid. 30): 62–68.

Delforge, P. and Delforge-Onckelink, C. 2017. Contribution à la connaissance des Orchidées de la presqu'île de Methana et de l'île de Poros (Golfe Saronique, Attique, Grèce). *Naturalistes belges* 98 (Orchid. 30): 69–172.

El Mokni, R. 2018. *Serapias xdebelairii*, a new natural hybrid from Tunisia within a sympatric population of *S. stenopetala* and *S. parviflora*. *Journal Europäischer Orchideen* 50(1): 67–80.

Esposito, F., Vereecken, N. J., Gammella, M., Rinaldi, R., Laurent, P., and Tyteca, D. 2018. Characterization of sympatric *Platanthera bifolia* and *Platanthera chlorantha* (Orchidaceae) populations with intermediate plants. *PeerJ* 2018(1): art. e4256 (doi: 10.7717/peerj.4256).

Évrard, D. and Delforge, P. 2017. Une remarquable station d'Orchidées dans un parc industrielle du nord du Hainaut (Belgique). *Naturalistes belges* 98 (Orchid. 30): 22–30.

Felder, F., Haas, J. M., and Rohmer, M. 2017. Eine Reise zu den Orchideen im Nord-Iran. *Journal Europäischer Orchideen* 49(2): 391–404.

Foelsche, W., Wüest, R., Dolinar, B., Dakskobler, I., and Paušič, 2017. *Nigritella kossutensis* und *Nigritella ravnikii*, zwei neue, diploide Arten auf der slowenischen Seite der Karawanken. *Journal Europäischer Orchideen* 49(3–4): 473–550.

Gennaio, R. 2017. *Serapias apulica* subsp. *uxentina*, un nuovo taxon salentino (Puglia). *GIROS Orchidee spontanee d'Europa | European Native Orchids* 60(2): 347–360.

Gennaio, R. 2017. Prima descrizione dell'ibrido naturale *Ophrys xbarbarae* (*O. lutea* x *O. sicula*). *GIROS Orchidee spontanee d'Europa | European Native Orchids* 60(2): 421–426.

Gennaio, R., Gargiulo, M., Medagli, P., and Chetta, F.S. 2018. *Ophrys xcostae* (*O. fusca* subsp. *lupercalis* x *O. sicula*), nuovo ibrido naturale del Salento (Puglia). *GIROS Orchidee spontanee d'Europa | European Native Orchids* 61(1): 53–59.

Gennaio, R., Gargiulo, M., and Chetta, F.S. 2017. *Serapias xwatersii* nothosubsp. *watersii* (*S. politisii* x *S. vomeracea* subsp. *longipetala*), nuovo ibrido naturale del Salento (Puglia). *GIROS Orchidee spontanee d'Europa / European Native Orchids* 60(2): 452–460.

Gennaio, R., Gargiulo, M., Chetta, F. S., and Medagli, P. 2017. *Ophrys xpratesii* nothosubsp. *pratesii* (*O. fusca* subsp. *lupercalis* x *O. iricolor* subsp. *lojaconoi*), nuovo ibrido naturale del Salento (Puglia meridionale). *GIROS Orchidee spontanee d'Europa / European Native Orchids* 60(2): 432–437.

Gennaio, R., Gargiulo, M., Medagli, P., and Chetta, F.S. 2017. *Ophrys xmontalciniaie* nothosubsp. *crisforettiae* (*O. incubacea* subsp. *brutia* x *O. sphegodes* subsp. *classica*), nuovo ibrido naturale del Salento (Puglia). *GIROS Orchidee spontanee d'Europa / European Native Orchids* 60(2): 427–431.

Gerbaud, M., Gerbaud, O., Lamaurt, C., and Lamaurt, G. 2018. Quelques observations d'orchidées en Slovénie, notamment du genre *Gymnadenia*, début juillet 2017. *Bulletin de la Société Française d'Orchidophilie Rhône-Alpes* (37): 34–46.

Hedrn, M., Lorenz, R., and Ståhlberg, D. 2018. Evidence for bidirectional hybridization between *Gymnadenia* and *Nigritella*. *Journal Europäischer Orchideen* 50(1): 43–60.

Hedrn, M., Lorenz, R., Teppner, H., Dolinar, B., Giotta, C., Griebel, N., Hansson, S., Heidtke, U., Klein, E., Perazza, G., Ståhlberg, D., and Surina, B. 2018. Evolution and systematics of polyploid *Nigritella* (Orchidaceae). *Nordic Journal of Botany* 36(3): art. e01539 (doi: 10.1111/njb.01539).

