Ann. Naturhist. Mus. Wien, B	124	5–17	Wien, März 2022

Weaving a flying carpet – Ulrike Aspöck, the Natural History Museum in Vienna and the Neuropterida

A laudation on the occasion of her 80th birthday

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Fig. 1: Ulrike Aspöck in the Natural History Museum Vienna, October 2021; photo F. Zachos.

Zusammenfassung

Ulrike Aspöck, eine international anerkannte Zoologin, ist am Naturhistorischen Museum Wien – NHMW seit bald fünf Jahrzehnten Stolz und Stütze der Wissenschaft. Entomologisch bestens ausgebildet, fachlich international vernetzt, kritisch im Geiste und unternehmungslustig in der Sache, hat sie sich unschätzbare Verdienste um das Museum und ihr Fachgebiet erworben. Ulrike Aspöck ist eine Expertin auf dem Gebiet der Morphologie, Systematik, Phylogenetik und Tiergeographie der Neuropterida, mit Fokus auf die tiergeographisch spannenden Raphidioptera, die Kamelhalsfliegen. Die beeindruckende Ernte zahlreicher herausfordernder Sammelreisen, akribischer Arbeit am Mikroskop, im Labor und in der Sammlung sind enorme Fortschritte der Kenntnis um diese Organismen, die in mehr als 320 Publikationen ihren

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Niederschlag fanden, sowie wertvolle Zuwächse der Sammlungsbestände. Darüber hinaus hat Ulrike Aspöck mit Zielstrebigkeit und Charme zahlreiche Initiativen ergriffen und mitgetragen, die der Sichtbarkeit der österreichischen Zoologie zugutegekommen sind.

Ulrike Aspöck war schon als Kind naturinteressiert, als klassische Naturforscherin sieht sie sich selbst dennoch nicht. Mehr die Abenteuerlust und die Neugier haben sie angetrieben, Biologie zu studieren. „Ihre“ Gruppe, die Neuropterida hat sie gewissermaßen geheiratet. Horst Aspöck, ihr späterer Ehemann, hatte ihr die Neuropteren und Raphidiopteren nähergebracht. Ulrike vollendete ihre Dissertation über die Raphidiopteren der Nearktis im Jahr 1974 an der Universität Wien. An dieser Universität ist Ulrike Aspöck seit 1995 auch als Dozentin und seit 2001 als Professorin tätig.

Ihre erste Begegnung mit dem Naturhistorischen Museum war gleichzeitig auch ihr erstes privates Rendezvous mit Horst Aspöck und fand just unter dem Fenster ihres heutigen Arbeitszimmers am NHM statt. Ulrike studierte als Volontärin die Neuropteren in der Sammlung des Museums mit Unterstützung von Max Beier, dem damaligen Direktor der Zoologischen Abteilung. Hier lernte sie auch weitere Kollegen im musealen Netzwerk kennen, wie die Kuratoren Friedrich Kasy und Alfred Kaltenbach. Schon im Frühjahr 1963 ergaben sich Kontakte mit Herbert Hölzel durch Horst Aspöck. Auf der jährlich stattfindenden international besuchten Entomologentagung in Linz begegnete sie der Malerin und Sammlerin Eva Vartian und den Autodidakten Franz Ressel und Hubert Rausch, deren Engagement die Palette der Studienobjekte quantitativ und geographisch erweiterte. Bereits 1982 hatte Ulrike Aspöck eine temporäre Stelle in der Dipterensammlung des Museums inne. Nach dieser Anstellung blieb sie dem Museum als assoziierte Wissenschaftlerin verbunden, bis sich mit der Pensionierung von Alfred Kaltenbach eine Chance auf eine feste Stelle bot. 1986 trat sie die Stelle als Kuratorin der Sammlung „Insecta varia“ an. Seit ihrer Pensionierung im Jahr 2006 ist Ulrike Aspöck unvermindert als „Associate Scientist“ im NHMW tätig.

Die phylogenetische und tiergeographische Forschung an einer Tiergruppe mit weltweiter Verbreitung, erforderte neben dem Studium wissenschaftlicher Sammlungen auch das Reisen in ferne Länder. Weltoffenheit und die Fähigkeit, auch unter schwierigen äußeren Bedingungen den Mut nicht zu verlieren, ließen Ulrike Aspöck viele Expeditionen erfolgreich absolvieren. Ihre Triebfedern waren auch hier wissenschaftliche Neugierde und Abenteuerlust. Ulrike Aspöck ist in allem, was sie tut, arbeitsam und zielstrebig, ohne den Blick auf die menschlichen Seiten des Lebens zu verlieren.

