

Arachnology in Finland. 2

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Activity of Finnish arachnologists during the second half of the 20th century is presented. About thirty persons are dealt with, and a selection of their publications is given. Differences in research subjects between universities can be found: in Helsinki mainly ecology and faunistics, in Jyväskylä behaviour studies, in Oulu faunistics, and in Turku taxonomy and systematics as well as ecology and faunistics.

Introduction

The history of arachnology in Finland has been briefly described by Terhivuo (1996) and Koponen (2008, 2010). The Finnish arachnology from the times of Linnaeus until mid-1900s was presented by the author (Koponen 2007 and 2010), in Finnish and English respectively. Here I will deal with Finnish arachnologists, who have worked and published during the second half of the 20th century. About thirty persons are dealt with; some of them have published only one or two papers on spiders or other arachnids (excluding mites). They have worked mainly at four universities, i.e. Helsinki, Turku, Oulu, and Jyväskylä. The list of references includes almost 90 of their publications as a sample.

Professor Pontus Palmgren (1907–93) of Helsinki, who's well-known activity in arachnology lasted from 1932 until 1983 (Koponen 1994, Bell 2005), was included already in the previous report on arachnology in Finland (Koponen 2010), like were also Eric Laxmann (1737–96), Pehr Forsskål (1732–63), Alexander von Nordmann (1803–66), Fredrik Wilhelm Mäklin (1821–83), Karl Evald Odenwall (1873–1965), Toivo Henrik Järvi (1877–1960) and Rolf Krogerus (1882–1966).

University of Helsinki

Walter Hackman (1916–2001) was during his later years a dipterologist of high repute at the Zoological Museum (Silfverberg 2001), but earlier he studied also spiders. His doctoral thesis was on chromosomes of spiders (Hackman 1948), and he published several papers on faunistics and ecology of Finnish spiders in the 1950s (e.g. Hackman 1951, 1957), and also surveys of the spiders (Hackman 1954) and harvestmen (Hackman 1956) of Newfoundland, Canada. The spider fauna of Newfoundland (Hackman 1954) is a pioneer work, including taxonomic comments and descriptions of new linyphiid species, of which five names are still valid.

Jouko Kaisila (1917–84), who was a lepidopterist at the Zoological Museum, studied also pseudoscorpions (Suomalainen 1984). He made a revision of the Finnish pseudoscorpion fauna (Kaisila 1949) and described later two new species, from Newfoundland (Kaisila 1964) and Canary Islands (Kaisila 1966).

Veikko Huhta has investigated spiders, mites and some other soil animal groups, first in Helsinki and later at the University of Jyväskylä. His studies on ecology of forest spiders and effects of human activity, such as clear-cutting and pre-



Walter Hackman
(*Entomologica Fennica* 12, 2001).



Jouko Kaisila (*Annales
Entomologici Fennici* 50, 1984).



Veikko Huhta.
Photo: S. Koponen, 2010.



Timo Pajunen (left) and Juhani Terhivuo. Photo: S. Koponen, 2007.

scribed burning, on these are well-known (e.g. Huhta 1965, 1971), in particular. He has also a paper on synanthropic spiders, including a report of the venomous *Loxosceles laeta* established in the building of Zoological Museum (Huhta 1972) — where the species has survived 40 years. Later Huhta has concentrated mainly on soil mites.

Juhani Terhivuo has published papers on synanthropic spiders in Finland, including notes on species biting man (e.g. Terhivuo 1993). He has also written a brief history of studies on terrestrial invertebrates, including spiders, in Finland (Terhivuo 1996). Terhivuo has taught arachnology during many years in the University of

Helsinki. He is working at the Zoological Museum, and the groups of his interest include also, for example, myriapods and lumbricids.

