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The Hymenoptera collection of Lars Huggert housed in the Swedish Museum of Natural History

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In the autumn of 2006 the large insect collection of Lars Huggert (1942–2003) was kindly donated to the Swedish Museum of Natural History in Stockholm by the siblings of the collector. A first assessment of the size of the collection, estimated more than 30 000 specimens of Coleoptera, 23 000 specimens of Hymenoptera and about 2 000 specimens of Diptera. Here an inventory of the Hymenoptera part of the Lars Huggert donation is given including an account of type specimens of 32 taxa described by Huggert and currently housed in NHRS. Specimens of more than 1 330 species of Hymenoptera were included in the donation which enriched the existing NHRS collections immensely. Huggert described 80 species and 34 genera/subgenera in the families Diapriidae Haliday, 1833, Platygastridae Haliday, 1833, Scelionidae, Haliday 1839 and Pteromalidae Dalman, 1820 and these families are particularly well-represented in the donation.

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Lars Huggert (Fig. 1) was a talented Swedish entomologist and mycologist who built large collections of insects as well as insect-parasitic fungi. His insect collection, donated to the Swedish Museum of Natural History (NHRS) by his relatives, contained mainly dry-mounted beetles and wasps, and a smaller amount of flies and mosquitoes. Particularly on the Hymenoptera side it greatly enhanced the collections of some of the parasitic wasp groups both in terms of taxa and specimens.

This is an overview of the Hymenoptera section of Lars Huggert's collection that has been incorporated into the Hymenoptera collection at the NHRS. An account is given of the type specimens of taxa described by Huggert and present in his private collection as well as a short biographic account of the collector. The entire Huggert collection is obviously too large to be listed in detail here, but the author would be happy to provide lists for those interested in particular groups.

Short biographic account

Lars Huggert was born on October 15, 1942, in Bromma in Stockholm as the oldest of 5 siblings to mother Anna, an organist and homemaker, and father Arne, a medical doctor. Lars started building a collection of beetles in cigar boxes as a young boy and collected in Halland with his cousin Olle during the holidays, using his father's entomological literature (Lindroth 1942-1943, Landin 1953) to identify the insects in his collection.

The family moved from Stockholm to Umeå in 1959 where his father started working as a professor of Ophtamology at the Faculty of Medicine at the newly established Umeå University. Lars Huggert's insect collection was now being kept in standard green

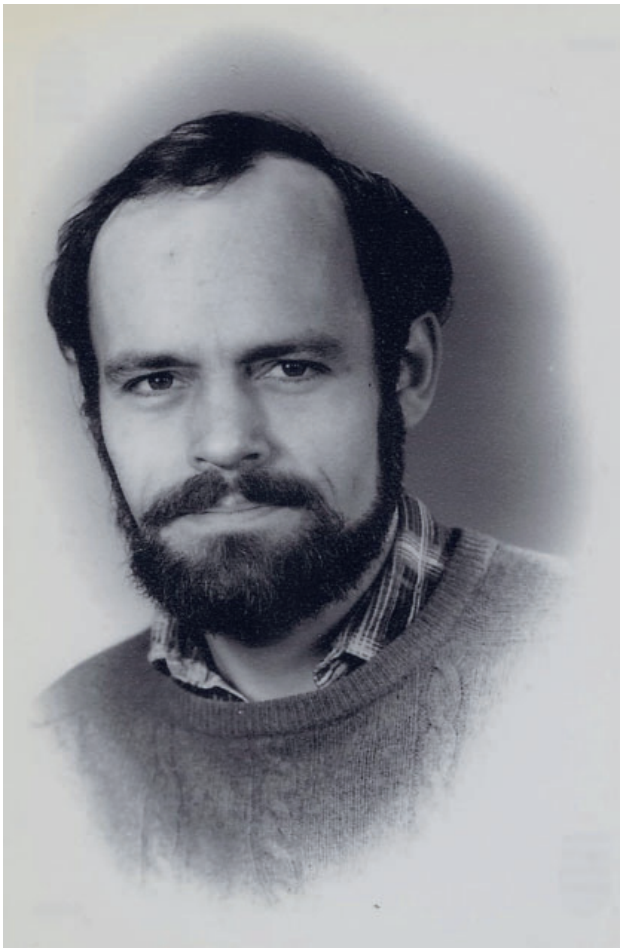

Figure 1. Portrait of Lars Huggert in 1981 provided by brother Anders Huggert. Photographer unknown.

Figur 1. Porträtt av Lars Huggert 1981 från brodern Anders Huggert. Fotograf okänd.

boxes with glass lids sold by Norstedts skolförlag in Stockholm. The collection of identification literature was gradually expanded with Svenska insekter (Swedish Insects) (Tullgren & Wahlgren 1920–1922), Fauna Germanica (Reiter 1909–1916) as well as selected insect volumes of the series Danmarks fauna and the Swedish entomological journal Entomologisk Tidskrift.