Introduction

Ulrike Aspöck is an internationally recognized entomologist, who is the pride of the Natural History Museum Vienna and one of its pillars of science for almost five decades. Critical in spirit and enterprising in the matter, she has earned invaluable merits for both the Museum and her field of expertise.

Ulrike Aspöck is an outstanding expert in the field of systematics, morphology, phylogenetics and biogeography of Neuropterida, with a focus on the zoogeographically relict and fascinating Raphidioptera. The impressive harvest of her expeditions and collecting trips, meticulous work at the microscope, as well as analyses and publications has tremendously increased the knowledge on these taxonomic groups. This is mirrored in more than 320 publications as well as an important growth of the collection at the Museum. In parallel, with determination and charm, she has undertaken and supported numerous initiatives that have benefited the visibility of the entire field of zoology in Austria.

To reach such an outstanding position in a scientific discipline requires scientific curiosity, sense of observation, a thirst for adventure, but also perseverance and diligence along with outstanding communication skills. Ulrike Aspöck has also conveyed these qualities during university teaching, being a lecturer and professor for many years – and continues to do so.

Fig. 2: "Fachgespräche" of the Austrian Entomological Society (ÖEG) in 1979, at the University Innsbruck, from left to right: Heinz Janetschek, Ulrike Aspöck, Horst Aspöck; photo E. Hüttinger, photoarchive H. & U. Aspöck.

On the occasion of Ulrike Aspöck's 80th birthday, I would like to dedicate this contribution to outline key events in her career and describe some aspects of her personality, mostly focusing on Ulrike's connection to the Natural History Museum, her passion for scientific research, and radiant international network.

"I got the Neuropterida by marriage"

Ulrike Aspöck was already interested in nature as a child, and she spent hours fascinated watching ant trails, dreaming of expeditions to distant lands. In her later career as a zoologist, she spent a large amount of time studying the morphology of insects, many of which she had collected herself during arduous expeditions. Nevertheless, she does not consider herself a classical naturalist. "It was more the desire for adventure and curiosity that drove me." And how did she come to study the neuropterans, the net-winged insects? A formative childhood experience? Aesthetic appeal? No, she says with a smile, "I married the neuropterans! And I fell in love with them, just like I did with Horst Aspöck."

Ulrike was born as the daughter of Johann (1915–2003) and Rosa Pirklbauer (1919–2012) on 12 July 1941 in Linz and grew up at different places in Austria. Her childhood was shaped by her father's frequent career changes (he was a highly esteemed engineer with pronounced but unwelcomed left-wing political views) and the associated changes

Fig. 3: Get-together in the apartment of the Aspöcks on the occasion of the conferment of Horst Aspöck's professorship, November 1977: Ulrike Aspöck, Max Beier; photoarchive H. & U. Aspöck.

of residence. Ulrike had started her studies on zoology (and botany) in 1960/61 at the University of Innsbruck. There, she received an excellent entomological, zoological and botanical training from Heinz Janetschek (1913–1997), Otto Steinböck (1893–1963), Hannes An der Laan (1909–1982), Helmut Gams (1893–1976) and others. This also coincided with her first encounter with her future life-partner Horst Aspöck, who did his PhD in Innsbruck. After an interim semester at the University in Munich, Ulrike came to Vienna in 1963, where Horst had started a position as parasitologist at the Institute of Hygiene at the Medical Faculty of the University of Vienna (Aspöck 2012). She contacted him at his institute, and they arranged their first private "rendezvous" in front of the employees' entrance of the Natural History Museum in Vienna on the Burgring side. From today's perspective, this seems like an omen because the windows of Ulrike's office are positioned directly above this entrance.