Timo Pajunen has worked actively on the spider fauna of Finland and published papers on forest spider communities and on the effect of human activity on these (e.g. Pajunen et al. 1995, Niemelä et al. 1994). He has also studied anthrochorous spiders (Pajunen, Terhivuo & Koponen 2008) and participated actively in compilation of the Finnish Red Data Book (Pajunen et al. 2010). He is recently the most active arachnologist in the Zoological Museum, University of Helsinki (i.e., the Finnish Museum of Natural History).

Olof Biström and **Rauno Väisänen**, both entomologists, have published some papers on spiders in ancient forests (Biström & Väisänen 1988, Väisänen & Biström 1990). Väisänen has also one faunistic paper (Väisänen 1983).

Kari Lagerspetz has studied *Dactylochelifer latreillei* community on seashore rocks (Lagerspetz 1953), and later as the Professor of Animal Physiology in the University of Turku, water regulation of linyphiid spiders (Lagerspetz & Jäynäs 1959).

Ritva R. Johanson (1931–2004) investigated the effect of DDT on web-building of *Araneus diadematus* (Johanson 1967, 1972).

Results of mainly a faunistic study on spiders have been published by **Heikki Wuorenrinne** (1955), **Tor-Leif Westman** (1959) and **Tarmo Perttula** (1984).

In addition, **Martta Heinäjoki** (1900–59) made the only review of the opilionid fauna of Finland. She published it already in the 1940s (Heinäjoki 1944).

University of Turku

Pekka T. Lehtinen worked as the Head Curator in the Zoological Museum, University of Turku for a long period until his retirement in 1999, and he is still active. The doctoral thesis of P.T. Lehtinen (1967) was and still is a landmark in the spider taxonomy and systematics. His publications up to 2004 have been listed by Marusik (2004a). Lehtinen has described about a hundred new arach-

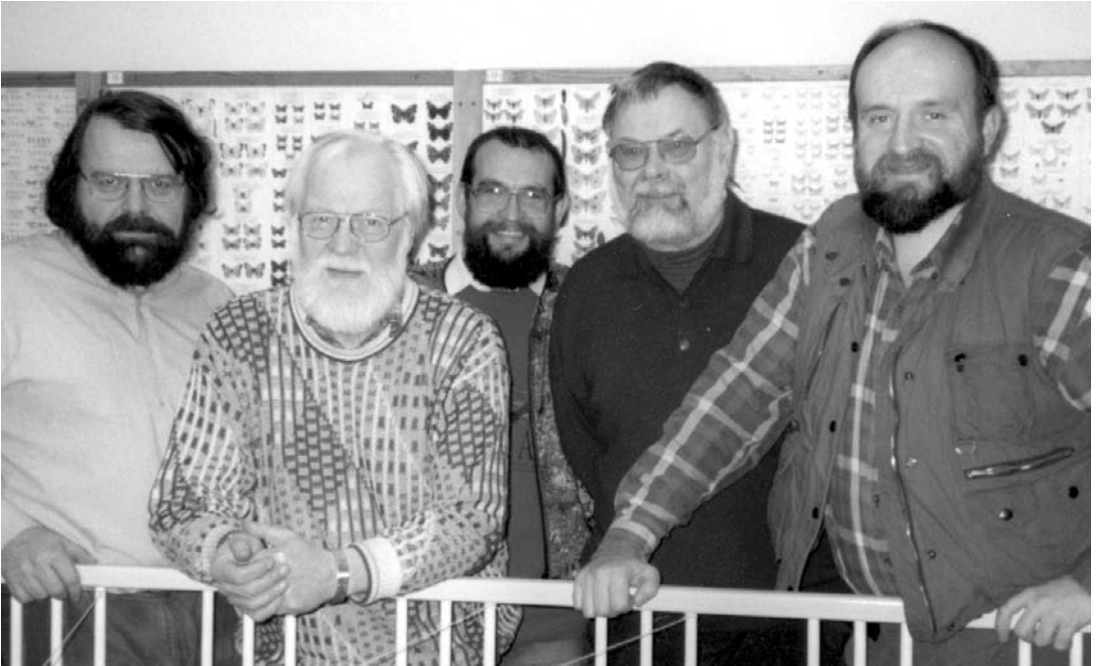
nid genera and the same number of species; he also erected new families and subfamilies. He has global interest in arachnids (e.g. Lehtinen 1981), and has made many expeditions to different areas, especially in the Tropics. Besides spiders, Lehtinen has studied also other terrestrial arthropods, especially isopods, millipedes, pseudoscorpions and certain mites, including Holothyrida (Lehtinen 1995).

