



## **DR. LEE GAIK EE**

Lecturer (Bryology)

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### **Academic Qualification**

Ph.D (Universiti Kebangsaan Malaysia, UKM)

M.Sc (Universiti Kebangsaan Malaysia, UKM)

B.Appl.Sc. (Universiti Kebangsaan Malaysia, UKM)

### **Research Areas**

- 1) Plant taxonomy and systematics
- 2) Bryophytes (leafy liverworts)

### **Research Interest**

My research interests include the systematics of early land plants, especially liverworts (bryophytes), and its biodiversity in the Southeast Asia region. Liverworts are abundant and occur everywhere in tropical rainforests in Malaysia, however, they have been frequently overlooked or ignored by botanists. Many forests and mountains in Malaysia are largely unexplored from a hepaticological perspective. I started my research with a sense of urgency to document this interesting group of plants in Malaysia, however, as time goes by, it has turned into a great motivation and increasing passion in me to further research these tiny plants (many of them being only a few millimeters tall) including the integrative taxonomy based on morphological and molecular data, chemical study, character state evolution and historical biogeography. Liverworts particularly the epiphylls are very sensitive at natural fluctuations in humidity, climate change and forest fragmentation, and they are being highly recognized as important environmental indicators and possible indicators of global warming. This inspires me to further investigate their roles, functions, and life strategies in the rainforest biome. Detailed monographic revision with identification key, and well-illustrated, up-to-date and comprehensive field guides for identifying Malaysian liverworts species are also my focus. It is expected many new discoveries may be made in the future as Malaysia is blessed with one of the richest biodiversities in the world.

### **Current Research Projects**

Title : A taxonomic revision of Malaysian Lejeuneaceae (Marchantiophyta)

Position: Leader

Grant name & amount received: Alexander von Humboldt Foundation, Germany EUR 20,000

### **Special Interest Group (SIG)**

*Kenyir Geopark Research (Cluster Lake Ecosystem and Tropical Biodiversity)*

*Wetland Ecosystem Conservation (Cluster Marine Sciences & Oceanography)*

### **Professional Membership**

International Association of Bryologists, IAB

Alexander von Humboldt Fellow

Malayan Nature Society

The Society of Herbarium Curators, SHC

### **Awards**

Excellent Scholar Award, 2017

Alexander von Humboldt Foundation research fellowship award, 2014

Europe Research Stay award, 2014

### **Publications**

#### **2017**

**Lee G.E.**, L. Kolberg, J. Bechteler, A. Schäfer-Verwimp, M.A.M. Renner, A.R. Schmidt, J. Heinrichs. 2017. The leafy liverwort genus *Lejeunea* (Porellales, Jungermanniopsida) in Miocene Dominican amber. *Review of Palaeobotany and Palynology* 238: 144-150.

Bechteler J., A. Schäfer-Verwimp, **G.E. Lee**, K. Feldberg, O.A. Pérez-Escobar, T. Pócs, D.F. Peralta, M.A.M. Renner, J. Heinrichs. 2017. Geographical structure, narrow species ranges, and Cenozoic diversification in a pantropical clade of epiphyllous leafy liverworts. *Ecology and Evolution* 7: 638-653.

Kaasalainen U., J. Heinrichs, M.A.M. Renner, L. Hedenäs, A. Schäfer-Verwimp, **G.E. Lee**, M.S. Ignatov, J. Rikkinen, A.R. Schmidt. 2017. A Caribbean epiphyte community preserved in Miocene Dominican amber. *Earth and Environmental Science Transactions of the Royal Society of Edinburgh* (in press).

#### **2016**

**Lee G.E.**, J. Bechteler, T. Pócs, A. Schäfer-Verwimp & J. Heinrichs. 2016. Molecular and morphological evidence for an intercontinental range of the liverwort *Lejeunea pulchriflora* (Marchantiophyta: Lejeuneaceae). *Organisms Diversity and Evolution* 16: 13-21.

Scheben A., J. Bechteler, **G.E. Lee**, T. Pócs, A. Schäfer-Verwimp & J. Heinrichs. 2016. Multiple transoceanic dispersals and local speciation in the pantropical leafy liverwort *Ceratolejeunea* (Lejeuneaceae, Porellales). *Journal of Biogeography* 43: 1739-1749.

Heinrichs J., A. Scheben, J. Bechteler, **G.E. Lee**, A. Schäfer-Verwimp, L. Hedenäs, H. Singh, T. Pócs, P.C. Nascimbene, D.F. Peralta, M. Renner, A.R. Schmidt. 2016. Crown Group Lejeuneaceae and Pleurocarpous Mosses in Early Eocene (Ypresian) Indian Amber. PLoS ONE 11(5): e0156301. doi:10.1371/journal.pone.0156301.