Horst Aspöck immediately involved Ulrike in his studies on Neuropterida, for which he had too little time anyway due to his employment in parasitology, which likewise became a lifelong call for him. Ulrike made it possible for Horst to continue working on his favourite group and at the same time to follow his vocation, parasitology. Ulrike and Horst were accompanied in their studies on Neuropterida by the entomologist Herbert Hölzel (1925–2008), whose focus was on different groups of neuropterans and who was a highly acknowledged citizen-scientist. He came across Horst and Ulrike just about the same time and started a long-lasting cooperation with them. During his life, Herbert Hölzel accumulated a considerable scientific collection and in his testament he left the decision where this collection should be in future to Horst Aspöck. Following Aspöck's suggestion, Herbert Hölzel's collection was transferred to the Natural History Museum Vienna after his death in 2008. The Viennese collection already harboured hidden treasures from various expeditions, reaching back deep into the 19th century. This collection had been formerly curated and expanded by prominent entomologists like Friedrich Moritz Brauer (1832–1904). The challenge to put the taxonomic and phylogenetic work on a solid (collection) basis pushed Ulrike's step next into the Natural History Museum. Horst Aspöck, who held close contact with some of the museum's curators, arranged a meeting with the head of the zoological department at that time, the renowned entomologist Max Beier (1903–1979), who had a focus on Mantodea and pseudoscorpions, but also a broad knowledge on other groups. Ulrike Aspöck got a volunteer's working place in Beier's department in 1964 and started to study the rich collection of Neuropterida. Max Beier took such an interest in Ulrike Aspöck's work that he became actively involved in the homologization of the musculature, which Ulrike was the first scientist to study in this interesting group of insects in the context of the project addressed below. Beier was so taken with the motivation and expertise of both Aspöcks that he invited them as authors for the Raphidioptera chapter in the standard work "Handbuch der Zoologie", of which he was one of the editors (Aspöck & Aspöck 1971). At this point, Ulrike had fixed her subject and started weaving the basic pattern.

Fig. 4: Homecomer from expedition to Spain and Morocco in 1971, from left to right: Hubert Rausch, Ernst Hüttinger, little Christoph Aspöck (happy to have his parents back), Ulrike Aspöck, Horst Aspöck; photoarchive H. & U. Aspöck.

Fig. 5: At India-Kashmir expedition in 1980, from left to right: Ulrike, Christoph and Horst Aspöck; photo H. Rausch, photoarchiv H. & U. Aspöck.

Family life between microscopes and expeditions

In parallel to their strong entomological affinity, the Aspöcks had and still are enjoying (albeit limited in time) a happy private life despite their demanding work. They married in 1963 and their son Christoph was born on 6 March 1965. He was a "good and charming child" and clearly did not grow up in a traditional middle-class household, but was surrounded by microscopes, scientific samples, and specialist literature, and soon became a young participant of scientific meetings and expeditions. One of the most challenging expeditions of the Aspöcks was the one to Kashmir/India in 1980, where no raphidiopterans had been spotted even after days of searching. Suddenly, at the tired end of a frustrating day, Christoph called out: "Guys, I've got a snakefly!" It turned out to be a gravid female of a hitherto unknown species. It was described and named *Mongoloraphidia christophi* (Aspöck, Aspöck & Rausch 1982) in honour of the discoverer. Nevertheless, Christoph did not become an entomologist. He got a medical degree and now works as Head of the Department of Hygiene and Microbiology at the University Hospital St. Pölten and as long-term Associate Professor of the Karl Landsteiner University of Health Sciences. Christoph is also a highly gifted musician, playing the violoncello.

As Ulrike had already dreamed as a child, expeditions accompanied her lifelong, like the one in 1967 together with Horst and colleagues from the Museum, Gerhard Pretzmann (1929–2013) and Jürgen Gruber, as well with Alfred Radda from the University of Vienna, to Turkey, or the most recent one to Peru together with Horst Aspöck. The long list of these expeditions is well documented in samples as well as in publications (see Aspöck 2012, 2016).

While shepherding the child and investigating Raphidioptera, Ulrike had also felt a strong need to continue her studies at the university. Due to her deep prior knowledge on neuropterans, she agreed with Professor Wilhelm Kühnelt (1905–1988) from the University of Vienna on a PhD thesis about the Raphidioptera of the Nearctic. These investigations required intensive contacts with American museums. Since "the Aspöcks" – due to the number of major publications in that field – were already internationally well known, numerous scientific samples crossed the Atlantic in those days. Finally, Ulrike submitted her thesis with the title: "Die Raphidiopteren der Nearktis" (Aspöck 1974). Since that time, she had started her "globalisation project" and crossed the oceans like on a flying carpet. Up until today, Ulrike Aspöck continues to enjoy a dense global network of subject-specific co-operations and communications.