Michael I. Saaristo (1938–2008) worked at the Zoological Museum, last as the Head Curator. He published many fine taxonomic papers with excellent drawings, especially on difficult families Linyphiidae (e.g. Saaristo 1971) and Oonopidae (e.g. Saaristo 2001). Saaristo described about 70 new genera and 130 species of spiders. All his publications have been listed in the obituary by Marusik & Koponen (2008). A large monograph of the spiders of Seychelles islands, his favourite study area, was published posthumously (Saaristo 2010). Saaristo studied also mayflies and ants.

Seppo Koponen has studied Holarctic spiders, their ecology, zoogeography and taxonomy (e.g. Koponen 1994). He has had many research projects, and has many joint-papers (including descriptions of six new genera and about 90 species), with colleagues especially from countries of the ex-Soviet Union (e.g. Marusik, Logunov & Koponen 2000). Koponen has also led many Finnish-Russian expeditions to different areas of Siberia in 1990s. His main arachnological publications, until 2004, have been listed by Marusik (2004b); he has many papers also on insects.

Heikki Hippa started his career at the Zoological Museum, University of Turku, moved in mid-1980s to the Zoological Museum, University of Helsinki, and worked later in the Swedish Museum of Natural History, Stockholm. His main study group is Diptera, families Sciaridae and Syrphidae, but he studied also spiders, both faunistics (Hippa & Mannila 1975b) and taxonomy (Hippa & Lehtinen 1983, Hippa & Oksala 1983, Hippa, Koponen & Oksala 1986), describing about 30 species of spiders.

Rauno Mannila studied ecology of spiders, in particular. He published several papers together with H. Hippa on faunistics and ecology (Hippa & Mannila 1975a) and they also described the lycosid *Pardosa maisa* from Finland (Hippa & Mannila 1982). After his arachnological activity,



Local and visiting arachnologists in the Zoological Museum, University of Turku. From the left: Seppo Koponen, Michael I. Saaristo, Dmitri V. Logunov, Pekka T. Lehtinen and Yuri M. Marusik. Photo: V. Rinne, 1998.



Morning tea after unexpected snow storm on June 18, 1995, in the Tannu-Ola Mountains, Tuva. Participants of the Finnish-Russian expedition, from the left: Dmitri V. Logunov, Yuri M. Marusik, Seppo Koponen and Matti Uusitalo, an acarologist. Photo: J. Jalava.



Heikki Hippa.
Photo: S. Koponen, 1998.

Mannila has acted for a long time as Office Manager of the Turku University Foundation.

Ilkka Oksala (1947–1989) published several papers together with H. Hippa. These include taxonomic publications, like descriptions of six new species. Of these two are from Finland, the linyphiids *Agyneta breviceps* and *A. trifurcata* (Hippa & Oksala 1985). They made also research in colour polymorphism of the theridiid *Enoplognatha ovata* (Hippa & Oksala 1979, 1981).

Karin Suomalainen studied histology of spiders, e.g. poison glands of several, mainly Finnish, species (Suomalainen 1964).

Ossi V. Lindqvist made his MSc-work on spiders in northernmost Lapland and published a paper on spiders living on cliffs there (Lindqvist 1964). Later he studied e.g. water regulation of land woodlice in Turku, and acted after that as the Professor of Animal Physiology and later as the Rector (President) of the University of Kuopio.