As the insect collection was constantly growing it became necessary to rehouse it and one of the linen cabinets of Lars' mother was repurposed to fit the insect drawers. The family started to realize that the insects were more to Lars than a hobby.

Lars Huggert graduated from Umeå högre allmänna läroverk in 1964 and did his mandatory military service with his brother Anders in 1964–1965. Lars studied geography, physics and chemistry while waiting for the biology program to establish at the new university. His growing collection and library and his self-made insect trap, the Tullgren funnel, took most of the space in his one-room apartment.

In 1977 Lars met Sylvia Viitalähde and moved in with her and her four children. She also enjoyed the outdoors and would join Lars on collecting trips in Sweden and abroad.

In 1978 they did their first trip outside of Europe to Gambia where several parasitic wasps new to science were collected (Masner & Huggert 1979, Huggert & Masner 1983, Johnson & Masner 1985). During the same year Lars received a scholarship for the first of many visits to the Canadian National Collection of Insects, Arachnids and Nematodes (CNC) in Ottawa, Canada which was the start of his important collaboration with Lubomir Masner, who is considered to be the world's preeminent expert on several large groups of parasitic wasps.

A few years later, in 1981, Lars and Sylvia moved from Umeå to Dalby in Scania in the hope that Lars would have better possibilities to pursue a career as an entomologist there. He connected with the entomologist community in Lund and soon received a post-doc scholarship and went with Sylvia to Ottawa to study parasitic wasps from May 1982 until August 1984. During these years Lars participated in collecting trips in several provinces across Canada and also ventured to the areas south of the Great Lakes in the east and southern states of USA, as well as collecting trips to Ecuador and Peru in South America.

Upon his return to Scania in 1984 it became clear that it would be hard to continue his career as an entomologist and Lars took a job as a carpenter. He kept entomology as a hobby and still took part in inventory work whenever opportunities turned up. He stayed in touch with entomologists abroad and in Sweden and was a great inspiration to many people with his profound knowledge, and he generously provided loans from his rich collection.

There was a general national focus on ecological research in the 1980s and 1990s and thus hard to get funding for purely taxonomic work. This led to a decrease of taxonomists until 2001 when the Species Information Centre started in Uppsala, initiating the Swedish Taxonomy Initiative (STI). STI became the most important funding agent for taxonomic studies in the country, including Phd and post-doctoral projects. Lars Huggert applied and was granted STI funding for a project on parasitoids in sac fungi in 2002, for which

some collecting was done, but by the time he received the funding he was ill in cancer and passed away in his home in Dalby on March 11, 2003.

Lars donated his collection of sac fungi to the culture collection (Mykoteket) at Uppsala University. Later Lars' siblings generously offered to donate his unique insect collection to the Swedish Museum of Natural History, where it arrived in the early autumn of 2006.

The interested reader will find more about Lars Huggert's life and work (in Swedish) in Sörensson (2003), Eriksson (2003) and Nilsson & Pettersson (2003).

Figure 2. Lars Huggert's Hymenoptera collection in original cabinets and drawers. – A) The large cabinet contained Proctotrupoidea, Platygastroidea and Diaprioidea; – B) representative original drawer of Scelionidae from the large cabinet; – C) the smaller cabinet contained Chalcidoidea; – D) the 30 original drawers in the Chalcidoidea cabinet. Photo: Hege Vårdal.

Figur 2. Lars Huggerts stekelsamling i originalskåp och lådor. – A) Det stora skåpet innehöll svartsteklar, bladlejonsteklar, gallmyggesteklar, äggmärkarsteklar och hyllhornsteklar; – B) originallåda med äggmärkarsteklar från stora skåpet; – C) det lilla skåpet innehöll glanssteklar; – D) 30 originallådor i det lilla skåpet. Foto: Hege Vårdal.

Superfamily Family	Number of species group taxa	Number of pins (often multiple specimens on each pin	Huggert type specimens/ taxa in NHRS
HYMENOPTERA	**1330**	**11992**	**114/32**
Chalcidoidea	**449**	**1185**	**21/4**
Agaonidae	1	3	0
Chalcididae	8	34	0
Encyrtidae	52	119	0
Eucharitidae	1	4	0
Eulophidae	12	52	0
Eupelmidae	9	32	0
Eurytomidae	16	38	0
Leucospidae	1	4	0
Ormyridae	2	5	0
Perilampidae	6	24	0
Pteromalidae	290	742	21/4
Signiphoridae	1	3	0
Tetracampidae	3	14	0
Torymidae	47	111	0
Diaprioidea	**419**	**5091**	**45/13**
Ismaridae	4	41	0
Diapriidae	414	5047	45/13
Monomachidae	1	3	0
Platygastroidea	**365**	**4900**	**48/15**
Platygastridae	147	1878	24/6
Scelionidae	215	2983	24/9
Sparasionidae	3	39	
Proctotrupoidea	**97**	**816**	**0**
Heloridae	3	24	0
Pelecinidae	1	3	0
Proctotrupidae	91	784	0
Roproniidae	1	3	0
Vanhorniidae	1	2	0

Table 1. Overview of Lars Huggert Hymenoptera donation giving the number of taxa and specimens (pins) and type specimens of taxa described by Huggert for each family.