Settling down in the palace

In 1982, Ulrike had the opportunity to gain a temporary position as replacement for the curator of the Diptera collection of the Natural History Museum Vienna. Ruth Lichtenberg-Contreras, who was on maternity leave for one year, recommended her for this position, and the director of the department, Maximilian Fischer (1929–2019), agreed. After this first paid employment, Ulrike Aspöck retained a position as associated scientist in the Museum. One of her colleagues in the Museum was Friedrich Kasy (1920–1990), head of the Lepidoptera collection. He was a very active conservation

Fig. 6: Get-together in the apartment of the Aspöcks on the occasion of the conferment of Horst Aspöcks professorship, November 1977, from left to right: Eva Vartian, Ulrike Aspöck, Horst Aspöck, Asad Vartian; photo E. Hüttinger, photoarchiv H. & U. Aspöck.

biologist, entomologist, and collector, who had good contacts to the paintress, naturalist and lepidopteran collector Eva Vartian (1925–2017), whose abundant collection is now a particular treasure at this Museum. Kasy and Eva Vartian, who accompanied her husband Asad Vartian (1912–1982), a renowned carpet merchant, at his business travels, collected a huge number of insects, particularly in the Middle East (HANTSCHK et al. 2021). Out of this haul they also delivered valuable neuropterans to Ulrike and Horst Aspöck. During her work with Max Beier, Ulrike Aspöck once again crossed paths with the naturalist and very active citizen scientist Franz Ressl (1924–2011), who also had a strong interest in neuropterans and enthusiastically collected both in Austria as well as during several expeditions to the Middle East. Franz Ressl brought a rich harvest to the Aspöcks and to the Museum. His son in law, Hubert Rausch, an active and keen naturalist and neuropterologist, also became a longstanding companion of the Aspöcks as collector, taxonomist, and friend of the family. He is co-author of a remarkable number of joint publications, particularly of the monograph "Die Raphidiopteren der Erde" (Raphidioptera of the world) (ASPÖCK et al. 1991). Another important person was Alfred Kaltenbach (1920–2005), specialist in Saginae (Tettigoniidae), Mantodea and westpalearctic Saltatoria. Kaltenbach was at that time curator of the collection "Orthoptera, Rhynchota, Neuroptera and Insecta varia" in the Natural History Museum Vienna. He was an internationally esteemed scientist with a broad knowledge in zoology, but privately also with a strong devotion to cultural history, poetry and

fiction. The strong bonds between Ulrike Aspöck, herself a poet in disguise, and Alfred Kaltenbach was built on the solid grounds of mutual esteem, as literary enthusiasts, as personalities and as scientists. When Alfred Kaltenbach's retirement as curator at the museum was approaching, he recommended Ulrike Aspöck to follow him in this position. Ulrike had good cards because she had not only successfully completed her PhD but published an impressive number of scientific papers already that time. Most of them, however, were together with and first authored by Horst Aspöck, and some people may have erroneously suggested – trapped in traditional patriarchal prejudices – that it was mainly his intellectual work and Ulrike had merely contributed some ancillaries (Aspöck 2012). To counteract this, Alfred Kaltenbach encouraged Ulrike to set an example and to publish more as first author. She followed his recommendation and published some first authored papers and also a sole authored paper in the "Annalen des Naturhistorischen Museums in Wien", the scientific journal of the Museum (Aspöck 1983). Despite the strong competition from several other applicants, Ulrike Aspöck got the position and started her career as curator and fulltime researcher at the Museum in 1986. Her husband wrote about her strong ties with the Museum: "She has always felt privileged to be able to work in this wonderful house and even after her retirement (2006) she is still at the NHM Vienna almost every day" (Aspöck 2012). This is still true today. The network of the Natural History Museum Vienna has interwoven with the academic threads of the Aspöcks to an inspiring pattern.

Academic network

Despite all her private and professional burdens, Ulrike never lost her connection to the University of Vienna. With patience and persistence, driven by the need to pass on her knowledge and enthusiasm, she strove to achieve her habilitation (qualification for teaching) at the University of Vienna. Finally, she was appointed as lecturer (Dozent) with the "Venia legendi" in Zoology in 1995. In 2001 she was honoured with the title of an extraordinary University Professor. Her professorship was brilliantly celebrated in the Great Hall of the Natural History Museum, accompanied by the sounds of Christoph Aspöck's Jazz Orchestra. Music and poetry are the colourful threads in the fine fabrics of the Aspöcks.

