

# Academic portfolio

## 1. Background information

Olof Viktor Mauritz Biström

Born 24.4. 1950 in Helsingfors, Finland

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Married with M.Sc. Gun Biström, two children Anna 1976 and Fredrika 1980.

Education:

Secondary school: Nya Svenska Läroverket, Helsingfors, Finland 1970

FK 1977 University of Helsinki, Finland

FL 1979 University of Helsinki, Finland

FD 1982 University of Helsinki, Finland

Thesis: A revision of the genus *Hyphydrus* Illiger (Coleoptera, Dytiscidae). – *Acta Zoologica Fennica* 165:1-121. (Cumlaude approbatur)

Knowledge in languages: Swedish (native language), Finnish and English (fluent), German (speaking capability) and French (reading capability of literature in field of expertise).

Present position: Professor, Senior Curator, Zoological Unit of Finnish Museum of Natural History, University of Helsinki, Finland).

Military service 1970-1971.

## 2. Scientific experience and activity I

### 2.1. Scientific career

I am an experienced specialist in taxonomy and systematics of water beetles, in particular tropical diving beetles (Coleoptera, Dytiscidae) of the subfamily Hydroporinae. The basis to my career as a taxonomist was laid already in the 1960s when I was an enthusiastic amateur entomologist with particular interest in the Coleoptera fauna of Finland. After secondary school and military service I started my university studies with zoology as main discipline besides botany, chemistry and geography. Probably, due my knowledge in Coleoptera I was in 1973, soon after entering the university, appointed as a part-time technician at the entomology department of the Zoological museum in Helsinki. Since then I have been true to the museum with practically, permanent appointment in it. The department of entomology focused on taxonomy and systematics and after some time I chose Dytiscidae as a family to start to work with. I became interested in the diving beetles, a family of which there was much of unsorted material in the museum holdings. The available identification literature on the family proved, however, to be in many cases useless and accordingly, I had to check the type material, loaned from abroad, to get the specimens identified.

In 1979 I published my first revision on genus level (*Derovatellus*) as a thesis for phil. lic. degree in the Helsinki university. Three years later my doctoral thesis, a revision of the genus *Hyphydrus* with more than 100 species recognized, was approved by the university (1982). The same year as my dissertation I applied for a position as a docent (university lecturer) in zoology at the Helsinki University. From 1982 onwards I was appointed as an acting curator and a little later as an acting senior curator of the entomological department. In 1991 I was appointed as chief of the entomological department, a position with the title professor. The keeper of this position was expected to have competence of a professor and this was evaluated by three experts from abroad. Next year I was elected the director of the Zoological museum (three-year cycles) besides my position as chief of the department. Since then I ran the Zoological museum except for 1996-1997 (for more than 15 months) and three months in 1999 when I was appointed acting head of the Finnish Museum of Natural History. The directorship of the Zoological Museum ended in November 14th 2010 after which I returned to my permanent position as Chief of department, today titled Senior Curator. Starting from 1975-1976 I have treated several thousands of specimens belonging to my insect group of expertise deposited in various natural history museums of the world. In all, I have thus far published more than 80 articles dealing with the taxonomy and systematics of the Dytiscidae. More than 180 taxa on species level have thus far been described and scientifically introduced (sometimes together with other authors). Additionally, 10 taxa of higher level have been introduced. Today, I am an experienced expert on the Hydroporinae of the world, in particular of Africa and the Oriental Region. Almost all genera of Hydroporinae in Africa, South of Sahara, have been revised. Many of the revisions have been expanded to have a global coverage taking into consideration all recognized species. Concluding articles on tribal and subfamily level have also been published. My recent works have often been done in close cooperation with Professor Anders Nilsson, Umeå University, Sweden.

## 2.2. Philosophy, ethics, scientific framework

The foundation of my philosophy regarding activities in a museum and science coincides with the principles generally accepted by the international museum community. Availability of collections should be ensured for sound scientific purposes in first hand, secondly for other widely supported and well motivated purposes, as for education and exhibition. Leadership is to be fair, which is guaranteed by transparency in decision-making. Additionally, a person in leading position should be qualified with the expertise required to meet all responsibilities. No discrimination, on the basis of e.g. origin, gender, age or personal belief, is acceptable and must be avoided. Research conducted in the museum should relate to the objectives and mission of the museum and it should conform to current legal, ethical and academic practises. The interests of the museum and its staff should be considered and ensured in all strategic planning and general activity. As far as possible the activities in the museum should be in concordance with the strategy of the University of Helsinki. In any research conducted the museum should strive to meet the highest expectations and standards also on an international level.

## 2.3. Important publications

A list of all publications is given in an appendix, sorted up to designed topics.