Reijo Pyhälä is a geneticist and virologist, he acted as the Director of WHO National Influenza Centre, Helsinki, for a long time. He was interested in spermatogenesis of opilionids during his study years in Turku (Pyhälä 1969).

Iipo Ilvessalo published a few small faunistic papers on opilionids, reporting also a species new to Finland (Ilvessalo 1981, Ilvessalo & Koponen 1991).

In addition, many foreign arachnologists have worked for longer periods at the Zoological Museum, University of Turku, starting in the 1990s.

The most active of them have been the taxonomists Yuri M. Marusik (Magadan), Andrei V. Tanasevitch (Moscow) and Dmitri V. Logunov (Novosibirsk, later Manchester). These research visits have produced a great number of joint publications (e.g. Marusik, Hippa & Koponen 1996, Saaristo & Tanasevitch 1996). The 11th International Congress of Arachnology was arranged in Turku in August 1989, having almost 200 participants from 28 countries (Koponen, Lehtinen & Rinne 1990).

University of Oulu

Aarno Kleemola started his arachnological studies at the University of Turku and moved later to Oulu. He studied the fauna in northwestern Lapland (Kleemola 1962), in Finnish southwestern archipelago (e.g. Kleemola 1963, Lehtinen & Kleemola 1961) and in islands of the northernmost corner of the Baltic Sea, in Perämeri (Kleemola 1969). He also founded the spider collection in the Zoological Museum, University of Oulu.

Juhani Itämies has studied, with several students as co-workers, wolf spiders (Lycosidae), especially in central and northern Finland (e.g. Itämies & Jarva 1983, Itämies & Ruotsalainen 1984, Immonen & Itämies 1994). Itämies worked for a long period in the Zoological Museum, University of Oulu, and he has investigated mainly insects, especially butterflies and moths.



Juhani Itämies.
Photo: S. Koponen, 2007.

Juha Viramo is an entomologist and he was the Director of the Oulanka Biological Research Station, University of Oulu, in Kuusamo, easternmost Finland. He participated in some spider projects which resulted, for example, a paper on spiders found on snow (Huhta & Viramo 1979) and a faunistic list of spiders around the Oulanka Research Station (Koponen & Viramo 1998).

University of Jyväskylä

During 1990s, a group led by **Rauno V. Alatalo** started a research program on ethology, especially sexual selection in the drumming wolf spider *Hygrolycosa rubrofasciata*. Several papers, including doctoral theses, were published in the late 1990s (e.g. Kotiaho et al. 1996). **Janne Kotiaho** presented a dissertation on sexual selection and costs of sexual signalling (Kotiaho 1997) and **Silja Parri** on female choice for male drumming characteristics in *H. rubrofasciata* (Parri 1999). This behavioural research activity using *H. rubrofasciata* as the study subject has continued in Jyväskylä also during the 2000s.

Others

Torild Brander (1904–92), was an enthusiastic conservationist and initiator of faunistic research in Southwest Häme, southwestern Finland. He organized also some spider studies (e.g. Brander 1961, Holm & Brander 1964).

Conclusions

The focus of arachnological research has varied between universities in the latter part of 20th century. In Helsinki most studies have been faunistic or ecological, especially after the time of W. Hackman and J. Kaisila. Faunistic research has dominated also in Oulu, and ethology clearly in Jyväskylä. In Turku, studies on systematics and taxonomy have been remarkable producing a great number of descriptions of new genera and species; also ecological and faunistic papers are frequent. Arachnological research in Turku has

been global-wide and has brought many international arachnologists to Turku.

The Finnish spider fauna listed by Palmgren (1977) included 595 species. After that, until the end of 20th century, research on spiders done by many arachnologists added about 35 species to the Finnish fauna.

Acknowledgements. I wish to thank Hans Silfverberg (Helsinki) for valuable information.

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