

THE HERBARIUM OF RUDOLF M. SCHUSTER:
UNLOCKING OVER A HALF A CENTURY OF BOTANICAL EXPLORATION

ГЕРБАРИЙ РУДОЛЬФА М. ШУСТЕРА: НАКОНЕЦ-ТО СТАЛИ ДОСТУПНЫ
МАТЕРИАЛЫ БОЛЕЕ ЧЕМ ПОЛУВЕКОВЫХ ИССЛЕДОВАНИЙ

MATT VON KONRAT¹, JOHN J. ENGEL¹, LAURA BRISCOE², YARENCY RODRIGUEZ¹,
MIKE NIEZGODA³, ANDREA SASS-GYARMATI⁴, TAMÁS PÓCS⁴, DENISE PINHEIRO DA COSTA⁵,
DAVID H. WAGNER⁶, MATT A.M. RENNER⁷, JORGE ENRIQUE GIL NOVOA⁵, JUAN LARRAÍN⁸,
MEREIA TABUA⁹, HANNAH RANFT¹⁰, JENNIFER LE¹, DAVID GLENNY¹¹, ROBIN LONG¹¹,
GENEA M. PITTS¹², NKOSI EVANS¹, ROBERT SALM¹ & VOLUNTEERS OF THE COLLECTIONS CLUB¹

МЭТТ ФОН КОНРАТ¹, ЛАУРА БРИСКО², ЯРЕНСИ РОДРИГЕС¹, ДЖОН Д. ЭНГЕЛ¹,
МАЙК НЕЗГОДА³, АНДРЕА САСС-ГИАРМАТИ⁴, ТАМАШ ПОЧ⁴, ДЕНИЗЕ ПИНХЕЙРО ДА КОСТА⁵,
ДЭВИД Г. ВАГНЕР⁶, МЭТТ А.М. РЕННЕР⁷, ХОРХЕ ЭНРИКЕ ГИЛ НОВОА⁵, ХУАН ЛАРРАЙН⁸,
МЕРЕИЯ ТАБУА⁹, ХАННА РАНФТ¹⁰, ДЖЕННИФЕР ЛИ¹, ДЭВИД ГЛЕННИ¹¹, РОБИН ЛОНГ¹¹,
ГЕНЕЯ М. ПИТТС¹², НКОСИ ЭВАНС¹, РОБЕРТ САЛЬМ¹, ВОЛОНТЕРЫ КЛУБА КОЛЛЕКТОРОВ¹

Abstract

The esteemed scholar, bryologist, and botanist, Prof. Rudolf M. Schuster, was a prolific collector and author of over 300 scientific publications. His staggering number of collections, reliably estimated at over 80,000 specimens, span almost six decades of fieldwork in over 38 countries. For almost his entire career, over two thirds of R. M. Schuster's herbarium was largely inaccessible at his private residence. In 2013 his herbarium, in its entirety, was transferred to Field Museum. A detailed overview of the herbarium of R. M. Schuster is provided, including a description of the collections, the geographical extent, and status of curation and accessibility. This is complemented by tabulations and summary data representing the number of liverwort taxa R. M. Schuster described during his career and appended with a complete list of publications associated with liverworts and hornworts. Supplementary material provides a complete list of validly and legitimately published names at all ranks, from species to order, coupled with their original publication. This is the only publication that attempts to centralize and summarize the collections, publications, and exhaustive list of described taxa representing the career of the pre-eminent scientist, Prof. R. M. Schuster.

Резюме

Выдающийся ученый, бриолог, ботаник, проф. Р.М. Шустер был выдающимся коллектором и автором более 300 научных трудов. За почти 60 лет исследований он собрал в 38 странах более 80,000 образцов. Почти все время две трети его гербария, хранившиеся у него дома, были малодоступны. В 2013 его гербарий был передан Музею естественной истории имени Филда в Чикаго. В статье приводится подробный обзор гербария Шустера, самих образцов, географии сборов, состояния, работы с ними и, наконец, доступности. Приводится полная библиография трудов Шустера по печеночникам и антоцеротовым, дополнительные материалы включают полные каталоги описанных им таксонов, от порядков до таксонов внутривидового ранга. В этой публикации наиболее подробно обобщены данные о научном наследии великого ученого – Рудольфа Матиаса Шустера.

KEYWORDS: Rudolf M. Schuster, herbarium, collections, liverworts, taxa, volunteers

¹ – Gantz Family Collections Center, Field Museum, 1400 S. DuSable Lake Shore Drive, Chicago, IL 60605, U.S.A.

² – Cryptogamic Herbarium, New York Botanical Garden, 2900 Southern Boulevard, Bronx, NY 10458, U.S.A.

³ – University of Wisconsin, 1550 Engineering Drive Madison, WI 53706, U.S.A.

⁴ – Botany Department, Institute of Biology, Eszterházy Károly Catholic University, Eger, Pf. 43, H-3301, Hungary

⁵ – Instituto de Pesquisas Jardim Botânico do Rio de Janeiro, Rua Pacheco Lero 915, 22460-030 Rio de Janeiro, Brazil

⁶ – Northwest Botanical Institute, PO Box 30064, Eugene, Oregon 97403, U.S.A.

⁷ – National Herbarium of New South Wales, Royal Botanic Garden and Domain Trust, Mrs. Macquaries Road, Sydney, NSW 2000, Australia.

⁸ – Instituto de Biología, Pontificia Universidad Católica de Valparaíso, Av. Universidad 330, Curauma, Valparaíso, Chile

⁹ – University of the South Pacific, Suva, Fiji

¹⁰ – University of Minnesota Duluth, Minnesota, U.S.A.

¹¹ – Allan Herbarium, Manaaki Whenua, PO Box 69-040, Lincoln 7640, New Zealand

¹² – Shapiro+Raj, 425 S. Financial Pl. Suite 3250, Chicago, IL 60605, U.S.A.

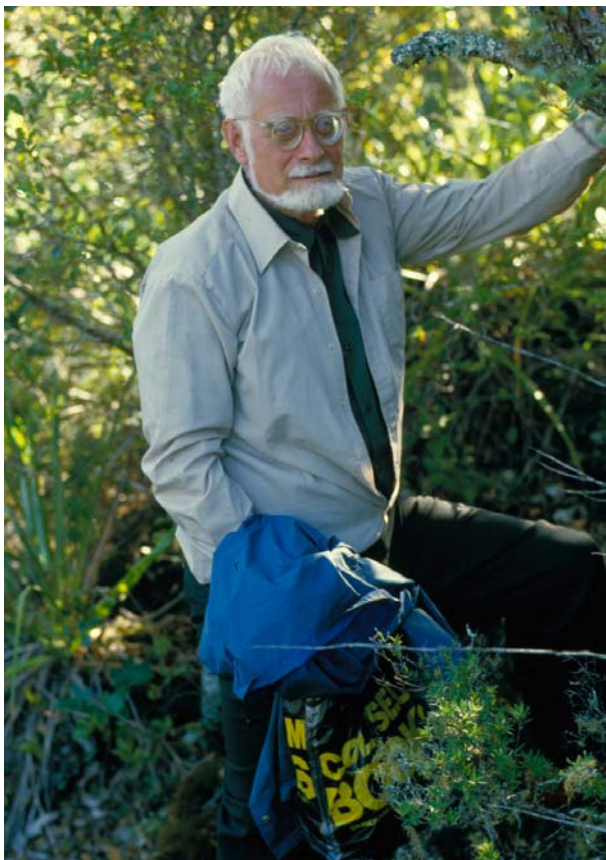


Fig. 1. Prof. Rudolf M. Schuster collecting on Rangitoto Island in the Hauraki Gulf, North Island, New Zealand in 1984. Photo Dr. John E. Braggins.

INTRODUCTION

Dr. Schuster, Professor Schuster, or Rudy – to all who knew him – was born April 8, 1921, in Altmühldorf, Germany (Fig. 1). Rudolf M. Schuster was an eminent botanist, hepaticologist, scholar, and world explorer, with a stunning career that spanned over six decades and represented one of the foremost classical scholars of our time in botany. Over the course of his career, he was awarded two Guggenheim Fellowships and a Fulbright U.S. scholar grant to conduct botanical research in New Zealand. His fieldwork took him all over the world and led to numerous scientific discoveries and novelties from the rank of form to order. It is difficult to name another contemporary botanist who discovered this much new diversity of a major clade of land plants (Qiu *et al.*, 2013). Schuster's research has had far reaching implications beyond bryology including his being one of the first botanists who recognized the importance of Wallace's Line in plant biogeography (Schuster 1972).

The International Association for Plant Taxonomy awarded him the Engler Medal in Silver in 1992 recognizing his illustrious scientific contributions. Since his passing on the 16th of November 2012, there have been several obituaries and biographies that provide an in-depth account of R. M. Schuster's life, from early childhood to his death, e.g., Qiu *et al.* (2013) and Long (2015).

Earlier, Engel & Klekowski (1988) provided an extensive account of the life and travels of R. M. Schuster as part of a Festschrift in celebration of his distinguished scholarship. Readers are referred to these accounts for his biographic background.

The object of this paper is to provide, for the first time, a detailed account of his exhaustive herbarium, and centralized information about all of his publications as they relate to liverworts and hornworts (Appendix 1) as well providing summary information about new taxa to science that he validly and legitimately described (Table 1). This is supplemented by a complete list, as we know it, of all taxa representing all ranks; this is confined to validly and legitimately names coupled with the original publication (Supplement 1). Our ambition with this paper is to provide thorough information about this important collection along with his exhaustive publications and novelties, which we hope will stimulate future research and continue the legacy of Prof. Rudolf M. Schuster.

OVERVIEW OF THE HERBARIUM OF R. M. SCHUSTER

In 1982, Field Museum purchased the entire herbarium of R. M. Schuster through the efforts of now Emeritus Curator John Engel. As part of the contractual agreement, the vast majority of R. M. Schuster's herbarium remained at his residence up until his passing to enable him to pursue his research. However, some 25,000 specimens, mainly from North America, were physically transferred to Field Museum where they were curated and databased. It was not until February 2013, that Field Museum acquired the remaining portion of what was then estimated to be approximately 35,000 specimens (Fig. 2).