Tabell 1. Översikt över Lars Huggerts stekeldonation med antal taxa, exemplar (nålar) och typexemplar av taxa beskrivna av Huggert för varje stekelfamilj.

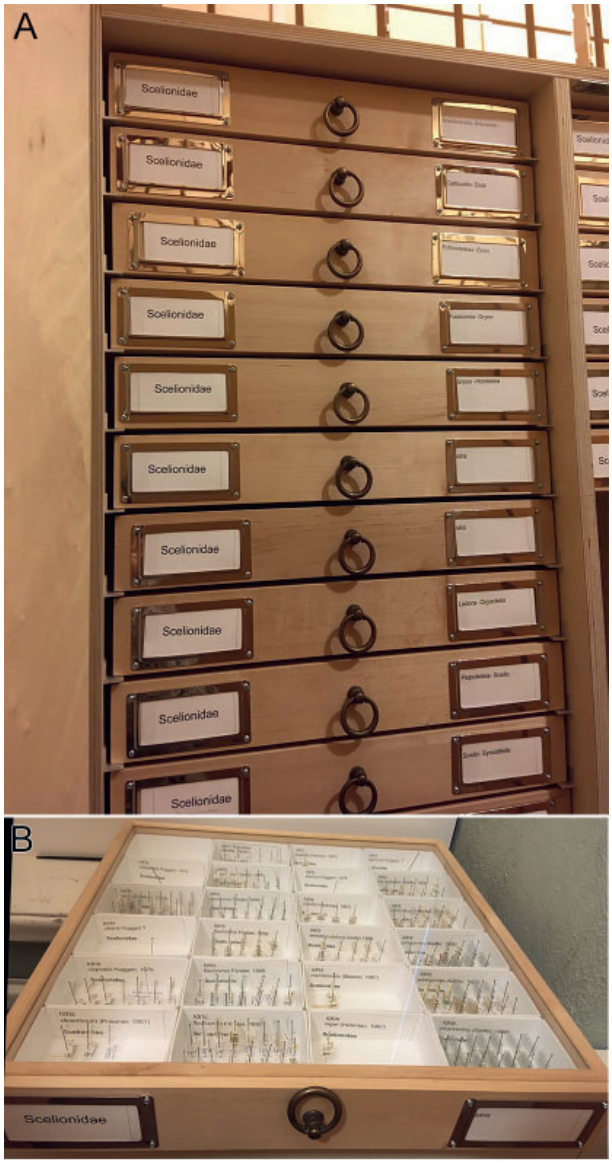

Figure 3. Parts of Scelionidae collection after transfer and reorganisation into new drawers initiated by the incorporation of the Huggert donation. – A) New drawers in cabinet; – B) new drawer with specimens belonging to *Idris* Förster, 1856, one of the genera Huggert worked extensively on. Photo: Hege Vårdal.

Figur 3. Delar av äggmärkarstekelsamlingen efter omorganisering av samlingen i nya lådor initierad av Huggert-donationens insättning i huvudsamlingen. – A) Nya lådor i skåpet; – B) ny låda med exemplar av släktet *Idris* Förster, 1856 som Huggert jobbade mycket med. Foto: Hege Vårdal.

Huggert's Hymenoptera collection

When arriving in the NHRS the Hymenoptera part of the collection consisted of a small cabinet (Figs 2C–D) with 1 185 specimens of 449 taxa in 25 drawers of 14 families of Chalcidoidea Latreille, 1817 and a larger cabinet with 60 drawers (Figs 2A–B) with about 10 800 pins (often holding multiple specimens) of 5 families of Proctotrupoidea Latreille, 1802, 3 families of Platygastroidea Haliday, 1833 and 3 families of Diaprioidea Sharkey, 2007 (Table 1, Fig. 2).

For several reasons it has taken more than 12 years to finish the transfer of the donation from the original cabinets into the main collection at NHRS, and the slow progress is mainly due to limited staff in the Hymenoptera collection. The work started with an assessment of the amount of specimens shortly after the arrival of the collection in the autumn of 2006 and continued by making a species catalogue and inventory by Ellen Rehnberg (now Sandström) in 2009. Exact counts of specimens were difficult because often multiple specimens were glued onto multiple plastic plates on each pin. The transfer of specimens into the main collection was started by Julia Stigenberg during a couple of months in 2012, when she transferred the specimens belonging to Diapriidae, Heloridae Förster, 1856, Ismaridae Thomson, 1858, Monomachidae Ashmead, 1902, Pelecinidae Haliday, 1840, Proctotrupidae Latreille, 1802, Roproniidae Bradley, 1905 and Vanhorniidae Crawford, 1909 and updated the inventory list, and thus adding more than 170 species of Diapriidae to the NHRS holdings. The following year a Daubenton guest curator, Natalie Dale-Skey Papilloud from the Natural History Museum in London, transferred two thirds of the donation's Chalcidoidea to the main collection. The rehousing of the remainder of the Huggert collection was continued little by little by the author of this paper (HV). During the fall of 2017 the transfer of the Scelionidae was finished, enriching the NHRS collection of Scelionidae with thousands of specimens (2 743 pins, often with multiple specimens on each) of about 170 species of which 90 were new for the collection.