Bechteler, J., **G.E. Lee**, A. Schäfer-Verwimp, M.A.M. Renner, D.F. Peralta, J. Heinrichs. 2016. Towards a monophyletic classification of Lejeuneaceae V: the systematic position of *Pictolejeunea*. *Phytotaxa* 280(3): 259-270.

Bechteler J., **G.E. Lee**, A. Schäfer-Verwimp, T. Pócs, D.F. Peralta, M.A.M. Renner, H. Schneider & J. Heinrichs. 2016. Towards a monophyletic classification of Lejeuneaceae IV: reinstatement of *Allorgella*, transfer of *Microlejeunea aphanella* to *Vitalianthus* and refinements of the subtribal classification. *Plant Systematics and Evolution* 302:187-201.

Pócs T. & **G.E. Lee**. 2016. Data to the Malaysian liverwort flora, II. *Cryptogamie Bryologie* 37(1): 39-52.

## 2015

**Lee G.E.**, J. Bechteler, A. Schäfer-Verwimp & J. Heinrichs. 2015. *Microlejeunea miocenica* sp. nov. (Porellales, Jungermanniopsida) in Dominican amber, the first fossil of a subcosmopolitan genus of leafy liverworts. *Review of Palaeobotany and Palynology* 222: 16–21.

**Lee G.E.**, A. Schäfer-Verwimp, A.R. Schmidt. & J. Heinrichs. 2015. Transfer of the Miocene *Lejeunea palaeomexicana* Grolle to *Ceratolejeunea*. *Cryptogamie Bryologie* 36(4): 335-341.

Heinrichs J., A. Scheben, **G.E. Lee**, J. Váňa, A. Schäfer-Verwimp, M. Krings & A.R. Schmidt. 2015. Molecular and morphological evidence challenges the records of the extant liverwort *Ptilidium pulcherrimum* in Eocene Baltic amber. PLoS ONE 10(11): e0140977. doi:10.1371/journal.pone.0140977.

Heinrichs J., E. Kettunen, **G.E. Lee**, G. Marzaro, T. Pócs, E. Ragazzi, M.A.M. Renner, J. Rikkinen, A. Sass-Gyarmati, A. Schäfer-Verwimp, A. Scheben, M. M. S. Kraemerh, M. Svojtka & A.R. Schmidt. 2015. Lejeuneaceae (Marchantiophyta) from a species-rich taphocoenosis in Miocene Mexican amber, with a review of liverworts fossilised in amber. *Review of Palaeobotany and Palynology* 221: 59-70.

## 2014

**Lee G.E.**, T. Pócs, S. Chantanaorrapint, A. Damanhuri & A. Latiff. 2014. An account of the genus *Lejeunea* (Marchantiophyta: Lejeuneaceae) in Thailand, including seven newly recorded species. *Cryptogamie Bryologie* 35(3): 247-259.

**Lee G.E.**, S.R. Gradstein, A. Damanhuri & A. Latiff. 2014. New and neglected morphological features in the taxonomy of Asian *Lejeunea* (Marchantiophyta). *Polish Botanical Journal* 59(1): 31-36.

## 2013

**Lee G.E.** 2013. A systematic revision of the genus *Lejeunea* Lib. (Marchantiophyta: Lejeuneaceae) in Malaysia. *Cryptogamie Bryologie* 34(4): 381-484.

**Lee G.E.** & S.R. Gradstein. 2013. Distribution and habitat of the Malaysian species of *Lejeunea* (Marchantiophyta: Lejeuneaceae), with description of *Lejeunea tamaspocsii* sp. nov. *Polish Botanical Journal* 58(1): 59-69.

**Lee G.E.**, S.R. Gradstein, L. Söderström & A. Latiff. 2013. Catalogue of the Lejeuneaceae of Malaysia. *Malayan Nature Journal* 65(2&3): 81-129.

## 2012

**Lee G.E.** A. Damanhuri & A. Latiff. 2012. Two species of *Lejeunea* from Bukit Panchor State Park, Pulau Pinang. In: Taman Negeri Bukit Panchor dan Pulau Jerejak, Pulau Pinang: Pengurusan Hutan, Persekitaran Fizikal dan Kepelbagaian Biologi. Eds. Abdul Rahim A.R., Hassan M.N.A., Dahalan M.P., Abdullah M. & Latiff A. Pg. 111-115. Forestry Department Peninsular Malaysia.