Ulrike and Horst Aspöck are members of a bundle of scientific societies, and they both are evidently prominent members in some of them. Ulrike is a founding member of the ÖEG (Austrian Entomological Society), which was established in 1975 on the initiative of Horst Aspöck and Hans Malicky. Ulrike Aspöck's first mentor in the museum, Max Beier, became the first president of this society, and Ulrike followed him later in this position (2005–2009) as a first woman after a long line of male chairmen. More about her activities within the Austrian entomological community was recently reported in a charming article in honour of Ulrike Aspöck by Dominique Zimmermann (Zimmermann 2021).

Besides her Austrian connections, Ulrike has been active over years as a member of the scientific board of the Naturkundemuseum Alexander König in Bonn. She became acquainted with the director Clas Michael Naumann (1939–2004), who was a competent and well-known scientist like his successor Wolfang Wägele, a keen crustacean expert

Fig. 7: Fifth Dresden Meeting on Insect Phylogeny, September 2011: Ulrike Aspöck with her former students and now colleagues in the Museum in Vienna, Dominique Zimmermann and Susanne Randolf; photoarchive H. & U. Aspöck.

and recognized authority in the German community of biological research. Due to these contacts, Ulrike became more familiar with the German scientists and was invited to join the Society for Biological Systematics (GfBS), of which she became a board member (and voice of Austria) for many years. She remembers and quotes on that: "we travelled that time to the meetings by plane, appalling from today's point of view of climate crisis". This fruitful connection with the German scientific scene consequently resulted one day in the request to hold the annual meeting of this honourable society in Ulrike's p(a)lace, the Natural History Museum Vienna. Today she describes her idea to invite the GfBS as megalomaniac, because the plan did not receive the welcome she had hoped for here in Vienna. In the end, however, it turned to be a very successful congress. Together with Christoph Hörweg, Dominique Zimmermann, and some other colleagues I had the honour, to provide substantial support to the organisation of this conference. Besides a record number of participants (more than 300!) and a memorable good atmosphere, the GfBS conference 2007 in Vienna led to another accomplishment of Ulrike Aspöck. The idea of a European network of biosystematics societies was established and representatives of several European countries had a memorable meeting – in Ulrike's office. She very spontaneously decided to initiate an adequate and independent Austrian Society for systematists, which has been named NOBIS Austria (Network of Biological Systematics Austria). This spontaneous idea took concrete shape during a train ride back from a conference from Dresden to Vienna, together with Dominique Zimmermann. Dominique, the co-architect of the construction, was a student of Ulrike and is now a very active curator at the Natural History Museum Vienna and a recognized scientist. Today, NOBIS Austria is a well-established scientific association that holds annual conferences, participates in international meetings and awards prizes for the promotion of young scientists (ZIMMERMANN 2021, RANDOLF & ZIMMERMANN 2021). The successful organisation of the GfBS meeting in Vienna and the subsequent foundation of NOBIS Austria finally culminated in the "BioSyst.EU 2013 – Global systematics" in Vienna, which was hosted by NOBIS Austria and organized by a team from the Natural History Museum, headed by the palaeontologists Mathias Harzhauser and Andreas Kroh, who both followed Ulrike Aspöck as presidents of the society.

Fig. 8: China, Sichuan, Chengdu, Emeishan, 29 June 2011: On the peak of Emeishan: Ulrike Aspöck and Xingyue Liu; photoarchive H. & U. Aspöck.

Ulrike Aspöck, together with Horst, Herbert Hölzel and Johannes Gepp, founded the International Symposium on Neuropterology, which took place for the first time in 1980 in Graz. This symposium is organized every two or three years at different localities in the world. In 2022 it is planned in Brazil. Needless to say, Ulrike is invited to give a keynote lecture there. Ulrike Aspöck knows almost all the people of the neuropteran fan club, and she has cooperated with many of them, as can be seen in her impressive list of publications. During the last years, she turned her attention to new molecular methods to put her systematic theses, based on morphology and anatomy, to the test. This already started some fifteen years ago in close collaboration with the molecular geneticist Elisabeth Haring from the Vienna Museum, resulting in a number of phylogenetic studies combining classical and molecular genetic methods. Furthermore, in the frame of broad international collaborations, remarkable works have emerged. Thanks to their good contacts with scientists from China, the Aspöcks managed to combine newly emerging technologies of next generation sequencing with classic morphology as well. Especially collaboration and joint field trips with the group around Xingyue Liu, Beijing, who established a scientific centre of neuropterology in China, is long lasting and fruitful. This is a new milestone for the future of this science. Moreover, successful and promising co-operations with researchers from Latin America such as Adrian Ardila-Camacho, Colombia, Atilano Contreras-Ramos, Mexico, Renato Machado, Brazil, and Caleb Califre Martins, Brazil, are encouraging and still ongoing – promising a rich harvest.