Upon the packing and transfer of the herbarium of R. M. Schuster, it was abundantly clear that over a third of the collection was in critical need of curation ranging from specimens in original newspaper and brown paper bags to original collecting packets (Fig. 3C, D, F). There was also vital type material that required urgent attention, some of which was in glass vials and on microscopic slides. This was a major undertaking. Shortly after the acquisition, Field Museum Collections Spending Fund and later in 2015 the National Science Foundation (NSF Award No. 1115002) provided support for curation, sorting, barcoding, databasing and digitizing significant portions of the collection in order to make it accessible.

Throughout the past eight years, the collection has been widely used by visiting scholars and through loan activity. This period was also concurrent with a large-scale databasing initiative – the NSF funded Thematic Collection Network North American lichen and bryophyte consortium; a project imaging about 2.3 million North American lichen and bryophyte specimens from more than 60 U.S. herbaria to address questions of how species distributions change after major environmental events, both in the past and projected into the future. With the collection of R.M. Schuster being worldwide in scope, this effort continues with a similar NSF funded

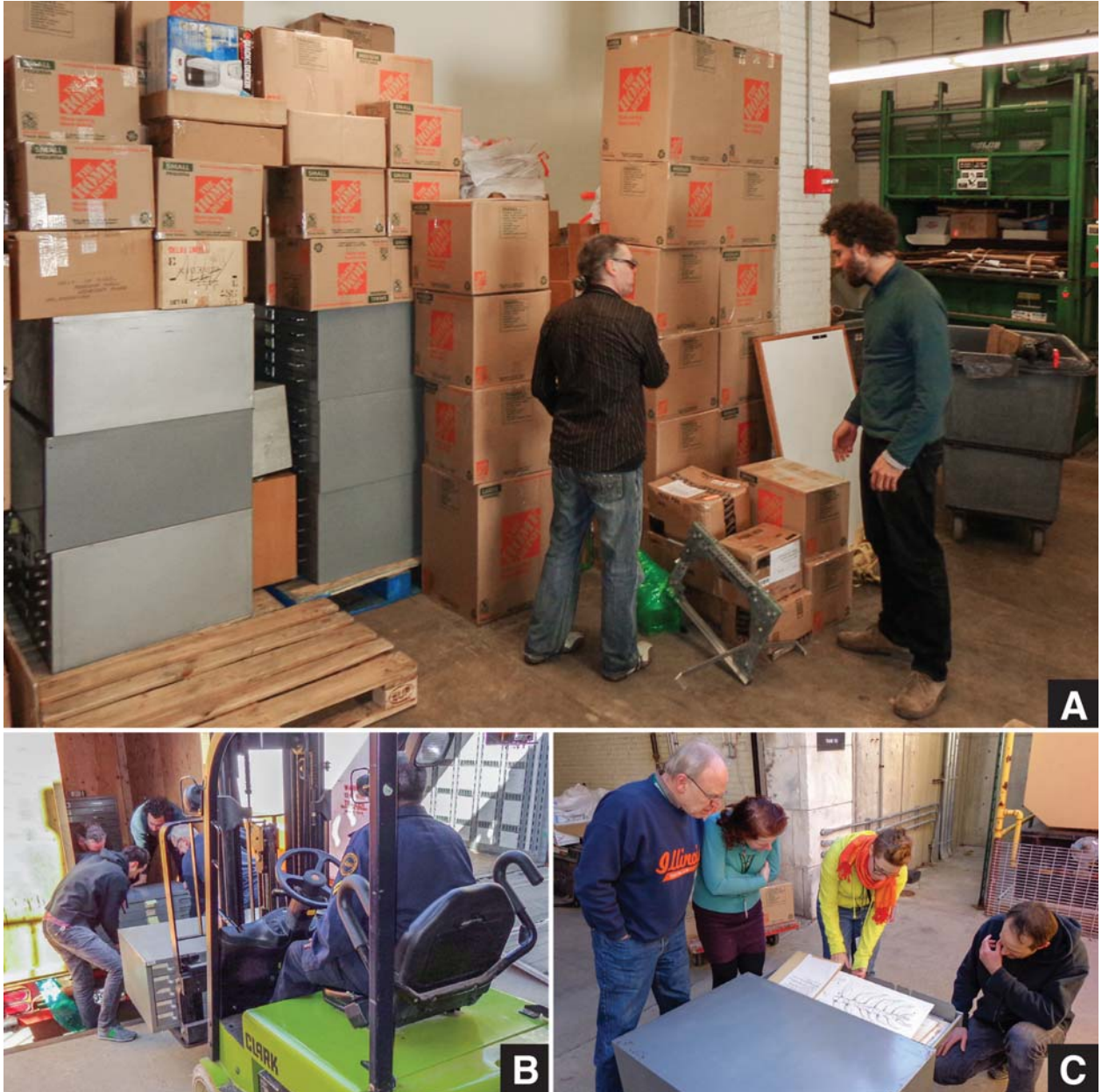


Fig. 2. Unloading of the herbarium of R. M. Schuster at the loading dock of Field Museum. A. Matt von Konrat and Juan Larrain with the scores of boxes of specimens. B. Matthew Nelson, Matt von Konrat, Juan Larrain, and John Engel manoeuvre the steel drawers full of original illustrations with Terry Bruce. C. Laura Briscoe and staff marvel at the original plates.

digitization effort - Building a global consortium of bryophytes and lichens: keystones of cryptobiotic communities (NSF Award No. 2001509). This latter digitization effort offers the opportunity to also capture digital images of the physical specimen itself as well as label data.

THE UNLOCKING OF SIX DECADES OF COLLECTIONS

The following describes the effort from several key individuals, including co-authors Laura Briscoe, Yarency Rodriguez, Mike Niezgodka with numerous assistance from volunteers and interns throughout the past eight years. Originally, ten's of thousands of specimens were in paper bags and newspaper (Fig. 3 C, D, E, F). Typically, R. M. Schuster would collect specimens in packets

in the field, transfer these to individual newspaper sheets then into bundles, with locality information for later curation and processing (Fig. 3E, F). An estimated 30,000 specimens had already been at least partially curated, labelled and packeted (Fig. 3B). Over 20,000 specimens were in critical need to be transferred from newspaper to packets for accessibility. This was largely achieved by assistance from volunteers, including Field Museum Collection Club members - a group of volunteers that meet every quarter (Fig. 4A). Through these combined efforts spanning several years, the collections have finally become accessible to scientists worldwide that have otherwise been largely inaccessible for several decades.



Fig. 3. A. One of two aisles dedicated to the herbarium of R. M. Schuster herbarium. B. Jorge Enrique Gil Novoa, from Colombia, perusing the 1000's of specimens that were already adequately housed, labelled and identified to various degrees. C., D. Significant collections remain in brown paper collecting bags, have not been identified but have valuable label data. E. Bundle of specimens in newspaper with locality data affixed to the "lot" or bundle. F. Over 20,000 specimens were housed in newspaper. G. The final curated specimen with label printed directly on archival packet, barcoded and databased.

Figure 4B, C & D indicate the final curated specimens. Many specimens came with adequately archived label data that was glued directly onto archival packets (3B).

A complete inventory of R. M. Schuster's herbarium was performed by Collection Club members after it had

been immaculately sorted and curated by staff and volunteers over the years. A staggering 58,974 specimens were counted and inventoried. The lots themselves had been earlier carefully surveyed by Laura Briscoe and Mike Niezgodka to determine level of curation, e.g., presence/absence



Fig. 4. A. Collections Club members that significantly contributed to unlocking the collections of R. M. Schuster exemplifies community science efforts. B., D. Original labels glued on to archival packets. labels C. Specimens housed in the main herbarium by geography. E, F. Over 600 microscopic slides; some have been salvaged by Juan Larrain. G. Over 500 vials of material in FAA have been inventoried.

of label data, identification, and level of processing in order to establish priorities. Together with material already in the main herbarium we count 80,273 specimens representing collections from 35 countries (Fig. 5). This includes approximately 5,000 specimens that are either gifts, exchange or exsiccate sets. Unfortunately, close to 10,000 specimens have either no label data at all, or limited label data, or only the country is known.

The R. M. Schuster collection also has a significant number of specimens in FAA glass vials (549) and important microscopic slides (over 600) that have been inventoried and available upon request (Fig. 4E, F, G). Some the newly described species by R. M. Schuster were only of reported from the type collection from slides or FAA (von Konrat et al. 2006) so these represent a valuable resource. Field Museum also has over 1,000 of R.

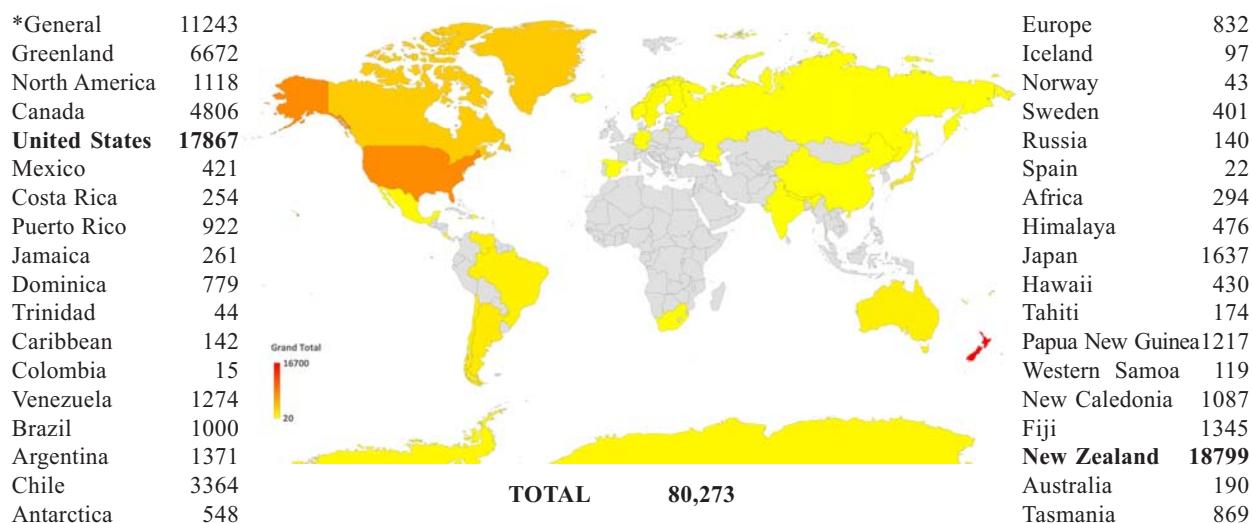


Fig. 5. Global distribution illustrating regions and countries R. M. Schuster collected.