In 2018 the last family, Platygastridae, was finally transferred into the main collection by HV. Huggert contributed with thousands of specimens (1 845 pins, again often with multiple specimens on each) of 143 taxa of this family, which is almost a 4 times increase in specimens adding about 75 species of Platygastridae to the collection.

An updated taxonomy of Proctotrupoidea, Diaprioidea and Platygastroidea is provided in

Figure 4. Parts of the Huggert type collection. – A) Drawer with types in the Huggert collection; – B) a representative type label. Photo Hege Vårdal.

Figur 4. Delar av Huggerts typsamling. – A) Låda med typer från Huggertsamlingen; – B) exempel på typetikett. Foto: Hege Vårdal.

Table 2. Genus and family-group level names of Hymenoptera in Huggert's collection, number of species-group taxa in parenthesis.

Tabell 2. Släktes- och familjnamn i Huggerts stekelsamling, antal taxa på artnivå i parentes.

Chalcidoidea

Agaonidae: *Blastophaga* (1)
Chalcididae: *Brachymeria* (2), *Chalcis* (2), *Haltichella* (1), *Psilochalcis* (1), *Lasiochalcidia* (1), *Conura* (1)
Encyrtidae: *Adelencyrtus* (1), *Ageniaspes* (1), *Aphycus* (1), *Baeocharis* (1), *Blastothrix* (2), *Borthriothorax* (2), *Callipteroma* (1), *Cerapterocerus* (1), *Cerchysiella* (1), *Cerchysius* (1), *Cheiloneurus* (2), *Choreia* (1), *Copidosoma* (2), *Dinocarsis* (1), *Discodes* (3), *Dusmetia* (2), *Echthroplexis* (1), *Ectroma* (1), *Encyrtus* (3), *Ericydnus* (5), *Eugahania* (1), *Eusemion* (1), *Helegonatopus* (1), *Homalotylys* (1), *Hoplopsis* (1), Isodromus (2), *Mayridia* (1), *Metaphycus* (1), *Microterys* (2), *Mira* (1), *Neocladia* (1), *Platencyrtus* (1), *Prionomitus* (1), *Prochiloneura* (1), *Syrphophagus* (1), *Trichomasthus* (2), *Tyndarichus* (1)
Eucharitidae: *Stilbula* (1)
Eulophidae: *Allocerastichus* (1), *Astichus* (4), *Parasecodella* (1), *Tamarixia* (1), *Wichmannia* (2)
Eupelmidae: *Anastatus* (2), *Calosota* (2), *Eupelmus* (4), *Eusandalum* (1)
Eurytomidae: *Aximopsis* (1), *Eurytoma* (9), *Ipideurytoma* (1), *Sycophila* (1), *Systole* (1), *Tetramesa* (5)
Leucospidae: *Leucospis* (1)
Megastigmidae*: Megastigmus* (5), *Bootanomyia* (1
Ormyridae: *Ormyrus* (2)
Perilampidae: *Crysolampus* (2), *Perilampus* (6)
Pteromalidae: *Ablaxia* (2), *Aggelma* (1), *Anogmoides* (1), *Amogmus* (1), *Apelioma* (2), *Ardilea* (1), *Arhthrolytus* (4), *Asaphes* (2), *Bairamlia* (1), *Caenacis* (1), *Callitula* (3), *Capellia* (2), *Catolaccus* (1), *Cea* (1), *Cecidostiba* (1), *Cerocephala* (2), *Cheiropachus* (1), *Chlorocytus* (4), *Cleonymus* (2), *Coelopisthia* (1), *Colotrechnus* (1), *Conomorium* (1), *Coruna* (1), *Cratomus* (1), *Cyclogastrella* (1), *Cyrtogaster* (3), *Dibrachoides* (1), *Dibrachys* (3), *Diglochis* (1), *Dimachus* (1), *Dinarmoides* (1), *Dinarmus* (1), *Dinotiscus* (3), *Dipara* (3), *Dirhicnus* (1), *Dorcatomophaga* (1), *Ecrizotes* (1), *Erdoesina* (1), *Erythromalus* (2), *Eulonchetron* (1), *Euneura* (2), *Eunotus* (4), *Gastracanthus* (1), *Gastrancistrus* (6), *Glyphognathus* (2), *Habritys* (1), *Halticoptera* (6), *Harrizia* (1), *Hemitrichus* (1), *Heydenia* (1), *Hobbya* (1), *Holcaeus* (7), *Homoporus* (7), *Isocyrtus* (1), *Janssoniella* (3), *Kaleva* (1), *Lamprotatus* (7), *Lariophagus* (1), *Lonchetron* (1), *Macroglenes* (3), *Macromesus* (1), *Melancistrus* (1), *Meraporus* (2), *Merismus* (3), *Mesopolobus* (11), *Metacolus* (2), *Micradelus* (1), *Miscogaster* (4), *Nasonia* (1), *Nephelomalus* (1), *Norbanus* (1), *Notaniscus* (3), *Notoglyptus* (1), *Pachycrepoideus* (1), *Pachyneuron* (9), *Pandelus* (1), *Panstenon* (1), *Pegopus* (1), *Peridesmia* (1), *Perniphora* (1), *Pezilepsis* (1), *Platygerrhus* (4), *Platypteromalus* (1), *Plutothrix* (4), *Psilocera* (3), *Psilonotus* (1), *Psychophagoides* (1), *Psychophagus* (1), *Pteromalus* (17), *Rakosina* (1), *Rhaphitelus* (1), *Rhicnocoelia* (2), *Rhopalicus* (2), *Rohatina* (1), *Roptrocerus* (2), *Sceptrothelys* (1), *Schizonotus* (2), *Scutigellista* (1), *Seladerma* (6), *Semiotellus* (3), *Spalangia* (5), *Spalangiopelta* (3), *Spaniopus* (5), *Spathopus* (1), *Sphaeripalpus* (1), *Sphegigaster* (4), *Spilomalus*, *Spintherus* (1), *Stenomalina* (3), *Stictomischus* (2), *Syntomopus* (3), *Systasis* (4), *Thektogaster* (2), *Thinodytes* (1), *Tomicobia* (3), *Toxeuma* (1), *Trichomalopsis* (7), *Trichomalus* (8), *Tricyclomischus* (1), *Trigonoderus* (3), *Tritneptis* (1), *Urolepis* (1), *Xestomnaster* (1), *Zdenekiana* (1)
Signiphoridae*: Chartocerus* (1)
Tetracampidae: *Epiclerus* (1), *Platynocheilus* (1), *Tetracampe* (1)
Torymidae: *Baryscapus* (1)), *Cryptopristus* (1), *Didactyliocerus* (1), *Diomorus* (2), *Eriodontomerus* (1), *Exopristus* (1), *Glyphomerus* (1), *Idamotorymus* (1), *Monodontomerus* (4), *Podagrion* (1), *Pseudotorymus* (2), *Torymus* (26)