Damanhuri A., **Lee G.E.**, Maideen H. & Norhazrina N. 2012. *Flora lumut jati di Taman Negeri Bukit Panchor dan Pulau Jerejak*. In: Taman Negeri Bukit Panchor dan Pulau Jerejak, Pulau Pinang: Pengurusan Hutan, Persekitaran Fizikal dan Kepelbagaian Biologi. Eds. Abdul Rahim A.R., Hassan M.N.A., Dahalan M.P., Abdullah M. & Latiff A. Pg. 100-110. Forestry Department Peninsular Malaysia.

## 2011

**Lee G.E.**, T. Pócs, A. Damanhuri & A. Latiff. 2011. *Lejeunea gradsteinii* (Lejeuneaceae), a new liverwort species from Mt. Kinabalu, Sabah. *Acta Biol. Pl. Agriensis* 1: 29-36.

**Lee G.E.**, A. Damanhuri, A. Latiff & S. Robbert Gradstein. 2011. A taxonomic treatment of *Lejeunea discreta*, *L. eifrigii* and *L. sordida*, new to Peninsular Malaysia. *Acta Biol. Pl. Agriensis* 1: 37-51.

**Lee G.E.**, S. Robbert Gradstein, A. Damanhuri & A. Latiff. 2011. Towards a revision of the genus *Lejeunea* (Lejeuneaceae) in Malaysia. *Gard. Bull. Singapore* 63 (1 & 2): 163-173.

**Lee G.E.**, A. Damanhuri, N. Naddiyah, N. Norhazrina & H. Maideen. 2011. *Moss flora of Royal Belum State Park*. In. Siri Kepelebagaian Biologi Hutan Taman Negeri Diraja Belum, Perak, Pengurusan Hutan, Persekitaran Fizikal, Kepelebagaian Biologi dan Sosio-ekonomi. Eds. A.R.A. Rahim, H.L. Koh, M. Abdullah & A. Latiff. Pg. 86-100. Forestry Department Peninsular Malaysia.

**Lee G.E.**, A. Damanhuri, N. Norhazrina & H. Maideen. 2011. *Moss flora of Lata Bujang, Perlok, Krau Wildlife Reserve*. In. Gunung Benom, Krau Wildlife Reserve, Pahang, Geology, Biodiversity and Socio-Economic Environment, Proceedings of the Seminar on Gunung Benom Scientific Expedition 15-16 June 2010. Eds. A. Latiff, M.S. Leman & A. Norhayati. Academy of Sciences Malaysia.

Damanhuri, A., H. Maideen, A.A. Rahman, **G.E. Lee**, N. Norhazrina & S.Y. Tan. 2011. *Flora lumut jati (Bryophyta) di Cameron Highlands*. In. Siri Kepelebagaian Biologi Hutan Pergunungan Cameron Highlands, Pengurusan Hutan, Persekitaran Fizikal dan Kepelebagaian Biologi. Eds. A.R.A. Rahim, H.L. Koh, M.P. Kamaruzaman, M. Abdullah & A. Latiff. Pg. 95-120. Forestry Department Peninsular Malaysia.

Damanhuri, A., N. Norhazrina, S. Sukor, **G.E. Lee** & H. Maideen. 2011. *A preliminary checklist of mosses of Gunung Gagau, Terengganu*. In. Gunung Gagau, Terengganu, Transforming Natural Assets into an Ecotourism Product, Proceedings of the Seminar on Gunung Gagau Scientific Expedition 10-12 May 2009. Eds. A. Latiff, C.A. Ali & K.R. Mohamad. Pg. 93-111. Academy of Sciences Malaysia.

## 2010

Norhazrina, N., A. Damanhuri, N. Sadrina, **G.E. Lee** & H. Maideen. 2010. *Flora lumut jati (Bryophyta) di Hutan-hutan Simpan di Melaka*. In. Siri Kepelebagaian Biologi Hutan Simpan Malaka, Pengurusan Hutan, Persekitaran Fizikal, Kepelebagaian Biologi dan Sosio-ekonomi. Eds. A.R.A. Rahim, H.L. Koh, M. Abdullah, W.Y.W. Karim & A. Latiff. Pg. 100-120. Forestry Department Peninsular Malaysia.

Damanhuri, A., H. Maideen, R.F. Joshua, M. Ruzi, N. Norhazrina & **G.E. Lee**. 2010. *Moss flora of Angsi and Gunung Berembun Forest Reserves*. In. Siri Kepelebagaian Biologi Hutan Simpan Gunung Angsi Negeri Sembilan, Pengurusan Hutan, Persekitaran Fizikal dan Kepelebagaian Biologi. Eds. R. Ujang, A.R.A. Rahim, H.L. Koh, A. Roslan, M.S. Nizam, & A. Latiff. Pg. 94-114. Forestry Department Peninsular Malaysia.