M. Schuster's original illustration plates that have yet to be completely inventoried, although John Engel has done a partial analysis. The collection also has 399 type fragments or "collectotypes" from various type collections R. M. Schuster studied.

Herbaria have long been recognized as a major frontier for species discovery and distribution patterns with studies indicating a vast majority of undescribed species that have already been collected and are stored in herbaria (Bebber *et al.*, 2010). This also extends to range extensions and distribution patterns. Since 2013, the curation of R. M. Schuster's herbarium has contributed to a plethora of such discoveries, and in many cases his collections remain unique because of the extremely isolated regions collected and the era in which they were collected. Some noteworthy examples include the first bryofloristic analysis for a Brazilian mountain in the Amazonian rainforest (Costa *et al.*, 2017), ongoing floristic studies of New Zealand, including the first ever modern liverwort and hornwort flora for the region (Engel & Gleny 2019a,b), many new records from Fiji (von Konrat *et al.* 2014, Pócs *et al.* 2018), and new species to science from New Caledonia (Larraín *et al.*, 2018). These examples and more underscore that effort, funding, and research focus should, therefore, be directed as much to examining extant herbarium material as collecting new material in the field (Bebber *et al.* 2010).

ENUMERATION OF TAXA DESCRIBED BY R. M. SCHUSTER

Rudy's major contribution to botany and hepaticology lies in the astounding new diversity of liverworts he added to our knowledge. Mostly by himself and through collaboration with a small number of colleagues, he described 455 taxa at the rank of species or below, 97 genera and 343 infrageneric taxa, 75 higher taxa, including 16 families, 16 suborders and one order (Table 1). These discoveries were made in his land-combing floristic surveys of hepatics in eastern North America, Greenland, New

Zealand, and other parts of the world. As noted by Godfrey & Godfrey (2012), R. M. Schuster particularly emphasized the importance of examining hepatic specimens while they are still fresh, recording taxonomic characters associated with oilbodies – cellular structures that typically disappear upon drying. A complete list of all taxa described by R. M. Schuster is provided as Supplementary Material, which includes the original citation. This exhaustive list of over 900 taxa is restricted to those that were validly and legitimately published. As commented by Godfrey & Godfrey (2012) and others, R. M. Schuster had had little or no patience with the practice of designating new taxa through the exercise of nomenclatural revision.

Table 1. Taxa described by R.M. Schuster (see complete lists in Supplementary Materials)

Forms	23	Genera	97
Varieties	73	Tribes	8
Subspecies	57	Subfamilies	34
Species	302	Families	16
Subsections	40	Suborders	16
Sections	181	Order	1
Subgenera	122		

BIBLIOGRAPHY OF R. M. SCHUSTER

R. M. Schuster has authored or co-authored 256 publications that focus on bryology. Perhaps the most noteworthy are the multi-volume books: *the Hepaticae and Anthocerotae of North America, east of the hundredth meridian* (The Big Green), and three volumes of *Austral Hepaticae*. These floras are not mere conventional compilations of taxonomic diversity, but are also encyclopedic treatments of liverworts and hornworts as well as their biology (Qiu *et al.*, 2013). Engel *et al.* (2015) previously provided this exhaustive list of publications, which we slightly modify and include here as Appendix 1 to provide a central source of R. M. Schuster's scholarly contribution to bryology.

ACKNOWLEDGMENTS

The Biodiversity Heritage Library is acknowledged for the facility they provide that has greatly accelerated our efforts. The generous support by the National Science Foundation (Award No.'s 1145898, 1115002 1458300, 1541506, 2001509 and 0531730) is gratefully acknowledged. We also recognize the support of the Museum Collection Spending Fund, administered by Field Museum, as well as curatorial support provided by L. Kawasaki, and A. Balla (Field Museum). Deep gratitude is owed to Anders Hagborg (Field Museum) and Lars Söderström (Norwegian University of Science and Technology) who very generously prepared the supplementary material and summary statistics regarding novelties. Many volunteers and interns as well as dozens of members of the Field Museum Collections Club – a group of volunteers that meet every quarter. Without the countless hours of assistance for over 80,000 specimens the herbarium of R.M. Schuster would not be in the accessible state that it now is.

LITERATURE CITED

- BEBBER, D.P., M.A. CARINE, J.R. WOOD, A.H. WORTLEY, D.J. HARRIS, G.T. PRANCE, G. DAVIDSE, J. PAIGE, T.D. PENNINGTON, N.K. ROBSON, & R.W. SCOTLAND. 2010. Herbaria are a major frontier for species discovery. – *Proceedings of the National Academy of Sciences* **107**(51): 22169–2217.
- COSTA, D.P., D.F. PERALTA, W.R. BUCK, J. LARRAÍN, & M. VON KONRAT. 2017. Serra do Curicuriari, Amazonas state, Brazil: the first bryofloristic analysis for a Brazilian mountain in the Amazonian forest. – *Phytotaxa* **303**: 201–217.
- ENGEL, J. J. & D. S. GLENNY. 2019a. A Flora of the Liverworts and Hornworts of New Zealand, Volume 2. – *Missouri Botanic Gardens Press, St Louis* 750 pp.
- ENGEL, J. J. & D. S. GLENNY. 2019b. A Flora of the Liverworts and Hornworts of New Zealand, Volume 3. – *Missouri Botanic Gardens Press, St Louis*, 672 pp.
- ENGEL, J.J. & A. KLEKOWSKI. 1988. The life and travels of a twentieth century plant explorer; together with a comprehensive bibliography of R.M. Schuster's publications in bryology. – *Beihefte zur Nova Hedwigia* **90**: 1–15.
- ENGEL, J.J., M. VON KONRAT & Y. RODRIGUEZ. 2015. The Bryological Works of Rudolf M. Schuster. – *Plant Science Bulletin* **59**: 45–54.
- GODFREY, J. & G. GODFREY. 2012. Remembering Rudolf M. “Rudy” Schuster, Ph.D. (1921–2021). – *Botanical Electronic News* **461** [Accessed at <https://www.ou.edu/cas/botany-micro/ben/ben461.html> on December 09, 2021]
- LARRAÍN, J., M. VON KONRAT, P. NGUYEN, B.E. CARTER, B. AGÜERO, M. TABUA, M. & L. THOUVENOT. 2018. Unveiling the enigmatic and ambiguous: A new *Frullania* species from New Caledonia. – *Bryophyte Diversity and Evolution* **40**: 104–112.
- LONG, D.G. 2015. Rudolf M. Schuster (1921–2012). – *Journal of Bryology* **37**: 151–155.
- SCHUSTER, R.M. 1972. Continental movements, “Wallace’s line” and Indomalayan-Australasian dispersal of land plants - some eclectic concepts. – *Botanical Review* **38**: 3–86.
- PÓCS, T., A. SASS-GYARMATI, M. VON KONRAT, & L. BRISCOE. 2018. Bryophytes from the Fiji Islands, IX. Liverwort Collections Made by R.M. Schuster. – *Cryptogamie, Bryologie* **39**: 169–176.
- QIU, Y.-L., M. VON KONRAT, & J.J. ENGEL. 2013. In Memoriam. Rudolf Mathias Schuster. 1921–2012. – *Plant Science Bulletin* **59**: 165–168.
- VON KONRAT, M., J. ENGEL, M. KATAFONO, L. SÖDERSTRÖM, E. COOPER, C. DELAVOI, A. HAGBORG, M. RENNEN, L. BRISCOE, T. PÓCS, J. BRAGGINS, S.H. TUIWAWA, A.N. NAIKATINI, & M. TUIWAWA. 2014. Unlocking collections: New records of Lepidoziaceae (Marchantiophyta) for the islands of Fiji. – *Telopea - Journal of Plant Systematics* **17**: 403–413.