Diaprioidea

Ismaridae: *Ismarus (4)*
Diapriidae: *Acanosema* (3), *Acanospilus* (2), *Aclista* (40), *Acropiesta* (6), *Ambositra* (1), *Aneurhynchus* (9), *Aneuropria* (1), *Anommatium* (1), *Aprestes* (1), *Basalys* (20), *Belyta* (11), *Cinetus* (27), *Claudivania* (1), *Coecopria* (1), *Coptera* (3), *Diapria* (2), *Diphora* (1), *Entomacis* (3), *Eumiota* (2), *Geodiapria* (1), *Idiotypa* (1), *Labidopria* (1), *Labolips* (1), *Lepidopria* (1), *Lyteba* (1), *Macrohynnis* (1), *Miota* (17), *Monelata* (2), *Opazon* (3), *Pamis* (1), *Pantoclis* (23), *Pantolyta* (4), *Paramesius* (7), *Paroxylabis* (3), *Plagiopria* (1), *Platymischus* (1), *Polypeza* (2), *Propsilomma* (1), *Psilomma* (2), *Psilus* (11), *Scorpioteleia* (1), *Solenopsia* (1), *Spilomicrus* (15), *Symphytopria* (1), *Synacra* (4), *Synbelyta* (1), *Tetramopria* (2), *Trichopria* (33), *Viennopria* (1), *Zygota* (25)
Monomachidae: *Monomachus* (1?)
Platygastroidea
Platygastridae: *Acerotella* (2), *Allotropa* (3), *Amblyaspis* (5), *Anopedias* (4), *Ceratacis* (1), *Euxestonotus* (2), *Fidiobia* (4), *Gastrotypes* (2), *Inostemma* (21), *Iphitrachelus* (2), *Isocybus* (8), *Isorhombus* (1), *Isostasius* (2), *Leptacis* (8), *Metaclisis* (2), *Metanopedias* (1), *Piestopleura* (2), *Platygaster* (43), *Platystasius* (3), *Prosactogaster* (1), *Prosynopeas* (1), *Pseudaphanomerus* (1), *Synopeas* (20), *Trichacis* (2), *Trichaoides* (1)
Scelionidae: *Acanthoscelio* (1), *Amblyscelio* (1), *Anteris* (3), *Anteromorpha* (1), *Apegus* (3), *Aradophagus* (2), *Baeus* (2), *Baryconus* (2), *Breviscelio* (1), *Calliscelio* (1), *Calotelea* (1), *Ceratobaeus* (1), *Chromoteleia* (1), *Cremastobaeus* (1), *Doddiella* (1), *Duta* (2), *Echthrodesis* (1), *Embidobia* (1), *Encyrtoscelio* (1), *Endecascelio* (1), *Eremioscelio* (1), *Eumicrosoma* (2), *Exon* (1), *Fusicornia* (1), *Gryon* (10), *Hickmanella* (1), *Holoteleia* (1), *Hungrarogyrum* (1), *Idris* (16), *Macrotelia* (3), *Mantibaria* (1), *Microthoron* (1), *Mirobaeoides* (1), *Mirotelenomus* (1), *Nirupama* (1), *Nyleta* (1), *Odontacolus* (1), *Odontoscelio* (1), *Oethecoctonus* (1), *Opistacantha* (1), *Oreiscelio* (1), *Oxyscelio* (1), *Palpoteleia* (1), *Paratelenomus* (1), *Paridris* (1), *Phanuromyia* (2), *Platyscelio* (1), *Probaryconus* (1), *Protelenomus* (1), *Psilanteris* (1), *Psix* (4), *Scelio* (8), *Stenotelea* (1), *Teleas* (5), *Telenomus* (43), *Thoron* (1), *Tiphodytes* (1), *Trimorus* (31), *Trissolcus* (10), *Xenomerus* (1)
Sparasionidae: *Sparasion* (3)