## 2009

Damanhuri, A., F.A. Kanak, H. Maideen, A.A. Rahman, **G.E. Lee** & N. Norhazrina. 2009. *Flora lumut jati di Hutan Simpan Panti*. In. Siri Kepelebagaian Biologi Hutan Simpan Panti, Johor, Pengurusan Hutan, Persekitaran Fizikal dan Kepelebagaian Biologi. Eds. R. Ujong, H.L. Koh, A.R.A. Rahim, Y. Mahmood,

M.R. Rani, A. Norhayati & A. Latiff. Pg. 77-88. Forestry Department Peninsular Malaysia.

## 2008

**Lee G.E.** & A. Damanhuri. 2008. *Diversity of Mosses (Musci) in the Lowland Forest of Krau Wildlife Reserve, Pahang*. In Biodiversity Resources and Conservation Status in Peninsular Malaysia. Eds. S. Elagupillay, S.H. Yatim, A.K.A. Hashim, H. Hassan, L.B. Liat, R. Hashim, N. Abdullah, Shukor Md.Nor & R. Illias. Pg. 163-181. Department of Wildlife & National Parks.

## 2006

**Lee G.E.** & A. Damanhuri. 2006. *Kepelbagaian Lumut Jati (Musci) di Rezab Hidupan Liar Krau, Pahang, Semenanjung Malaysia*. In Prosiding Kolokium Siswazah ke-6. Eds. I. Baba, A. Kamis, I. Ismail, K. Mat-Salleh, M.A. Ghaffar, A.G. Rafek, M.R. Othman, A.M. Yatim, A.M. Razali, S. Zakaria, H.M.H. Ruslan & R.M. Nazar. Pg. 520-522. Fakulti Sains dan Teknologi & Pusat Pengajian Siswazah, Universiti Kebangsaan Malaysia.

Damanhuri A., Y.K. Thai, H. Maideen, N. Hamdan, N. Idris, J.M. Som, C.W. Mahusin & **G.E. Lee**. 2006. *A checklist of Mosses of Gunung Mandi Angin, with additional records for Peninsular Malaysia*. In Siri Kepelbagaian Biologi Hutan Gunung Mandi Angin, Terengganu, Pengurusan, Persekitaran Fizikal, Kepelbagaian Biologi dan Pelancongan Ekologi. Eds. A. Muda, N. Jaafar, M.R. Sabran, J.M. Som, M.S. Nizam & A. Latiff. Pg.155-172. Forestry Department Peninsular Malaysia.

## 2005

Damanhuri A., H. Maideen, L.P. Ong, A. Latiff & **G.E. Lee**. 2005. *Mosses of Matang Mangrove Forest Reserve*. In Sustainable Management of Matang Mangroves: 100 years and beyond. Eds. S.M. Ismail, A. Muda, R. Ujang, K.A. Budin, K.L. Lim, S. Rosli, J.M. Som & A. Latiff. Pg. 248-252. Forestry Department of Peninsular Malaysia.

Damanhuri A., Maideen H., Nur-Sabrina M.A., **Lee G.E.** & Ong L.P. 2005. *Moss flora of a peat swamp forest at Sungai Bebar, Pekan Forest Reserve, Pahang*. In Biodiversity Expedition Sungai Bebar, Pekan, Pahang. Summary Findings. Peat Swamp Forest Project, UNDP/GEF Funded, in collaboration with the Pahang Forestry Department and Universiti Kebangsaan Malaysia. Eds. Latiff A., Hamzah K.A., Ahmad N., Said M.N.M., Nee T.A. & Gill S.K. Pg. 62-65. PSF Technical Series No. 4.

## Courses Taught

Principles of Ecology (BIO3500), (Undergraduate), UMT

Taxonomy and Systematic of Organisms (BDV 3000), (Undergraduate), UMT

## Links

Researchgate : [https://www.researchgate.net/profile/Gaik\\_Ee\\_Lee](https://www.researchgate.net/profile/Gaik_Ee_Lee)

Google Scholar : [https://scholar.google.com/citations?user=eA\\_24WEAAAAJ&hl=en](https://scholar.google.com/citations?user=eA_24WEAAAAJ&hl=en)

Scopus : <https://www.scopus.com/authid/detail.uri?authorId=56707872100>