COMPLETE BIBLIOGRAPHY OF RUDOLF MATTHIAS SCHUSTER ON BRYOPHYTES

- SCHUSTER, R.M. 1949. Notes on Nearctic hepaticae I. *Dianthelia steerei* gen. et sp. n., a critical endemic of the Appalachians, with notes on the relationships of the genus. – *The Bryologist* **52**(3): 102–120. <https://doi.org/10.2307/3238941>
- SCHUSTER, R.M. 1949. The ecology and distribution of hepaticae in Central and Western New York. – *The American Midland Naturalist* **42**(3): 513–712. <https://doi.org/10.2307/2421930>
- SCHUSTER, R.M. 1950. The hepaticae of the east coast of Hudson Bay: (notes on Nearctic hepaticae, II). Ottawa: the Minister of Resources and Development.
- SCHUSTER, R.M. 1951. Notes on Nearctic hepaticae III. A conspectus of the family Lophoziaaceae, with a revision of the genera and subgenera. – *The American Midland Naturalist* **45**(1): 1–117. <https://doi.org/10.2307/2421711>
- SCHUSTER, R.M. 1951. Notes on Nearctic hepaticae IV. *Scapania spitzbergensis* and *Scapania convexula* in North America. – *The Bryologist* **54**(3): 162–180. <https://doi.org/10.2307/3240300>
- SCHUSTER, R.M. 1952. Notes on Nearctic hepaticae. V. The status of *Lophozia gracillima* Buch and its relationships to *Lophozia longidens*, *Lophozia porphyroleuca* and *Sphenolobus ascendens*. – *The Bryologist* **55**(3): 173–185. <https://doi.org/10.2307/3239846>
- SCHUSTER, R.M. 1953. Boreal hepaticae a manual of the liverworts of Minnesota and adjacent regions. – *The American Midland Naturalist* **49**(2): 257–684. <https://doi.org/10.2307/2422089>
- SCHUSTER, R.M. 1953. Notes on Nearctic hepaticae VII. *Lophozia (Dilophozia) latifolia* sp. nov. – *The Bryologist* **56**(4): 257–276. <https://doi.org/10.2307/3240457>
- SCHUSTER, R.M. 1954. Notes on Nearctic hepaticae. VIII. Lejeuneaceae Holostipae of North America. – *Journal of the Elisha Mitchell Scientific Society* **70**(1): 42–56.
- SCHUSTER, R.M. & S. HATTORI. 1954. The oil-bodies of the hepaticae. II. The Lejeuneaceae. – *Journal of the Hattori Botanical Laboratory* **11**: 11–86.
- SCHUSTER, R.M. 1955. Notes on Nearctic hepaticae. IX. The relationships of the genus *Gyrothyra*. – *The Bryologist* **58**(2): 137–141. <https://doi.org/10.2307/3240429>
- SCHUSTER, R.M. 1955. North American Lejeuneaceae. I. Introduction; keys to subfamilies and genera. – *Journal of the Elisha Mitchell Scientific Society* **71**(1): 106–126.
- SCHUSTER, R.M. 1955. North American Lejeuneaceae. II. Paradoxae: the genera *Aphanolejeunea* and *Leptocolea*. – *Journal of the Elisha Mitchell Scientific Society* **71**(1): 126–148.
- SCHUSTER, R.M. 1955. North American Lejeuneaceae. III. Paradoxae: *Cololejeunea*, Sectio *Minutissimae*. – *Journal of the Elisha Mitchell Scientific Society* **71**(2): 218–247.
- SCHUSTER, R.M. 1955. Dr. Karl Müller: an appreciation. – *The Bryologist* **58**(4): 311–316.
- SCHUSTER, R.M. 1955. Review of flore générale de Belgique, bryophytes. Vol. 1, Fasc. 1, by C. V. Berghen. – *The Bryologist* **59**(3): 230.
- SCHUSTER, R.M. & H.L. BLOMQUIST. 1955. A comparative study of *Telaranea nematodes*. – *American Journal of Botany* **42**(7): 588–593. <https://doi.org/10.2307/2485316>

- SCHUSTER, R.M. & L.E. ANDERSON. 1955. *Taxithelium planum* (Brid.) Mitt., epiphyllous on *Sabal palmetto* (Walt.) R. & S. – *The Bryologist* **58**(3): 237–239. <https://doi.org/10.2307/3239911>
- SCHUSTER, R.M. 1956. North American Lejeuneaceae. IV. Paradoxae: *Cololejeunea* (concl.), *Diplasiolejeunea*. – *Journal of the Elisha Mitchell Scientific Society* **72**(1): 87–125.
- SCHUSTER, R.M. 1956. Notes on Nearctic hepaticae X. A study of *Cephalozia rhizantha*, *C. floridiae* and *C. ludoviciana*. – *The Bryologist* **59**(2): 130–140. <https://doi.org/10.2307/3239927>
- SCHUSTER, R.M. 1956. *Aphanolejeunea cornutissima* nom. nov. – *The Bryologist* **59**(3): 217–218.
- SCHUSTER, R.M. 1956. North American Lejeuneaceae. V. Schizostipae: *Ceratolejeunea*. – *Journal of the Elisha Mitchell Scientific Society* **72**(2): 292–316.
- SCHUSTER, R.M. 1956. Review of a revision of the Japanese species of Scapaniaceae, by T. Amakawa & S. Hattori. – *The Bryologist* **59**(3): 230–231.
- SCHUSTER, R.M. 1956. Review of oil-bodies of Japanese hepaticae, I and II, by S. Hattori. – *The Bryologist* **59**(3): 231.
- SCHUSTER, R.M. 1956. Review of die Lebermoose Europas in Rabenhorst's Kryptogamen-flora, VI, by K. Müller. – *The Bryologist* **59**(1): 51–56. <https://doi.org/10.2307/3240294>
- SCHUSTER, R.M. 1956. Review of Marchantiales of Japan, I-IV, by D. Shimizu & S. Hattori. – *The Bryologist* **59**(3): 232.
- SCHUSTER, R.M. 1957. Boreal hepaticae, a manual of the liverworts of Minnesota and adjacent regions. II. Ecology. – *The American Midland Naturalist* **57**(1-2): 203–299.
- SCHUSTER, R.M. 1957. North American Lejeuneaceae. VI. *Lejeunea*: introduction and keys; subgenus *Lejeunea* (I). – *Journal of the Elisha Mitchell Scientific Society* **73**(1): 122–197.
- SCHUSTER, R.M. 1957. North American Lejeuneaceae. VI. *Lejeunea*: subgenus *Lejeunea* (II, concluded). – *Journal of the Elisha Mitchell Scientific Society* **73**(2): 388–443.
- SCHUSTER, R.M. 1957. Notes on Nearctic hepaticae. XII. *Marsupella paroica* n. sp. – *The Bryologist* **60**(2): 145–151.
- SCHUSTER, R.M. 1957. Notes on Nearctic hepaticae, IX. A study of *Plagiochila yokogurensis* Steph. – *Journal of the Hattori Botanical Laboratory* **18**: 14–26.
- SCHUSTER, R.M. 1957. Notes on Nearctic hepaticae, XV. *Herberta*. – *Revue Bryologique et Lichénologique* **26**: 123–145.
- SCHUSTER, R.M. & P.M. PATTERSON. 1957. Noteworthy hepaticae from Virginia. – *Rhodora* **59**: 251–259.
- SCHUSTER, R.M. 1958. Boreal hepaticae, a manual of the liverworts of Minnesota and adjacent regions. III. Phytogeography. – *The American Midland Naturalist* **59**(2): 257–332.
- SCHUSTER, R.M. 1958. Notes on Nearctic hepaticae. XIII. The genus *Tritomaria* (Lophoziaceae) in Arctic Canada. – *Canadian Journal of Botany* **36**(2): 269–288.
- SCHUSTER, R.M. 1958. Keys to the orders, families and genera of hepaticae of America north of Mexico. – *The Bryologist* **61**(1): 1–66.
- SCHUSTER, R.M. 1958. Notes on Nearctic hepaticae, XIV. The Chonecoleaceae. – *Journal of the Hattori Botanical Laboratory* **20**: 1–16.
- SCHUSTER, R.M. 1958. Notes on Nearctic hepaticae VI. Phytogeographical relationships of critical species in Minnesota and adjacent areas of the Great Lakes. – *Rhodora* **60**: 243–256.
- SCHUSTER, R.M. & W.C. STEERE. 1958. *Hygrolejeunea alaskana* sp. n., a critical endemic of northern Alaska. – *Bulletin of the Torrey Botanical Club* **85**(3): 188–196.
- SCHUSTER, R.M. 1959. Evolution in the Ptilidiinae. – *Proceedings of the IX International Botanical Congress, Montreal* **2**: 350.
- SCHUSTER, R.M. 1959. Epiphyllous hepaticae in the southern Appalachians. – *The Bryologist* **62**(1): 52–55.
- SCHUSTER, R.M. 1959. Studies on hepaticae. I. *Temnoma*. – *The Bryologist* **62**(4): 233–242.
- SCHUSTER, R.M., W.C. STEERE & J.W. THOMSON. 1959. The terrestrial cryptogams of northern Ellesmere Island. – *National Museum of Canada Bulletin* **164**: 1–132.
- SCHUSTER, R.M. 1959. A monograph of the Nearctic Plagiochilaceae. I. Introduction and Sectio I. *Asplenioides*. – *The American Midland Naturalist* **62**: 1–166.
- SCHUSTER, R.M. 1959. A monograph of the Nearctic Plagiochilaceae. Part II. Sectio *Zonatae* through Sectio *Parallelae*. – *The American Midland Naturalist* **62**(2): 257–395.
- SCHUSTER, R.M. 1960. A monograph of the Nearctic Plagiochilaceae. Part III. Sectio *Contiguae* to conclusion. – *The American Midland Naturalist* **63**(1): 1–130.
- SCHUSTER, R.M. 1960. Alexander W. Evans (1868-1959). – *Revue Bryologique et Lichénologique* **29**: 132–139.
- SCHUSTER, R.M. 1960. Alexander W. Evans – an appreciation. – *The Bryologist* **63**: 73–81.
- SCHUSTER, R.M. 1960. Studies on hepaticae. II. The new family Chaetophyllopsiaceae. – *Journal of the Hattori Botanical Laboratory* **23**: 68–76.
- SCHUSTER, R.M. 1960. Notes on Nearctic hepaticae, XIX. The relationships of *Blepharostoma*, *Temnoma* and *Lepicolea*, with description of *Lophochaete* and *Chandonanthus* subg. *Tetralophozia*, subg. n. – *Journal of the Hattori Botanical Laboratory* **23**: 192–210.
- STEERE, W.C. & R.M. SCHUSTER. 1960. The hepatic genus *Ascidia* Massalongo new to North America. – *Bulletin of the Torrey Botanical Club* **87**: 209–215.
- SCHUSTER, R.M. 1961. Notes on Nearctic hepaticae. XVIII. New Lophoziaceae from the Arctic Archipelago of Canada. – *Canadian Journal of Botany* **39**: 965–992.
- SCHUSTER, R.M. 1961. Studies in Lophoziaceae. I. The genera *Anastrophyllum* and *Sphenolobus* and their segregates. – *Revue Bryologique et Lichénologique* **30**: 55–73.
- SCHUSTER, R.M. 1961. Studies on hepaticae III–VI. – *The Bryologist* **64**: 198–208.
- SCHUSTER, R.M. 1961. The genera *Thysananthus*, *Ptychocoleus*, *Tuzibeanthus*, *Phragmilejeunea* and *Brachiolejeunea* (Lejeuneaceae Holostipae). – *The Bryologist* **64**: 156–167.
- KACHROO, P. & R.M. SCHUSTER. 1961. The genus *Pycnolejeunea* and its affinities to *Cheilolejeunea*, *Euosmolejeunea*, *Nipponolejeunea*, *Tuyamaella*, *Siphonolejeunea*, and *Strepsilejeunea*. – *Journal of the Linnean Society. Botany* **56**: 475–511.
- SCHUSTER, R.M. 1962. North American Lejeuneaceae. VII. *Lejeunea* (*Lejeunea*) *blomquistii* sp. nov. – *Journal of the Elisha Mitchell Scientific Society* **78**: 64–68.
- SCHUSTER, R.M. 1962. A study of *Cephalozia* with special reference to *C. pearsoni* and its distribution. – *Transactions of the British Bryological Society* **4**: 230–246.
- SCHUSTER, R.M. 1962. North American Lejeuneaceae. VIII. *Lejeunea*, subgenera *Microlejeunea* and *Chaetolejeunea*. – *Journal of the Hattori Botanical Laboratory* **25**: 1–80.
- SCHUSTER, R.M. 1963. An annotated synopsis of the genera and subgenera of Lejeuneaceae. I. Introduction; annotated keys to subfamilies and genera. – *Beihefte zur Nova Hedwigia* **9**: 1–203.
- SCHUSTER, R.M. 1963. Studies on hepaticae XI–XIII. On *Temnoma*, *Vetaforma* and *Lophochaete* (Blepharostomaceae; hepaticae). – *Nova Hedwigia* **5**: 27–46.
- SCHUSTER, R.M. 1963. Studies on antipodal hepaticae. I. Annotated keys to the genera of antipodal hepaticae with special reference to New Zealand and Tasmania. – *Journal of the Hattori Botanical Laboratory* **26**: 185–309.
- SCHUSTER, R.M. 1964. Studies on hepaticae. XIX–XX. *Cephalozia* (Spr.) Schiffn. and *Andrewsianthus* Schust. – *Nova Hedwigia* **8**: 201–209.
- SCHUSTER, R.M. 1964. Studies on hepaticae. XXI. Cephaloziaceae, with particular reference to *Metahygrobiella* Schust. and *Cephalozia* Dumort. – *Nova Hedwigia* **8**: 211–223.