Proctotrupoidea

Heloridae: *Helorus* (3)
Pelecinidae: *Pelecinus* (1)
Proctotrupidae: *Brachyserphus* (4), *Codus* (15), *Cryptoserphus* (5), *Disogmus* (2), *Exallonyx* (30), *Fustiserphus* (4), *Microserphus* (1), *Nothoserphus* (1), *Oxyserphus* (1) *Paracodrus* (1), *Parthenocodrus* (1), *Phaenoserphus* (15), *Proctotrupes* (5), *Pshornia* (1), *Tretoserphus* (2)
Roproniidae: *Ropronia* (1?)
Vanhorniidae: *Vanhornia* (1)

Johnson's online checklists (Johnson 2018) as well as the printed world catalogue of Proctotrupoidea (Johnson 1992). An overview of the families and genera present in the Huggert collection is given in Table 2.

Since the addition of the Huggert specimens meant such an enlargement of the existing collections of certain groups, we took the opportunity to recurate these sections of the Hymenoptera collection into new drawers and unit trays with new labels (Figs 3A–B). According to our standard procedures the specimens are arranged in alphabetical order under superfamily, family, genus and species. Each of the donated specimens are placed under the currently valid taxonomic name except for the type specimens which were transferred to the type collection (Fig. 4A) under the original name. Each specimen received a donation label (Figs 5A, C) which will forever associate each specimen to Lars Huggert's collection and donation.

The donation as a whole received the accession number 2006-NHRS-001, which forms a link between the databased specimen of this donation. However, we did not start using this number series of accession numbers before 2010, 4 years after receiving the donation, when we had already started attaching donation labels to the specimens of the Huggert collection, and thus the accession number is not printed on the donation label (Figs 5A, C) as is currently standard practice.

Only a small fraction of the Hymenoptera specimens in the Huggert collection is hitherto databased, including the type specimens. The databased specimens receive a label with a unique catalogue number consisting of an eight-letter code (NHRS-HEVA) followed by nine numbers. Information on all the databased specimens including label data is available via Naturarv (2021).

Specimens, mounts and labels

The specimens in the Huggert collection were exquisitely mounted and well-labelled (Figs 5A–D) and arranged according to classification in the drawers. Some specimens were mounted dorsoventrally (Coleoptera style) (Fig. 6) and glued with the ventral side to the plate, but typically the wasps were glued on the right-hand side onto a rectangular transparent piece of plastic-like material (Figs 5–7) which is rather unusual in insect collections. Often several specimens are glued onto the same plate and several plates are mounted on the same pin, occasionally up to 30 specimens on the same pin (Fig. 7).

This saves a lot of drawer and cabinet space as certain drawers contained more than 1 000 specimens, but may not be ideal if it turns out that specimens on the same pin or plate are not conspecific. Pest control may be more challenging when the specimens are so tightly packed, but generally the pest problem is not a large problem on these small wasps. The transparent plates (Figs 5B, 6) seem to adhere dust and particles which will be more visible in photographs than in cardboard mounts (Fig. 5D).

Huggert's own labels are mostly printed with details added by hand (Figs 5A, C). In most of the specimens collected in Sweden the label data starts with an abbreviation of the Swedish province, most commonly Vb, Ång, Hall and Sk (representing Västerbotten, Ångermanland, Halland and Skåne (Scania) respectively) followed by a locality name, date given as day/month, year in arabic numerals and his name given as either L. Huggert or Lars Huggert.