## 3. Scientific experience and activity II

### 3.1. Awards received

- Risto Tuomikoski award in biological taxonomy in 1999, Finland (FMK 30.000:-)

### 3.2. Experience in the scientific community (selected)

- member of the panel of FORMAS (Forskningsrådet för miljö, areella näringar och samhällsbyggande i Sverige); evaluation of national economic support for biological collections in Sweden 2002
- member of the Scientific Committee of STI (Swedish Taxonomic Initiative) 2003-2008 (in all, almost 200 applications processed)
- member of the Belgian scientific panel in Synthesys cooperation, European Union in 2004-2005
- member of the panel of FORMAS (Forskningsrådet för miljö, areella näringar och samhällsbyggande i Sverige); evaluation of 95 applications on economic support for projects on "sustainable administration of biodiversity" 2007
- member of the evaluation panel of Artsprosjektet (Species-project) in Norway 2009-2014 (in all some 50 applications evaluated thus far)

### 3.2.1. Networks (selected)

- coordinator in Finland: EURO-loop (network for taxonomic cooperation with developing countries) 1994
- Finnish delegate in the working-group "Nature and Outdoor life", The Nordic Council 1994-2002.
- coordinator of the NORDPLUS network for "teaching entomology in Nordic countries" 1995-1997
- coordinator of the CETAF (Consortium of European Taxonomic Facilities, with 36 member-institutes from 17 European countries) network for Finnish Museum of Natural History 2007- . Responsible for the arrangements of the CETAF 26<sup>th</sup> General Meeting in Helsinki 2009.

### 3.2.2. Projects

#### 1. Coleoptera fauna in forests – faunal composition, indicators and endangered species

The project started in the end of the 1970:s and continued about 20 years. A lot of field work was conducted in various forests in Finland. Especially much effort was put in the investigation of the arthropod fauna of the Pyhähäkki National Park in central part of the lake-area of Finland. These studies yielded in a lot of faunistic information on the ground-living insects as well as data on the fauna in dead trees and decaying wood (see list of publications). Due to lack of time this project is at least at present in an inactive phase.

#### 2. The subfamily Hydroporinae (Coleoptera, Dytiscidae) – taxonomy and systematics

The protection of tropical environments in their original state is one of the big challenges for humanity today. Because of the disappearance of these environments due to various reasons a considerable part of the world-biodiversity is under severe threat; many thus far undescribed insect species will become extinct before its detection.

My project started in the mid 1970:s and it is, in general a taxonomic revision of a still in part quite insufficiently studied beetle subfamily of the diving beetles, the Hydroporinae. All available material has been studied combined with sampling of fresh material for study. All literature has been checked. Besides production of modern taxonomic revisions and reviews of the taxa, an important goal of the project is to produce a new classification of the Hydroporinae subfamily. For relevant publications, see enclosed list of publications. The project has been completed regarding the African continent (South of Sahara), and accordingly we have now a reasonably good knowledge of its Hydroporinae fauna. The project is continued, targeting on another dytiscid subfamily and genus, namely the genus *Laccophilus* (Laccophilinae), which is under preparation.

#### 3. The aquatic leaf beetle genus *Macrolea* (Coleoptera, Chrysomelidae) – taxonomy and biogeography

*Macrolea* is an enigmatic genus of the terrestrial leaf beetle family being a true aquatic genus. It is restricted to the Palearctic region. At present four species are recognized and three of them occur in Finland. In the western Palearctic area one species, *M. pubipennis*, is thus far only recorded from the Finnish waters of the Baltic. It is therefore considered an endangered (vulnerable) species in Finland. In EU legislation the species is considered an appendix II species

of the Nature directive. Thus far the project has focused on the occurrence and distribution of *M. pubipennis* in Finland predominantly for protection and environmental planning purposes. In close cooperation with Dr. Gregor Kölsch, Hamburg University, the taxonomic status of the species has recently been examined using DNA analysis. At present the cooperation with Gregor Kölsch is deepened and there are plans to examine *Macroplea* and its species in various ecological and taxonomical circumstances.

### 3.2.3. Opponent in dissertation

- opponent (shared) in dissertation held in the department of Botany, University of Helsinki, Finland 1983

### 3.2.4. Expert in evaluation of academic competence

- expert in evaluation of docent-position (university lecturer) in Oulu University, Finland (1989)

- expert in evaluation of scientific competence for a senior curator in the Swedish Museum of Natural History ("Riksmuseet"), Stockholm, Sweden (1993)

- expert in evaluation of competence as a professor in Swedish University of Agriculture and Forestry, Uppsala, Sweden (2004)

- expert in evaluation of scientific competence of six applications for post doc ("tutkijatohtori") position in the University of Helsinki, Finland (2007)

- expert in evaluation of docent-position (university lecturer) in the University of Helsinki, Finland (2008, 2012)

### 3.2.5. Membership in scientific societies

- Entomological Society in Helsingfors-Helsinki; member 1971- , member of the board 1985-1996, 2014- and chairman 1997- 2013.