- SCHUSTER, R.M. 1964. Studies on hepaticae. XXII.-XXV. *Pleurocladopsis* Schust., gen. n., *Eoisotachis* Schust., gen. n., *Grollea* Schust., gen. n., with critical notes on *Anthelia* Dumort. – *Nova Hedwigia* **8**: 275–296.
- SCHUSTER, R.M. 1964. Studies on hepaticae. XVII. *Trichotemnoma* Schust., gen. n. – *Journal of the Hattori Botanical Laboratory* **27**: 149–158.
- SCHUSTER, R.M. 1964. Studies on antipodal hepaticae, IV. Metzgeriales. – *Journal of the Hattori Botanical Laboratory* **27**: 183–216.
- SCHUSTER, R.M. 1964. Studies on hepaticae XIV. The genus *Austrolophozia* Schust. – *The Bryologist* **67**: 179–186.
- SCHUSTER, R.M. 1964. Studies on antipodal hepaticae. VI. The suborder Perssoniellinae: morphology, anatomy and possible evolution. – *Bulletin of the Torrey Botanical Club* **91**: 479–490.
- SCHUSTER, R.M. 1965. North American Lejeuneaceae. IX. *Taxilejeunea*. – *Journal of the Elisha Mitchell Scientific Society* **81**: 32–50.
- SCHUSTER, R.M. 1965. Studies on antipodal hepaticae. II. *Archeophylla* Schuster and *Archeochaete* Schuster, new genera of Blepharostomaceae. – *Transactions of the British Bryological Society* **4**: 801–817.
- SCHUSTER, R.M. 1965. Studies on hepaticae. XVI. The morphology and systematic position of the suborder Pleuroziinae. – *Transactions of the British Bryological Society* **4**: 794–800.
- SCHUSTER, R.M. 1965. A note on *Lejeunea capensis*. – *Transactions of the British Bryological Society* **4**: 831.
- SCHUSTER, R.M. 1965. Studies on hepaticae. XXVI. The *Bonneria-Paracromastigum-Pseudocephalozia-Hyalolepidozia-Zoopsis-Pteropsiella* complex and its allies: a phylogenetic study (part 1). – *Nova Hedwigia* **10**: 19–61.
- SCHUSTER, R.M. 1965. Studies on antipodal hepaticae, VII. Goebeliellaceae. – *Journal of the Hattori Botanical Laboratory* **28**: 129–138.
- SCHUSTER, R.M. 1965. Studies on hepaticae, XXVII. *Xenocephalozia* Schust. – *Journal of the Hattori Botanical Laboratory* **28**: 139–145.
- SCHUSTER, R.M. 1966. A memoir on the family Blepharostomataceae, I. – *Candollea* **21**: 59–136.
- SCHUSTER, R.M. 1966. The hepaticae and Anthocerotae of North America east of the hundredth meridian. Vol. I. – *New York, Columbia University Press*, 1–802 pp.
- SCHUSTER, R.M. 1966. Studies in Lophoziaceae. 1. The genera *Anastrophyllum* and *Sphenolobus* and their segregates. 2. *Cephalolobus* gen. n., *Acrolophozia* gen. n. and *Protomarsupella* gen. n. – *Revue Bryologique et Lichénologique* **34**: 240–287.
- SCHUSTER, R.M. 1966. Studies on hepaticae, XXVIII. On *Phycolepidozia*, a new, highly reduced genus of Jungermanniales of questionable affinity. – *Bulletin of the Torrey Botanical Club* **93**: 437–449.
- SCHUSTER, R.M. 1966. A memoir on the family Blepharostomataceae, II. – *Candollea* **21**: 241–355.
- SCHUSTER, R.M. 1966. On *Adelanthus* Mitten: a case of the international rules versus the international rules. – *Nova Hedwigia* **12**: 353–361.
- SCHUSTER, R.M. 1966. Studies on hepaticae, VII–X. On *Adelanthus* Mitten and *Calypetrocolea* Schuster, gen. n. – *Revue Bryologique et Lichénologique* **34**: 676–703.
- SCHUSTER, R.M. 1967. North American Lejeuneaceae. X. *Harpalejeunea*, *Drepanolejeunea*, and *Leptolejeunea*. – *Journal of the Elisha Mitchell Scientific Society* **83**: 192–229.
- SCHUSTER, R.M. 1967. A note on the genus *Gymnocolea* Dum. – *The Bryologist* **70**: 111–112.
- SCHUSTER, R.M. 1967. Studies on hepaticae XV. Calobryales. – *Nova Hedwigia* **13**: 1–63.
- SCHUSTER, R.M. 1967. Studies on antipodal hepaticae. IX. Phyllothallicaceae. – *Transactions of the British Bryological Society* **5**: 283–288.
- SCHUSTER, R.M. 1968. Introduction to H. Leitgeb, Untersuchungen Über die Lebermoose. – *Lehre, J. Cramer*, 1–8 pp.
- SCHUSTER, R.M. 1968. Studies on antipodal hepaticae, X. Subantarctic Scapaniaceae, Balantiopsidaceae and Schistochilaceae. – *Bulletin of the National Science Museum* **11**: 13–31.
- SCHUSTER, R.M. 1968. Studies on hepaticae. XLV. On *Iwatsukia* Kitagawa. – *Bulletin of the National Science Museum* **11**: 309–317.
- SCHUSTER, R.M. 1968. Studies on hepaticae, XXIX–XLIV. A miscellany of new taxa and new range extensions. – *Nova Hedwigia* **15**: 437–529.
- SCHUSTER, R.M. 1969. Problems of antipodal distribution in lower land plants. – *Taxon* **18**: 46–91.
- SCHUSTER, R.M. 1969. Results of bryological field work in the Antarctic Peninsula, austral summer. 1968–1969. – *Antarctic Journal of the United States* **4**: 103–104.
- SCHUSTER, R.M. 1969. Studies on hepaticae. XLVIII. On *Anomacaulis* Schust. – *Transactions of the British Bryological Society* **5**: 797–799.
- SCHUSTER, R.M. 1969. Studies on hepaticae, XLVI–XLVII. On *Alobiella* (Spr.) Schiffn. and *Alobiellopsis* Schust. – *Bulletin of the National Science Museum* **12**: 659–683.
- SCHUSTER, R.M. 1969. The hepaticae and Anthocerotae of North America east of the hundredth meridian. Vol. II. – *New York, Columbia University Press*, 1–1062 pp.
- SCHUSTER, R.M. 1969. *Anomarsupella*, a new genus of Gymnomitriaceae from Greenland. – *Nova Hedwigia* **17**: 75–82.
- SCHUSTER, R.M. & G.A.M. SCOTT. 1969. A study of the family Treubiaceae (hepaticae; Metzgeriales). – *Journal of the Hattori Botanical Laboratory* **32**: 219–268.
- SCHUSTER, R.M. 1970. Studies on antipodal hepaticae, III. *Jubulopsis* Schuster, *Neohattoria* Kamimura and *Amphijubula* Schuster. – *Journal of the Hattori Botanical Laboratory* **33**: 266–304.
- SCHUSTER, R.M. 1970. Studies on hepaticae. XVIII. The family Jungermanniaceae, s. lat.: a reclassification. – *Transactions of the British Bryological Society* **6**: 86–107.
- SCHUSTER, R.M. 1970. Review of manual of the leafy hepaticae of Latin America. Part III, by M. H. Fulford. – *Transactions of the British Bryological Society* **6**: 161–164.
- SCHUSTER, R.M. 1970. Studies on hepaticae, XLIX–LIII. New Lejeuneaceae from Dominica and Jamaica. – *Bulletin of the Torrey Botanical Club* **97**: 336–352.
- SCHUSTER, R.M. 1971. The ecology and distribution of hepaticae in a Mahogany Hammock in tropical Florida. – *Castanea* **36**: 90–111.
- SCHUSTER, R.M. 1971. Two new antipodal species of *Haplomitrium* (Calobryales). – *The Bryologist* **74**: 131–143.
- SCHUSTER, R.M. 1971. Studies of antipodal Schistochilaceae and Scapaniaceae. – *Bulletin of the National Science Museum* **14**: 609–660.
- SCHUSTER, R.M. 1971. On the genus *Pleurocladopsis* Schuster (Schistochilaceae). – *The Bryologist* **74**: 493–495.
- SCHUSTER, R.M. 1971. Studies on Cephaloziellaceae. – *Nova Hedwigia* **22**: 121–265.
- SCHUSTER, R.M. 1971. Studies on Cephaloziellaceae. II. *Cylindrocolea madagascariensis*. – *Nova Hedwigia* **22**: 266 a–c.
- INOUE, H. & R. M. SCHUSTER. 1971. A monograph of New Zealand and Tasmanian Plagiochilaceae. – *Journal of the Hattori Botanical Laboratory* **34**: 1–225.
- SCHUSTER, R.M. 1972. Continental movements, “Wallace’s Line,” and Indomalayan–Australasian dispersal of land plants: some eclectic concepts. – *Botanical Review, Interpreting Botanical Progress* **38**: 3–86.
- SCHUSTER, R.M. 1972. Evolving taxonomic concepts in the hepaticae, with special reference to circum-pacific taxa. – *Journal of the Hattori Botanical Laboratory* **35**: 169–201.
- SCHUSTER, R.M. 1972. Phylogenetic and taxonomic studies on Jungermanniidae. – *Journal of the Hattori Botanical Laboratory* **36**: 321–405.
- SCHUSTER, R.M. & K. DAMSHOLT. 1972. *Lophozia* (*Orthocaulis*) *hyperborea* (Schust.) Schust. in southwest Greenland. – *Lindbergia* **1**: 166–168.
- ENGEL, J.J. & R.M. SCHUSTER. 1973. On some tidal zone hepaticae from south Chile, with comments on marine dispersal. – *Bulletin of the Torrey Botanical Club* **100**: 29–35.