Type labels are usually similar in structure to locality labels, with a preprinted part and details added in handwriting (Fig. 4B). Red type labels typically have "Holotypus" or "Paratypus" printed, and taxon name, Lars Huggert (or L. Huggert) and year in handwriting.

Sometimes determination labels are red on specimens that are obviously not types. On some of these, but not all, it is written that the specimen is compared with type, so possibly red labels generally indicate that the specimen has been compared by Huggert with a type specimen.

The collection is assembled over a period of almost 50 years, between the 1950s and the first couple of years of the 2000s. The majority of the specimens are collected in Sweden and most frequently close to the places where Huggert lived in Västerbotten or Scania, or where he had relatives and acquaintances.

Quite a lot of the material in the collection was collected during his visits to countries in central and southern Europe, primarily Bulgaria, Spain, Croatia, Slovenia, as well as western and southern Africa; Gabon, Gambia, Ivory Coast, Zimbabwe.

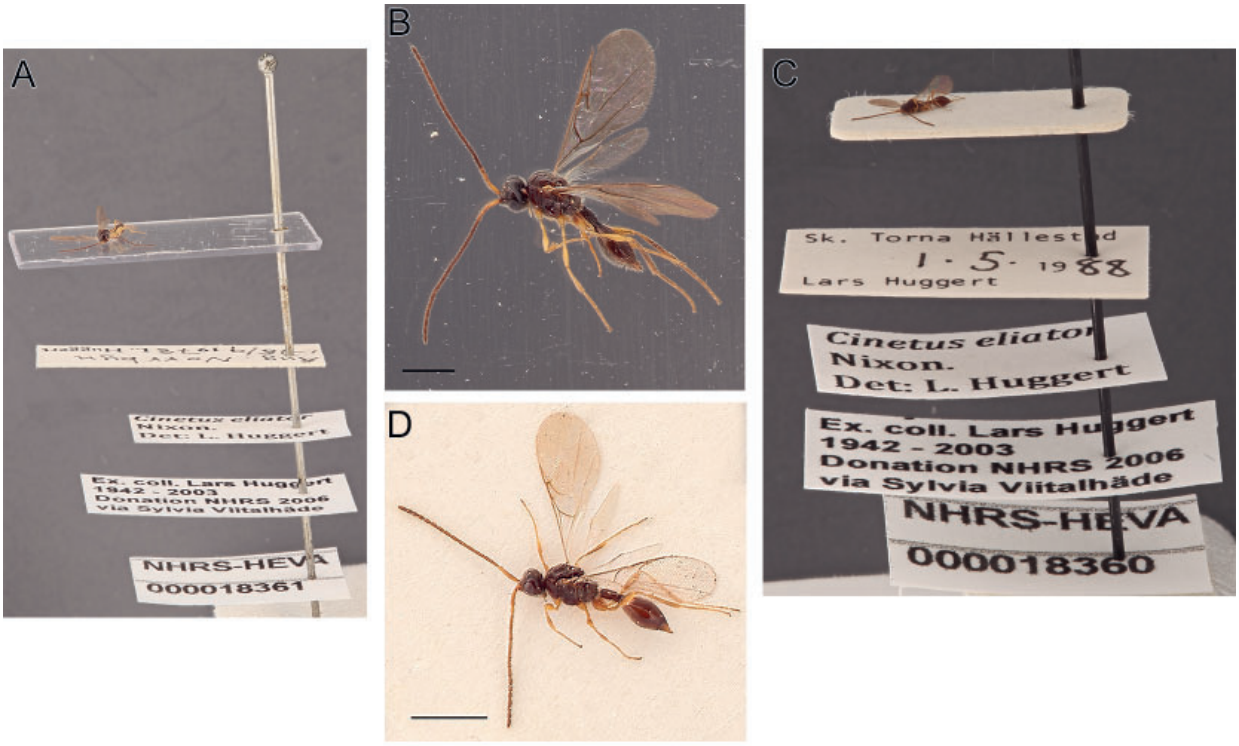

Figure 5. Examples of mounts and labels in the Huggert collection. – A) The most typical mount with the specimen glued to a pinned transparent plate and printed locality label, determination label, donation label and NHRS-catalogue number label; – B) specimen glued on transparent plate, scale bar: 1 mm; – C) Mount on cardboard including similar labels as in A; – D) specimen glued to cardboard, scale bar: 1 mm. Photo: Hege Vårdal.

Figur 5. Exempel på montering och etikettering i Huggerts samling. – A) Den mest typiska monteringen med stekel limmad på en genomskinlig plastplatta på nålen med tryckt lokaletikett, bestämningsetikett, donationsetikett och NHRS-katalognummer-etikett; – B) exemplar limmad på genomskinlig platta, skala: 1 mm; – C) montering och etiketter på uppklistringslappar av papper; – D) exemplar limmad på uppklistringslapp, skala: 1 mm. Foto: Hege Vårdal.