One outstanding achievement of the Aspöcks is their contribution to a global co-operation on the phylogenomics and evolution of insects, which was established by Bernhard Misof from Bonn, who assembled 101 experts within the international project 1Kite. The major

Fig. 9: Seminar "Phylogenie kontroversiell" at the Naturhistorisches Museum Wien, Apres in the Cafeteria of the NHMW, from left to right: Helmut Sattmann, Elisabeth Haring, Friedrich Ehrendorfer, Ulrike Aspöck; photo K. Kracher, NHMW.

Fig. 10: Seminar "Phylogenie kontroversiell" at the Naturhistorisches Museum Wien, from left to right: Ulrike Aspöck, Günther Pass, Alessandro Minelli, Hannes Paulus; photo NHMW.

Fig. 11: Research stay in Peru, Puerto Inca, Huánuco, 21 September 2019: Horst and Ulrike Aspöck in the primary forest Panguana; photoarchive H. & U. Aspöck.

outcome of this pioneering venture was finally published in one of the top journals, Science (Misof et al. 2014).

At her home institute, the Natural History Museum Vienna, Ulrike has always sought contacts with colleagues and actively supported numerous initiatives. One of these, and in which I had the pleasure to co-organize, is a series of seminars called "Phylogenie kontroversiell", now running for 18 years and currently continued together with colleagues from the museum, particularly Frank Zachos, head of the Mammal Collection. These seminars address most of the burning topics on phylogenetic and biosystematic research from microbes to vertebrates and gathered experts ranging from dedicated "locals" of the museum and from other Austrian institutions to international experts. Thanks to Ulrike Aspöck's national and international connections, a tremendous enrichment of scientific inputs and international visibility for the museum has been achieved. Her numerous activities and interest in several fields of biology as well as her outstanding personality and charm yield the carpet she has woven – a decorative and intellectual radiance!

Conclusion and scientific inheritance

As we congratulate Ulrike Aspöck here on her 80th birthday, let us conclude by saying that her love of adventure helped her overcome boundaries, whether they were of geographic nature, cultural, or even opinion. Her ability to reach out to others and take them seriously helped her surmount the challenge of travel as well as to connect with scientists at all levels and in many countries. Her willingness to share her experiences helped many young researchers to succeed on their own. Ulrike Aspöck was and continues to be in active contact with students and experts in Europe, Asia and America. Countries whose neuropteran fauna is still largely unexplored benefit from her equally extensive knowledge and published work. Ulrike Aspöck is a great example for someone who has built up and strengthened an international scientific network. She has thus interwoven her personal threads with the network of the museums, scientific societies, universities, and outstanding individuals into an everlasting shimmering fabric that transcends time and distances, just like a magical flying carpet that will continue to carry knowledge and inspiration for the next generations.

References

ASPÖCK H., 2012: Ulrike Aspöck zum 70. Geburtstag: ein wissenschaftlicher Blumenstrauß. – Entomologica Austriaca 19: 101–260.

ASPÖCK H., 2016: Dokumente zum wissenschaftlichen Opus von Ulrike Aspöck für die Periode 2011–2016 anlässlich ihres 75. Geburtstags. – Linzer biologische Beiträge 48 (2): 1011–1079.

ASPÖCK H., ASPÖCK U. & RAUSCH H., 1982: Der gegenwärtige Stand der Erforschung der Raphidiopteren von Indien, Pakistan und Afghanistan (Neuropteroidea). – Zeitschrift der Arbeitsgemeinschaft Österreichischer Entomologen 34: 2–18.