- ENGEL, J.J. & R.M. SCHUSTER. 1973. Austral hepaticae I. *Pigafettoa* Mass. – *The Bryologist* **76**: 511–515.
- SCHUSTER, R.M. & J.J. ENGEL. 1973. Austral hepaticae II. *Evansianthus*, a new genus of Geocalycaceae. – *The Bryologist* **76**: 516–520.
- SCHUSTER, R.M. 1973. A note on *Scapania perssonii* Schust. – *The Bryologist* **76**: 572–573.
- SCHUSTER, R.M. 1974. The hepaticae and Anthocerotae of North America east of the hundredth meridian. Vol. III. – *New York, Columbia University Press*, 1–880 pp.
- SCHUSTER, R.M. 1974. Studies on antipodal hepaticae XI. The Chaetophyllopsidaceae: their taxonomy, phylogeny and phytogeographic affinities. – *Bulletin of the National Science Museum* **17**: 163–180.
- SCHUSTER, R.M. 1974. Review of illustrations of Japanese hepaticae, by H. Inoue. – *The Bryologist* **77**: 659–660.
- ENGEL, J.J. & R.M. SCHUSTER. 1974. A monograph of the genus *Pseudocephalozia* (hepaticae). – *Journal of the Hattori Botanical Laboratory* **38**: 665–701.
- SCHUSTER, R.M. & H. INOUE. 1974. *Cololejeunea* subgen. *Chlorolejeunea* Benedix in Japan. – *Bulletin of the National Science Museum* **17**: 233–238.
- SCHUSTER, R.M. & K. DAMSHOLT. 1974. The hepaticae of west Greenland from ca. 66°N to 72°N. – *Meddelelser om Grønland, udgivne af Kommissionen for Ledelsen af de Geologiske og Geografiske Undersøgelser i Grønland* **199**: 1–373.
- INOUE, H. & R. M. SCHUSTER. 1974. The taxonomic status of the genus *Metacephalozia* Inoue. – *Bulletin of the National Science Museum* **17**: 161–162.
- SCHUSTER, R.M. & J.J. ENGEL. 1975. Austral hepaticae V. Studies on Schistochilaceae. – *Phytologia* **30**: 241–250.
- ENGEL, J.J. & R.M. SCHUSTER. 1975. Austral hepaticae III. *Stolonophora*, a new genus of Geocalycaceae. – *Fieldiana. Botany* **36**: 111–124.
- SCHUSTER, R.M. & H. INOUE. 1975. Studies on Pallaviciniaceae and Allisoniaceae (Metzgeriales) in Japan. I. Introduction and genus *Hattorianthus*, gen. nov. – *Bulletin of the National Science Museum. Series B, Botany* **1**: 101–107.
- SCHUSTER, R.M. & J.J. ENGEL. 1975. Austral hepaticae, IV. Notes on *Lophozia* subgenus *Protolophozia* Schust., with diagnosis of a new South American species. – *Journal of Bryology* **8**: 465–474.
- SCHUSTER, R.M. 1976. Plate tectonics and its bearing on the geographical origin and dispersal of angiosperms. – In: Beck, C. B. (ed.), *Origin and Early Evolution of Angiosperms*. Columbia University Press, New York: 48–138.
- SCHUSTER, R.M. 1976. Review of a taxonomic monograph of the genus *Acrolejeunea* (hepaticae), by S.R. Gradstein. – *The Bryologist* **79**(3): 380–382.
- SCHUSTER, R.M. 1977. The evolution and early diversification of the hepaticae and Anthocerotae. – In: Frey, W., H. Hurka & F. Overwinkler (eds.), *Beiträge zur Biologie der niederen Pflanzen*. Fischer Verlag, Stuttgart: 107–115.
- SCHUSTER, R.M. 1977. Review of a monograph of the genus *Bryopteris* (Swartz) Nees von Esenbeck, by R.E. Stotler & B. Crandall-Stotler. – *The Bryologist* **80**: 555–556.
- SCHUSTER, R.M. & J. ENGEL. 1977. Austral hepaticae, V. The Schistochilaceae of South America. – *Journal of the Hattori Botanical Laboratory* **42**: 273–423.
- SCHUSTER, R.M. 1978. Studies on Venezuelan hepaticae, I. – *Phytologia* **39**: 239–251.
- SCHUSTER, R.M. 1978. Studies on Venezuelan hepaticae, II. – *Phytologia* **39**: 425–432.
- SCHUSTER, R.M. & O. MARTENSSON. 1978. The genus *Cryptocolea* (Jungermanniales) new for Europe. – *Lindbergia* **4**: 203–205.
- SCHUSTER, R.M. 1979. The phylogeny of the hepaticae. – In: G. C. Clarke & J. G. Duckett (eds.), *Bryophyte Systematics*. Systematics Assoc. Special Vol. 14. Academic Press, London and New York: 41–82.
- SCHUSTER, R.M. 1979. On the persistence and dispersal of transantarctic hepaticae. – *Canadian Journal of Botany* **57**: 2179–2225.
- SCHUSTER, R.M. 1980. New combinations and taxa of hepaticae, I. – *Phytologia* **45**: 415–437.
- SCHUSTER, R.M. 1980. Studies on hepaticae, LIV–LVIII. Kurzia v. Mart. [*Microlepidozia* (Spr.) Joerg.], *Megalembidium* Schust., *Psiloclada* Mitt., *Drucella* Hodgs., and *Isolembidium* Schust. – *Journal of the Hattori Botanical Laboratory* **48**: 337–421.
- SCHUSTER, R.M. 1980. The hepaticae and Anthocerotae of North America east of the hundredth meridian. Vol. IV. – *New York, Columbia University Press*, 1–1334 pp.
- SCHUSTER, R.M. 1980. Phylogenetic studies on Jungermanniidae. II. Radulinea (Part I). – *Nova Hedwigia* **32**: 637–693.
- SCHUSTER, R.M. 1981. Austral hepaticae, VIII. Tuyamaelloideae. – *Phytologia* **47**: 301–308.
- SCHUSTER, R.M. & J.J. ENGEL. 1981. Austral hepaticae XIII. Two new genera of Geocalycaceae (Lophocoleaceae). – *Phytologia* **47**: 309–312.
- ENGEL, J.J. & R.M. SCHUSTER. 1981. Austral hepaticae XV. Brevianthaceae, fam. nov. and Brevianthus, gen. nov. from Tasmania. – *Phytologia* **47**: 317–318.
- SCHUSTER, R.M. 1981. Late Pleistocene bryological relicts in western Massachusetts. – *Rhodora* **83**: 441–448.
- SCHUSTER, R.M. 1981. Paleoecology, origin, distribution through time, and evolution of hepaticae and Anthocerotae. – In: K. J. Niklas (ed.), *Paleobotany, Paleoecology, and Evolution*. Vol. 2. Praeger, New York: 129–191.
- SCHUSTER, R.M. 1981. Studies on hepaticae, LIX. *Anastrepta* (Lindb.) Schiffn. and *Nothostrepta* Schust. – *Journal of the Hattori Botanical Laboratory* **50**: 83–94.
- SCHUSTER, R.M. 1981. Evolution and speciation in *Pellia*, with special reference to the *Pellia megaspora–endiviiifolia* complex (Metzgeriales), I. Taxonomy and distribution. – *Journal of Bryology* **11**: 411–431.
- SCHUSTER, R.M. 1982. Richard Spruce (1817–1893): a biographical sketch and appreciation. – *Nova Hedwigia* **36**: 199–208.
- SCHUSTER, R.M. 1982. Exogenous branching and its phylogenetic significance in Calobryales and Jungermanniales. – *Journal of the Hattori Botanical Laboratory* **51**: 1–50.
- SCHUSTER, R.M. 1982. Studies on hepaticae, LIX. On *Sandeothallus* Schust., gen. n. and the classification of the Metzgeriales. – *Nova Hedwigia* **36**: 1–16.
- SCHUSTER, R.M. 1982. Generic and familial endemism in the hepatic flora of Gondwanaland: origins and causes. – *Journal of the Hattori Botanical Laboratory* **52**: 3–35.
- SCHUSTER, R.M. & J.J. ENGEL. 1982. Austral hepaticae XVI. Gondwanalandic Leptoscyphoideae (Geocalycaceae). – *Lindbergia* **8**: 65–74.
- SCHUSTER, R.M. & J.J. ENGEL. 1982. Austral hepaticae XVII. *Pachyschistochila* Schust. et Engel, gen. nov. – *Phytologia* **50**: 177–180.
- ENGEL, J.J. & R.M. SCHUSTER. 1982. Austral hepaticae XV. Brevianthaceae: a monotypic family endemic to Tasmania. – *The Bryologist* **85**: 375–388.
- SCHUSTER, R.M. & W.B. SCHOFIELD. 1982. On *Dendrobazzania*, a new genus of Lepidoziaceae (Jungermanniales). – *The Bryologist* **85**: 231–238.
- SCHUSTER, R.M. 1983. Reproductive biology, dispersal mechanisms, and distribution patterns in hepaticae and Anthocerotae. – In: K. Kubitzki (ed.), *Dispersal and Distribution: An International Symposium*. Sonderbd. Naturwiss. Ver. Hamburg 7. Hamburg: 119–162.
- SCHUSTER, R.M. 1983. Notes on Nearctic hepaticae, XVI. New taxa of *Frullania* from eastern North America. – *Phytologia* **53**: 364–366.
- SCHUSTER, R.M. 1983. New Manual of Bryology. Vol. 1. – In: Schuster, R.M. (ed.), *Hattori Botanical Laboratory, Nichinan*: 1–626.
- LONGTON, R.E. & R.M. SCHUSTER. 1983. Reproductive Biology. – In: Schuster, R.M. (ed.), *New Manual of Bryology*. Vol. 1. Hattori Botanical Laboratory, Nichinan: 386–462.