- Entomological Society in Finland; member 1973- .

- Entomological Society of Stockholm, Sweden; member 1975- , permanent member 2005- .

- Societas pro Fauna et Flora Fennica; member 1976- .

- Wiener Coleopterologen Verain, Austria; member 2001- .

### 3.3. Other matters of importance

- Editorial secretary of the journal *Memoranda Societatis pro Fauna et Flora Fennica* 1980-1988, editor 1989-1998.

- Collecting trips: Nepal (7-27.5. 1996), Tanzania (16.11.-8.12. 1996), Lesbos, Greece (5-11.6. 2005, 2-11.5. 2006, 5-15.5. 2007, 10-18.9. 2008, 5-12.5. 2009), South Africa 1-30.11. 2008.

- In all, 63 shorter (1-28 days) visits to 32 different natural history museums abroad.

#### 3.3.1. Lectures in scientific meetings abroad (selected examples)

- I. European Congress of Entomology, Reading, UK, 1978: "Coleoptera as indicator species for forests in original state".

- XVIII. International Congress of Entomology, Vancouver, Canada, 1988: "Characterization of the Bidessini (Coleoptera, Dytiscidae)".

- XI. International Congress of Arachnology, Turku, Finland, 1989: "Boreal forest spiders in relation to stand age, forest type and human impact: results from a primeval forest" (together with Dr. Rauno Väisänen).

- XIX. International Congress of Entomology, Beijing, China, 1992: "The genus *Hydrovatus* Motschulsky (Coleoptera, Dytiscidae) – its phylogeny and zoogeography".

- IV. International Conference on Classification, Phylogeny and Natural History of Hydradephaga (Coleoptera), Waleska, Georgia, USA, 1993: "Observations on the stridulation apparatus in *Hydrovatus* (Coleoptera: Dytiscidae)".

- III. International Conference on Tropical Entomology, Nairobi, Kenya, 1994: "Taxonomic revision on the African *Hydroporinae* (Coleoptera: Dytiscidae)" (poster).

- 10th Entomological Congress of the Entomological Society of Southern Africa, Grahamstown, South Africa, 1995: "Dismemberment of *Hyphyrini sensu lato*, and the introduction of a new tribe *Pachydrini* (Coleoptera, Dytiscidae)".

- XX. International Congress of Entomology, Firenze, Italy, 1996: "The Hyphydrus species of the oriental and Australian zoogeographical regions (Coleoptera, Dytiscidae)".
  - XXI. The International Willi Hennig Society –meeting, Helsinki, Finland 2002: "Cladistic analysis of the genus *Peschetius* (Coleoptera, Dytiscidae)" (poster) (together with Prof. Anders Nilsson).
  - Invited lecture in Rhodes University, Biological Sciences Building, Grahamstown, South Africa, 2008: "Taxonomy of Dytiscidae in South Africa – a historical review".
- 3.3.2. Grants and funding received (selected)
- Projects on occurrence and mapping the aquatic leaf beetle *Macrolea pubipennis* in Finland:
- Espoo City, Environmental Office 1995 (10.000 FMK)
  - Espoo City, Office of Rural Planning 2001 (15.000 FMK)
  - Polar Kiinteistö Oy, Helsinki 2001 (15.000 FMK)
  - Bertel Ekegren Oy, Espoo 2002 (15.000 FMK)
  - Finnish Environment Institute 2004 (200 €)
  - Varsinais-Suomen luonnonsuojelupiiri, Turku 2005 (3.000 €)
  - Pöyry Oy, 2013 (1.900 €)
- University of Helsinki, grant for starting project 2003 "Biodiversity of Madagascar" (6.800 €) (together with Dr. Juhani Terhivuo).
- Numerous smaller grants from various sources.

#### 4. Teaching and guidance of students

My position as chief of the department of entomology at the Zoological museum to 2010 did not include duty to teach. I was, however, appointed in 1982 as a docent in zoology (university-lecturer), associated with a department (former Department of Zoology) belonging to the Faculty of Biosciences at the University of Helsinki. In this position I have between 1983-2000 given one or two lecture series on topics as "how to identify insects of Finland", "pest insects and their biology", "endangered insects in Finland" and "aquatic insects in Finland". Besides these activities, I have during the years given numerous shorter (generally two or four hours) lectures at the university on similar items, as well as served as an teacher on field courses arranged at the biological stations of Helsinki University.