Hennecke, M. 2017. Was ist eigentlich *Ophrys sphegodes*? Eine Orientierungshilfe. *Berichte aus den Arbeitskreisen Heimische Orchideen* 34(2): 162–179.

Hennecke, M. 2017. What is *Ophrys phryganae*? *GIROS Orchidee spontanee d'Europa / European Native Orchids* 60(2): 261–275.

Hennecke, M. 2018. *Ophrys sicula* Tineo and its hybrids: a synopsis. *GIROS Orchidee spontanee d'Europa / European Native Orchids* 61(1): 164–187.

Hennecke, M. 2018. What is *Ophrys subfusca*? A synopsis and its consequences. *GIROS Orchidee spontanee d'Europa / European Native Orchids* 61(1): 188–217.

Licheri, A. and Rodi, V. 2018. Un nuovo ibrido nella Sardegna sud-occidentale: *Ophrys xmarganaiensis* (*O. exaltata* subsp. *morisii* x *O. normanii*). *GIROS Orchidee spontanee d'Europa / European Native Orchids* 61(1): 136–142.

Lumare, F. and Medagli, P. 2017. Studio morfometrico e tassonomico su alcune popolazioni di *Serapias apulica* (*S. orientalis* subsp. *apulica*) in Salento (Puglia). *GIROS Orchidee spontanee d'Europa / European Native Orchids* 60(1): 26–54.

Lumare, F. and Medagli, P. 2017. Ritrovamento di un nuovo ibrido naturale nel Salento: *Ophrys xsilvanae* (*O. candida* x *O. tardans*). *GIROS Orchidee spontanee d'Europa / European Native Orchids* 60(2): 481–494,

Lumare, F. and Medagli, P. 2018. Su alcune caratteristiche morfologiche di importanza tassonomica in *Ophrys tardans*. *GIROS Orchidee spontanee d'Europa / European Native Orchids* 61(1): 11–19.

Lumare, F. and Medagli, P. 2018. Una nuova entità salentina, *Ophrys tenthredinifera* subsp. *neglecta* var. *expansa*, a confronto con *Ophrys tardans*. *GIROS Orchidee spontanee d'Europa / European Native Orchids* 61(1): 28–40.

Lumare, F. and Medagli, P. 2018. Nuovo rinvenimento e studio morfometrico del raro ibrido salentino *Ophrys xhydruntensis* (*O. apulica* x *O. tardans*). *GIROS Orchidee spontanee d'Europa / European Native Orchids* 61(1): 41–52.

Lumare, F. and Medagli, P. 2018. Studio morfometrico su *Anacamptis papilionacea* subsp. *aegaea* in Salento (Puglia) e suo confronto con *A. xgennarii* (*A. morio* x *A. papilionacea* subsp. *papilionacea*). *GIROS Orchidee spontanee d'Europa / European Native Orchids* 61(1): 103–113.

Lumare, F. and Medagli, P. 2018. *Serapias xcarluccioi*, nuovo ibrido salentino tra *S. ambigua* subsp. *sallentina* e *S. politisii*. *GIROS Orchidee spontanee d'Europa / European Native Orchids* 61(1): 121–135.

Lumare, F., Medagli, P., and Biagioli, M. 2017. Studio morfologico e morfometrico su una popolazione stabilizzata di origine ibridogena da *Serapias cordigera* e *S. vomeracea* subsp. *longipetala* presso Lecce (Salento, Puglia, con descrizione di una nuova microspecie (*Serapias guadinae*). *GIROS Orchidee spontanee d'Europa / European Native Orchids* 60(1): 193–213.

Lumare, F., Medagli, P., and Biagioli, M. 2017. *Serapias xfrigolae* nothosubsp. *nelsonii*, ibrido naturale nuovo tra *S. apulica* subsp. *brundisina* e *S. bergonii*. *GIROS Orchidee spontanee d'Europa / European Native Orchids* 60(2): 463–480.

Martin, R. and Ouni, R. 2017. *Ophrys scolopax* subsp. *jugurtha*, Roland Martin, and Ridha Ouni Une orchidée nouvelle en Tunisie. *Bulletin SFO Rhône-Alpes* 36: 60–66.

Pezzetta, A. 2018. Le orchidee della flora italiana: distribuzione geografica e origini. - *GIROS Orchidee spontanee d'Europa / European Native Orchids* 61(1): 218–248.

Pinaud, A., Pinaud, M., Lamaurt, C., and Lamaurt, G. 2018. *Ophrys xsanctae-crucis* (*Ophrys passionis* Sennen x *Ophrys speculum* Link), *nothosp. nat. nova*. *L'Orchidophile* (217): 181–184.