- SCHUSTER, R.M. 1983. Phytogeography of the Bryophyta. – In: Schuster, R.M. (ed.). *New Manual of Bryology. Vol. 1. Hattori Botanical Laboratory, Nichinan*: 463–626.
- ENGEL, J.J. & R.M. SCHUSTER. 1983. Austral hepaticae XVIII. Studies toward a revision of *Telaranea* subg. *Neolepidozia* (Lepidoziaceae). – *Fieldiana. Botany. new series* **14**: 1–7.
- SCHUSTER, R.M. 1984. New manual of bryology. Vol. 2. – In: Schuster, R.M. (ed.). *Hattori Botanical Laboratory, Nichinan*: 627–1295.
- SCHUSTER, R.M. 1984. Comparative anatomy and morphology of the hepaticae. – In: Schuster, R.M. (ed.). *New Manual of Bryology. Vol. 2. Hattori Botanical Laboratory, Nichinan*: 760–891.
- SCHUSTER, R.M. 1984. Evolution, phylogeny and classification of the hepaticae. – In: Schuster, R.M. (ed.). *New Manual of Bryology. Vol. 2. Hattori Botanical Laboratory, Nichinan*: 892–1070.
- SCHUSTER, R.M. 1984. Morphology, phylogeny and classification of the Anthocerotae. – In: Schuster, R.M. (ed.). *New Manual of Bryology. Vol. 2. Hattori Botanical Laboratory, Nichinan*: 1071–1092.
- KRASSILOV, V.A. & R.M. SCHUSTER. 1984. Paleozoic and Mesozoic fossils. – In: Schuster, R.M. (ed.). *New Manual of Bryology. Vol. 2. Hattori Botanical Laboratory, Nichinan*: 1172–1193.
- SCHUSTER, R.M. 1984. Diagnoses of some new taxa of hepaticae. – *Phytologia* **56**: 65–74.
- ENGEL, J.J. & R.M. SCHUSTER. 1984. An overview and evaluation of the genera of Geocalycaceae subfamily Lophocoleoideae (hepaticae). – *Nova Hedwigia* **39**: 385–463.
- SCHUSTER, R.M. 1985. Austral hepaticae, XIX. Some taxa new to New Zealand and New Caledonia. – *Phytologia* **56**: 449–464.
- SCHUSTER, R.M. 1985. Studies on Porellineae: New taxa of Jubulaceae. – *Phytologia* **57**: 369–373.
- SCHUSTER, R.M. 1985. Some new taxa of hepaticae. – *Phytologia* **57**: 408–414.
- SCHUSTER, R.M. 1985. Studies on Venezuelan hepaticae III. Families Blepharostomataceae and Balantiopsidaceae. – *Nova Hedwigia* **42**: 49–79.
- SCHUSTER, R.M. & J.J. ENGEL. 1985. Austral hepaticae V (2). Temperate and subantarctic Schistochilaceae of Australasia. – *Journal of the Hattori Botanical Laboratory* **58**: 255–539.
- SCHUSTER, R.M. 1986. On the status of *Cephalozia macrantha* Kaal. & Nichols. and *C. patagonica* Fulford. – *Lindbergia* **12**: 1–4.
- SCHUSTER, R.M. 1986. *Gymnocolea borealis* (Frisvoll & Moen) Schust. [*Lophozia (Leiocolea) borealis* Frisvoll & Moen] in North America. – *Lindbergia* **12**: 5–8.
- SCHUSTER, R.M. 1987. On *Aureolejeunea* Schust. and *Brachiolejeunea paramicola* Herzog. – *Phytologia* **61**: 445–447.
- SCHUSTER, R.M. & J.J. ENGEL. 1987. Austral hepaticae XX. New species of *Hygrolembidium* (Lepidoziaceae). – *Phytologia* **62**: 9–12.
- SCHUSTER, R.M. & J.J. ENGEL. 1987. A monograph of Lepidoziaceae subfam. Lembidioideae (hepaticae). – *Journal of the Hattori Botanical Laboratory* **63**: 247–350.
- SCHUSTER, R.M. & K. DAMSHOLT. 1987. Some new taxa of Jungermanniales. – *Phytologia* **63**: 325–328.
- SCHUSTER, R.M. 1987. Studies on Metzgeriales: I. North American Aneuraceae. – *Journal of the Hattori Botanical Laboratory* **62**: 299–329.
- SCHUSTER, R.M. 1987. Venezuelan hepaticae IV. *Amphilejeunea* Schust. and *Aureolejeunea* Schust. – *Nova Hedwigia* **44**: 1–23.
- SCHUSTER, R.M. 1987. Preliminary studies on Anthocerotae. – *Phytologia* **63**: 193–201.
- SCHUSTER, R.M. 1987. Phylogenetic studies on Jungermanniidae. II. Mastigophoraceae and Chaetophyllopsiaceae. – *Memoirs of the New York Botanical Garden* **45**: 733–748.
- SCHUSTER, R.M. 1988. The hepaticae of south Greenland. – *Beihefte zur Nova Hedwigia* **92**: 1–255.
- SCHUSTER, R.M. 1988. The aims and achievements of bryophyte taxonomists. – *Journal of the Linnean Society. Botany* **98**: 185–202.
- SCHUSTER, R.M. 1988. Ecology, reproductive biology and dispersal of hepaticae in the tropics. – *Journal of the Hattori Botanical Laboratory* **64**: 237–269.
- ENGEL, J. & R.M. SCHUSTER. 1988. Studies of New Zealand hepaticae. 1–6. – *Brittonia* **40**: 200–207.
- SCHUSTER, R.M. 1989. Studies on the hepatic flora of the Prince Edward Islands. I. Aneuraceae. – *Journal of the Hattori Botanical Laboratory* **67**: 59–108.
- SCHUSTER, R.M. & J.A. JANSSENS. 1989. On *Diettertia*, an isolated Mesozoic member of the Jungermanniales. – *Review of Palaeobotany and Palynology* **57**: 277–287.
- SCHUSTER, R.M. 1990. Origins of neotropical leafy hepaticae. – *Tropical Bryology* **2**: 239–264.
- SCHUSTER, R.M. 1991. On neotenic species of *Radula*. – *Journal of the Hattori Botanical Laboratory* **70**: 51–62.
- SCHUSTER, R.M. 1991. Diagnoses of new taxa of hepaticae. I. Jungermanniidae. – *Journal of the Hattori Botanical Laboratory* **70**: 143–150.
- SCHUSTER, R.M. 1991. Studies on Venezuelan hepaticae V. On *Pseudocephaloziella* Schust. (Jungermanniaceae subf. Lophozioideae). – *Nova Hedwigia* **53**: 331–339.
- SCHUSTER, R.M. 1992. Studies on Marchantiales, I–III. – *Journal of the Hattori Botanical Laboratory* **71**: 267–287.
- SCHUSTER, R.M. 1992. The hepaticae and Anthocerotae of North America. Vol. V. – *Chicago, Field Museum*, 1–854 pp.
- SCHUSTER, R.M. 1992. The hepaticae and Anthocerotae of North America. Vol. VI. – *Chicago, Field Museum*, 1–937 pp.
- SCHUSTER, R.M. 1992. On *Megaceros aenigmaticus* Schust. – *The Bryologist* **95**: 305–315.
- SCHUSTER, R.M. 1992. The oil-bodies of the hepaticae. I. Introduction. – *Journal of the Hattori Botanical Laboratory* **72**: 151–162.
- SCHUSTER, R.M. 1992. The oil-bodies of the hepaticae. II. Lejeuneaceae. – *Journal of the Hattori Botanical Laboratory* **72**: 163–359.
- SCHUSTER, R.M. & C. GIANCOTTI. 1993. On *Vitalianthus* Schust. & Giancotti, a new genus of Lejeuneaceae. – *Nova Hedwigia* **57**: 445–456.
- SCHUSTER, R.M. 1993. Studies on hepaticae, LXII–LXIV. Lepidoziaceae subf. Zoopsidoideae (1). – *Nova Hedwigia* **56**: 35–59.
- SCHUSTER, R.M. 1993. On *Cephalozia pachycaulis* sp. nov. and the perimeters of *Cephalozia*. – *The Bryologist* **96**: 619–625.
- SCHUSTER, R.M. 1994. Studies on Metzgeriales. III. The classification of the Fossombroniaceae and on *Austrofossombronia* Schust., gen. n. – *Hikobia* **11**: 439–449.
- SCHUSTER, R.M. 1994. Studies on Lejeuneaceae, I. Preliminary studies on new genera of Lejeuneaceae. – *Journal of the Hattori Botanical Laboratory* **75**: 211–235.
- ENGEL, J. & R.M. SCHUSTER. 1994. Studies of New Zealand hepaticae. 7. The status of *Steereomitrium*. – *The Bryologist* **97**: 63–66.
- SCHUSTER, R.M. 1994. Review of paleobotany and the evolution of plants. Second Edition, by W.N. Stewart & G.W. Rothwell. – *The Bryologist* **97**: 463–464.
- SCHUSTER, R.M. 1995. Studies on Cephalozioleaceae III. On *Cephalomitrium* Schust., gen. n. – *Nova Hedwigia* **61**: 547–559.
- SCHUSTER, R.M. 1995. Notes on Nearctic hepaticae. XX. On *Schofieldia* and evolution in the Cephalozioleaceae. – *Fragmenta Floristica et Geobotanica* **40**: 39–46.
- SCHUSTER, R.M. 1995. Venezuelan hepaticae VI. On *Platycaulis* Schust. (Jungermanniales). – *Nova Hedwigia* **61**: 391–396.
- SCHUSTER, R.M. & N. KONSTANTINOVA. 1995. Studies on Treubiaceae, I. On *Apotreubia* Hatt. et al. and *A. hortonae* Schust. & Konstantinova, sp. n. – *Journal of the Hattori Botanical Laboratory* **78**: 41–61.
- SCHUSTER, R.M. 1995. The hepaticae of Prince Edward Islands. II. On *Gymnocoleopsis* (Schust.) Schust., *Lophozia cylindrififormis* (Mitt.) Steph. and the subgeneric classification of the genus *Lophozia* Dumort. – *Journal of the Hattori Botanical Laboratory* **78**: 119–135.