Associated with the Nordplus-cooperation in teaching entomology in Nordic universities I have been a visiting teacher in Uppsala University, Sweden (Dec. 1992-Jan. 1993, and Dec. 1993-Jan. 1994) giving lectures in the basic course "Entomology II". Additionally I have arranged in association with Nordplus-cooperation two courses in Helsinki, Finland: 1. "Aquatic insects in the Nordic countries – the fauna and its composition, ecology and ethological specialities" 16-27.9. 1996, and 2. "Systematics in entomology: from molecules to biogeography" 24.8.-4.9. 1998.

As a volunteer I have given lectures for students in the lecture-course-complex of Finnish Museum of Natural History: "The biological collections", four hours in each year 2005, 2006 and 2008.

During my stay in South Africa in 2008 I arranged together with Dr. F. de Moor and Dr. R. Staals a two-day workshop on "Aquatic beetles in southern Africa" for students predominantly from various universities in South Africa and scientists or officials working with environmental issues in the same country.

Invited as lecturer in Tel Aviv University, Israel (2013), I led a one-week field course in faunistics and taxonomy of Dytiscidae in Israel.

Besides lectures I have been supervisor for two M.Sc. theses (1990 and 2007) at the University of Helsinki.

## 5. Administration and other activities

### 5.1. Leading university positions held:

- Chief of the Exhibition Department, Finnish Museum of Natural History (besides permanent position) 1989-1997 (21 temporary exhibitions were set up in 1988-1997).
- Chief of the Entomological Department, Zoological Museum 1991-2014 (permanent position). Title changed to Senior Curator 2014.
- Director of the Zoological Museum (three year cycles, besides permanent position) 1992-2009.
- Director of the Zoological Museum (besides permanent position) 1.1.-14.11. 2010.
- Acting director of the Finnish Museum of Natural History 5.9.1996-31.12. 1997 and 1.4.-30.6. 1999

### 5.2. Board of Administration of Finnish Museum of Natural History

- Member of the board 1991-1996 (permanent member due to position held)
- Permanent drafting official in matters related to the Zoological Museum 1997-2009
- Drafting official in matters related to the Zoological Museum 2010

### 5.3. Training in leadership and administration

- Leadership-training (50 hours course), University of Helsinki, in Institute of Leadership, Kirkkonummi 1996
- Participation in the training course "Leadership in expert-organisations" (Asiantuntijaorganisaation johtaminen), Helsinki 5-6.11. 2001 and 21-22.1. 2002, arranged by Finnish Museums Association (Suomen Museoliitto)

### 5.4. Leading non-university positions held:

- Member of the board of The Finnish Matriculation Examination ("Ylioppilastutkintolautakunta") (chairman for biology discipline) 1995-1997 and 1998-2000.
- Member of the Animals Committee of CITES (alternate member) 1997-1999. CITES convention activity include also position as coordinator of the Scientific authority (zoology) of Finland (Finnish Museum of Natural History) 1997-present. Finnish delegate in the meetings of the Scientific Review Group in Brussels, Belgium (4-5 meetings/year; thus far about 70 meetings attended). Member of the Finnish delegation in the CITES-convention Conference of Parties in Nairobi, Kenya (2000), Santiago, Chile (2002), Bangkok, Thailand (2004), Haag, The Netherlands (2007), and Doha, Qatar (2010), Bangkok, Thailand (2013).

### 5.5. Experience in non-university evaluation panels

Expert and member in working group on "Museum collection management" in preparing an evaluation-tool designed for museums in Finland. Ministry of Education and The National Board of Antiquities (Museovirasto), 2005: In 2006 member in panel for pilot-evaluation of three museums in Finland and in 2008 and 2009 member in panel for evaluation of one museum in Finland per each year.

### 5.6. Non-university-level teaching (selected)

Training in identification of pests in museums:

- Identification course arranged by FMNH and Finnish Museums Association, Helsinki 1993
- Lectures and demonstrations, Vantaan käsi- ja taideteollisuusoppilaitos, Vantaa 1995
- Lectures and demonstrations, Espoon-Vantaan teknillinen ammattikorkeakoulu, Muotoiluinstituutti, EVTEK, Vantaa 1999, 2000 and 2002
- Lecture, Päijät-Hämeen 31. museum seminar, Heinola 2003
- Seminar arranged by the Finnish Museums Association, Helsinki 2004
- Training course arranged by the Finnish Museums Association, Helsinki 2005
- Identification course, Kotka 2005
- Seminar arranged by the Finnish Museums Association, Kuopio 2008

- Seminar arranged by the Finnish Museums Association, Helsinki 2009
- Lecture, seminar on security in museums, arranged by Västra Nylands landskapsmuseum in Ekenäs 2009

#### 5.7. Interviews in media and press

Numerous contacts with press and other media: During -2014, 117 public interviews: TV 11; radio 30; press 76

#### 5.8. Honour

- XXX, thirty years as state official in Finland 2008