ASPÖCK H., ASPÖCK U. & RAUSCH H., 1991: Die Raphidiopteren der Erde. Eine monographische Darstellung der Systematik, Taxonomie, Biologie, Ökologie und Chorologie der rezenten Raphidiopteren der Erde, mit einer zusammenfassenden Übersicht der fossilen Raphidiopteren (Insecta: Neuropteroidea). Mit 36 Bestimmungsschlüsseln, 15 Tabellen, ca. 3100 Abbildungen und ca. 200 Verbreitungskarten. – Goecke & Evers, Krefeld. 2 Bände: 730 pp; 550 pp.

ASPÖCK U., 1974: Die Raphidiopteren der Nearktis (Insecta, Neuropteroidea). – Dissertation, Universität Wien, 2 Bände; Textband: 238 pp, Abbildungsband: 771 Abb., 20 Karten.

ASPÖCK U., 1983: Das Genus Berotha Walker (Neuropteroidea: Planipennia: Berothidae). – Annalen des Naturhistorischen Museums in Wien B, 84: 463–478.

HANTSCHK A., LÖDL M. & GAAL-HASZLER S., 2021: Wie der Forscher Friedrich Kasy die Natur freikaufte. – Naturhistorisches Sommer 2021: 4–7.

MISOF B., LIU S., MEUSEMANN K., PETERS R.S., DONATH A., MAYER C., FRANDSEN P.B., WARE J., FLOURI T., BEUTEL R.G., NIEHUIS O., PETERSEN M., IZQUIERDO-CARRASCO F., WAPPLER T., RUST J., ABERER A.J., ASPÖCK U., ASPÖCK H., BARTEL D., BLANKE A., BERGER S., BÖHM A., BUCKLEY T., CALCOTT B., CHEN J., FRIEDRICH F., FUKUI M., FUJITA M., GREVE C., GROBE P., GU S., HUANG Y., JERMIIN L.S., KAWAHARA A.Y., KROGMANN L., KUBIAK M., LANFEAR R., LETSCH H., LI Y.Y., LI Z., LI J., LU H., MACHIDA R., MASHIMO Y., KAPLI P., MCKENNA D.D., MENG G., NAKAGI Y., NAVARRETE-HEREDIA J.L., OTT M., OU Y., PASS G., PODSIADLOWSKI L., POHL H., VON REUMONT B.M., SCHÜTTE K., SEKIYA K., SHIMIZU S., SLIPINSKI A., STAMATAKIS A., SONG W., SU X., SZUCSICH N.U., TAN M., TAN X., TANG M., TANG J., TIMELTHALER G., TOMIZUKA S., TRAUTWEIN M., TONG X., UCHIFUNE T., WALZL M.G., WIEGMANN B.M., WILBRANDT J., WIPFLER B., WONG T.K.F., WU Q., WU G., XIE Y., YANG S., YANG Q., YEATES D.K., YOSHIZAWA K., ZHANG Q., ZHANG R., ZHANG W., ZHANG Y.H., ZHAO J., ZHOU C., ZHOU L., ZIESMANN T., ZOU S., LI Y.G., XU X., ZHANG Y., YANG H., WANG JI., WANG JU., KJER K.M. & ZHOU X., 2014: Phylogenomics resolves the timing and pattern of insect evolution. – Science 346 (763): 763–767. With supplements.

RANDOLF S. & ZIMMERMANN D., 2021: Die Wiener Weiberwerkstätte am Naturhistorischen Museum in Wien. – AÖE News 3: 111–113.

ZIMMERMANN D., 2021: Ulrike Aspöck zum 80. Geburtstag gewidmeter Erlustigungs-Text von ihrer Schätzerin. – AÖE News 3: 97–110.

Publications and newly described taxa from Ulrike Aspöck from 1964 until 2021 are listed in: Gusenleitner F. (2022): Univ.-Prof. Dr. Ulrike Aspöck 80 – sechzig Jahre im Dienste der Wissenschaft! – Entomologica Austriaca 29 [In press].

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Digitale Literatur/Digital Literature

Zeitschrift/Journal: Annalen des Naturhistorischen Museums in Wien

Jahr/Year: 2022

Band/Volume: 124B

Autor(en)/Author(s): Sattmann Helmut

Artikel/Article: Weaving a flying carpet – Ulrike Aspöck, the Natural History Museum in Vienna and the Neuropterida A laudation on the occasion of her 80th birthday 5-17