Richards, A. J. and Lewis, L. 2018. Neotypification and renaming of *Dactylorhiza majalis* subsp. *purpurella* var. *atrata*. *Journal Europäischer Orchideen* 50(1): 81–87.



Ring, J.-P., Querré, J.-C., and Wilcox, Y. 2017. *Ophrys suboccidentalis* Ring, Querré, and Wilcox sp. nova et *Ophrys suboccidentalis* subsp. *oloniae* subsp. nova: deux nouveaux taxons pour l'arc atlantique. *L'Orchidophile* 215: 379–396.

Ruiz De Gopegui y Valero, J. A., and García Cayón, L. 2017. Notes to the catalogue of orchid plants of the province of Palencia, Castilla y León (Spain). *Flora Montiberica* 69: 12–26.

Sakkir, S., Soorae, P., Ahmed, S., Khan, S. B., Saji, A., and Dhaheri, S. A. 2018. First record of *Epipactis veratrifolia* Boiss. & Hohen. (Orchidaceae, Epidendroideae, Neottieae, Limodorinae) from an arid wadi in Abu Dhabi, United Arab Emirates. *Check List* 14(1): 231–236 (doi: 10.15560/14.1.231).

Serafino, S., Gennaio, R., Chetta, F.S., Gargiulo, M., and Medagli, P. 2017. *Ophrys xsalapiensis* (*O. apulica* x *O. bombyliflora* x *O. candica*), un nuovo ibrido triplo del Salento. *GIROS Orchidee spontanee d'Europa | European Native Orchids* 60(2): 438–446.

Soca, R. 2017. *Ophrys molisana* in Abruzzo, Molise and Latium (Central Italy). *Journal Europäischer Orchideen* 49(2): 361–386.

Soca, R. 2017. Inventory of *Ophrys* (Orchidaceae) hybrids of Italy. *Journal Europäischer Orchideen* 49(3–4): 565–642.

Tyteca, D., Pessoa, J., Borges, L., Pereira, C., Marques, D. V., Areias, F., Rodrigues, I., Monteiro, J., and Pereira, A. 2017. The Orchid Flora of Portugal—Addendum N. 6—Recent contribution (2003–2016), conservation practices and priorities. *Journal Europäischer Orchideen* 49(2): 315–316. Waller, M. and Cole, S. 2017. *Serapias lingua* discovered in Essex. *BSBI News* 136: 11–12.

## GENERAL

de Abreu, N. L., Alves, R. J. V., Cardoso, S. R. S., Bertrand, Y. J. K., Sousa, F., Hall, C. F., Pfeil, B. E., and Antonelli, A. 2018. The use of chloroplast genome sequences to solve phylogenetic incongruences in *Polystachya* Hook (Orchidaceae Juss). *PeerJ* 2018(6): art. e4916 (doi: 10.7717/peerj.4916).

Geiger, D. L. 2018. Studies in *Oberonia*: An herbarium of cultivated orchids: why and how. *Orchid Digest* 82(2): 92–98.

Ng, Y. P., Schuiteman, A., Pedersen, H. Æ., Petersen, G., Watthana, S., Seberg, O., Pridgeon, A. M., Cribb, P. J., and Chase, M. W. 2018. Phylogenetics and systematics of *Eria* and related genera (Orchidaceae: Podochileae). *Botanical Journal of the Linnean Society* 186(2): 179–201 (doi: 10.1093/botlinnean/box088).

Salazar, G. A., Batista, J., Cabrera, L. I., Van den Berg, C., Whitten, M., Smidt, E. C., Buzatto, C. R., Singer, R. B., Gerlach, G., Jiménez-Machorro, R., Radins, J. A., Insaurralde, I. S., Guimarães, L. R. S., de Barros, F., Tobar, F., Linares, J. L., Mújica, E., Dressler, R. L., Blanco, M. A., Hágsater, E., and Chase, M. W. 2018. Phylogenetic systematics of subtribe *Spiranthinae* (Orchidaceae: Orchidoideae: Cranichideae) based on nuclear and plastid DNA sequences of a nearly complete generic sample. *Botanical Journal of the Linnean Society* 186(3): 273–303 (doi: 10.1093/botlinnean/box096).

Zhou, T. and Jin, X.-H. 2018. Molecular systematics and the evolution of mycoheterotrophy of tribe *Neottieae* (Orchidaceae, Epidendroideae). *PhytoKeys* 94: 39–49 (doi: 10.3897/phytokeys.94.21346).