- SCHUSTER, R.M. 1995. Phylogenetic and taxonomic studies on Jungermanniidae, III. Calypogeiaceae. – *Fragmenta Floristica et Geobotanica* **40**: 825–888.
- SCHUSTER, R.M. & A. SCHAFFER–VERWIMP. 1995. On *Pluvianthus* (Lejeuneaceae: Lejeuneoideae). – *Nova Hedwigia* **60**: 59–72.
- SCHUSTER, R.M. 1995. On a new species of *Gymnomitrium*, *G. mucroperum* Schust., sp. n. – *The Bryologist* **98**: 242–245.
- SCHUSTER, R.M. 1995. Notes on Nearctic hepaticae, XVII. *Lophozia decolorans*, new to North America and the subgenus *Isopaches*. – *The Bryologist* **98**: 246–250.
- SCHUSTER, R.M. 1996. Studies on Cephalozellaceae IV. On New Zealand taxa. – *Nova Hedwigia* **63**: 1–61.
- SCHUSTER, R.M. 1996. Studies on Lejeuneaceae, II. Neotropical taxa of *Drepanolejeunea* (Spr.) Schiffn. – *Nova Hedwigia* **62**: 1–46.
- SCHUSTER, R.M. & J.J. ENGEL. 1996. Austral hepaticae. XXI. *Paracromastigum fiordlandiae* (sp. nov.) and the delimitation of *Paracromastigum* and *Hyalolepidozia* (Lepidoziaceae). – *Brittonia* **48**: 165–173.
- SCHUSTER, R.M. 1996. Venezuelan hepaticae VI. On *Lophonardia* Schust. – *Nova Hedwigia* **62**: 437–442.
- SCHUSTER, R.M. 1996. Studies on antipodal hepaticae. XII. Gymnomitriaceae. – *Journal of the Hattori Botanical Laboratory* **80**: 1–147.
- SCHUSTER, R.M. 1996. On *Jubulopsis* Schust. (Jungermanniales: Jubulopsidaceae fam. nov.) and its relationships. – *Journal of Bryology* **19**: 297–310.
- SCHUSTER, R.M. & N. KONSTANTINOVA. 1996. Studies on the distribution of critical arctic/subarctic hepaticae with special reference to taxa found in Russia. – *Lindbergia* **21**: 26–48.
- SCHUSTER, R.M. 1996. On *Olgantha* Schust., gen. n. Isophylly and evolution of Jungermanniales. – *Nova Hedwigia* **63**: 529–543.
- SCHUSTER, R.M. 1997. On *Bragginsella*, a new genus of Jungermanniales from New Zealand. – *The Bryologist* **100**: 362–367.
- SCHUSTER, R.M. 1997. On *Campanocolea* Schust. and asexual reproduction in the Geocalycaceae. – *Journal of the Hattori Botanical Laboratory* **82**: 253–259.
- SCHUSTER, R.M. & J.J. ENGEL. 1997. Austral hepaticae XXIV. A revision of *Isotachis* Mitt. (Balantiopsaceae: Isotachidoideae) in New Zealand. – *Journal of the Hattori Botanical Laboratory* **83**: 187–227.
- SCHUSTER, R.M. 1997. On a new, microphyllous New Caledonian *Acromastigum* (Lepidoziaceae). – *Nova Hedwigia* **64**: 613–620.
- SCHUSTER, R.M. 1997. On *Takakia* and the phylogenetic relationships of the Takakiales. – *Nova Hedwigia* **64**: 681–310.
- SCHUSTER, R.M. 1997. On *Anastrophyllum stellatum* Schust. (Jungermanniaceae, Lophozioideae). – *Journal of the Hattori Botanical Laboratory* **83**: 229–235.
- GLENNY, D., J. BRAGGINS & R.M. SCHUSTER. 1997. *Zoopsis nitida* (hepaticae: Lepidoziaceae), a new species from New Zealand. – *Journal of Bryology* **19**: 775–780.
- SCHUSTER, R.M. 1998. On *Lejeunea* (*Papillolejeunea*) *pocsii* Schust., sp. n. of New Zealand. – *Journal of the Hattori Botanical Laboratory* **85**: 83–87.
- SCHUSTER, R.M. 1998. Venezuelan hepaticae VII. *Leptoscyphopsis* Schust., a genus seemingly intermediate between Geocalycaceae and Plagiogchilaceae (Jungermanniales). – *Journal of the Hattori Botanical Laboratory* **85**: 89–94.
- SCHUSTER, R.M. 1998. On the genus *Scaphophyllum* (Jungermanniaceae). – *The Bryologist* **101**: 428–434.
- SCHUSTER, R.M. 1999. Studies on hepaticae, LXV. Lepidoziaceae subfamily Zoopsidoideae (2): *Zoopsis*. – *Nova Hedwigia* **68**: 1–63.
- SCHUSTER, R.M. 1999. Studies on hepaticae LXVI. Lepidoziaceae subfamily Zoopsidoideae (3): *Zoopsidella*. – *Nova Hedwigia* **69**: 101–149.
- SCHUSTER, R.M. 1999. Studies on hepaticae, LXVII–LXVIII. Lepidoziaceae subfamily Zoopsidoideae (4): *Monodactylopsis* and *Pteropsiella*. – *Nova Hedwigia* **69**: 517–540.
- SCHUSTER, R.M. 1999. Studies on Jungermanniidae. IV. On Scapaniaceae, Blepharidophyllaceae and Delavayellaceae. – *Journal of Bryology* **21**: 123–132.
- SCHUSTER, R.M. 1999. *Verdoornia* and the phylogeny of the Metzgeriales. – *Journal of the Hattori Botanical Laboratory* **86**: 71–87.
- SCHUSTER, R.M. 1999. *Harpalejeunea* (Spr.) Schiffn. I. Studies on a new Andean species of *Harpalejeunea*. – *Journal of the Hattori Botanical Laboratory* **87**: 287–294.
- SCHUSTER, R.M. 1999. On *Neogrollea* E. A. Hodgs. (Lepidoziaceae) and the phylogeography of the Lepidoziaceae. – *Hausknechtia* **9**: 333–338.
- SCHUSTER, R.M. 2000. On the genus *Rhodoplagiochila* Schust. (Plagiogchilaceae). – *Nova Hedwigia* **71**: 395–403.
- SCHUSTER, R.M. 2000. Austral hepaticae. Part I. – *Beihefte zur Nova Hedwigia* **118**: 1–524.
- SCHUSTER, R.M. 2000. Studies on Lejeuneaceae, II. *Rectolejeunea* Evs. emend. Schust. (Lejeuneoideae). – *Journal of the Hattori Botanical Laboratory* **89**: 113–150.
- SCHUSTER, R.M. 2000. Studies on Lejeuneaceae, III. Revisionary studies on *Stenolejeunea* Schust. – *Journal of the Hattori Botanical Laboratory* **89**: 151–171.
- SCHUSTER, R.M. 2001. Studies on Lejeuneaceae, IV. On the circumscription and subdivision of the subfamily Lejeuneoideae. – *Journal of the Hattori Botanical Laboratory* **91**: 137–172.
- SCHUSTER, R.M. 2001. Revisionary studies on austral Acrobolbaceae, I. – *Journal of the Hattori Botanical Laboratory* **90**: 97–166.
- SCHUSTER, R.M. 2001. On *Amphilophocolea* Schust. and *Cyanolophocolea* (Schust.) Schust., new austral genera of Lophocoleoideae (Geocalycaceae). – *Nova Hedwigia* **72**: 91–104.
- SCHUSTER, R.M. 2001. Studies on hepaticae LXI. Trichocoleaceae. – *Nova Hedwigia* **73**: 461–486.
- ENGEL, J. & R.M. SCHUSTER. 2001. Austral hepaticae. 32. A revision of the genus *Lepidozia* (hepaticae) for New Zealand. – *Fieldiana. Botany. new series* **42**: 1–107.
- SCHUSTER, R.M. 2002. Revisionary studies of the Chandonanthoideae (Jungermanniales, Jungermanniaceae). – *Nova Hedwigia* **74**: 465–496.
- SCHUSTER, R.M. 2002. Austral hepaticae. Part II. – *Beihefte zur Nova Hedwigia* **119**: 1–606.
- SCHUSTER, R.M. 2006. Studies on Lejeuneaceae. V. *Leucolejeunea* and allies. – *Journal of the Hattori Botanical Laboratory* **100**: 361–406.
- HENDRY, T.A., B. WANG, Y. YANG, E.C. DAVIS, J.E. BRAGGINS, R.M. SCHUSTER & Y–L QIU. 2007. Evaluating phylogenetic positions of four liverworts from New Zealand, *Neogrollea notabilis*, *Jackiella curvata*, *Goebelobryum unguiculatum* and *Herzogianthus vaginatus*, using three chloroplast genes. – *The Bryologist* **110**: 738–751.
- SCHUSTER, R.M. 2021. Austral hepaticae. Part III. – *Beihefte zur Nova Hedwigia* **120**: 1–721.

Supplementary Material: Hepatic taxa described by R.M. Schuster
https://kmkjournals.com/upload/PDF/Arctoia/30/Arctoia30_126_137_SM1.pdf