There is not much from Huggert's time in Canada and USA as the material he collected there most likely ended up in the Canadian National Collection in Ottawa, where he was working at the time. Specimens from Huggert's expeditions to Peru and Ecuador are housed in the collection at the Biological Museum in Lund (Sörensson 2003).

Like many insect collectors Lars Huggert appear to have exchanged material with other collectors and thus his collection contained material collected by other people including paratypes of taxa described by Day, Yamagishi, Galloway, Szabó, Vlug, Austin, Hedqvist, Sundholm, Johnson & Masner and Townes as well as non-type material of at least a dozen additional collectors mainly in Europe, but also in countries in Africa and Asia, including Somalia, Uganda, Rwanda, India, Sri Lanka and Bangladesh.

Scientific work

Lars Huggert's first scientific publication was about beetles and was published in Entomologisk Tidskrift in 1967 (Huggert 1967). Since then he published a few similar faunistic observations on different groups of beetles in the 1970s when he expanded his interests to include fungi and parasitic wasps.

In 1972 he presented his licentiate thesis about fungi in the order Laboulbeniales developing on the surface of insect exoskeletons (Huggert 1972, Huggert 2010, compiled, annotated and published posthumously by Ove Eriksson). At the same time Lars Huggert described his first species of Hymenoptera after finding a small pteromalid in Björkliden (Torne Lappmark) in northern Sweden (Huggert, 1972). It was named *Lamprotatus scandicus* Huggert, 1972 and the type material is currently housed at the NHRS.

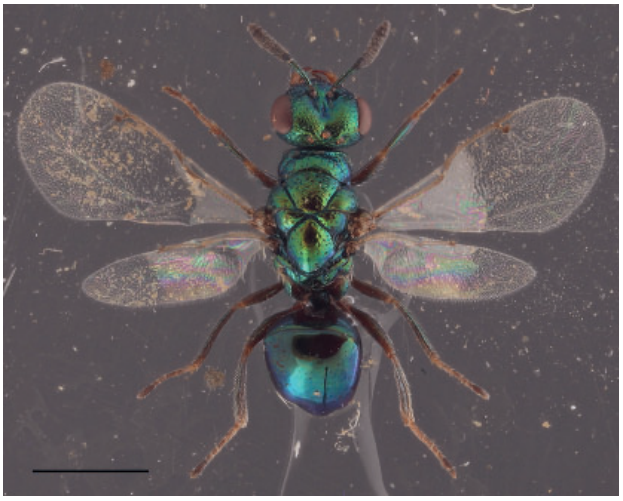

Figure 6. The first specimens of the genus *Chrysolampus* Spinola, 1811 (Perilampidae Förster, 1856) in the NHRS-collection dorsoventrally mounted on transparent plate. Scale bar: 1 mm. Photo: Hege Vårdal.

Figur 6. Första exemplaren av gropglansstekelsläktet *Chrysolampus* Spinola, 1811 (Perilampidae Förster, 1856) i Naturhistoriska riksmuseets samlingar, limmad med buksidan nedåt på genomskinlig platta. Skala: 1 mm. Foto: Hege Vårdal.

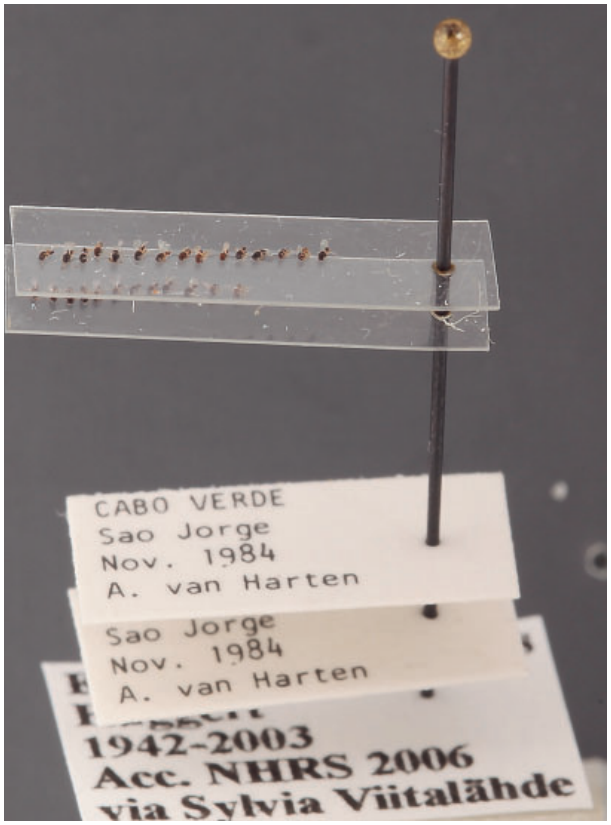

Figure 7. Mount with 27 specimens of *Allotropa citri* Muesebeck, 1954 (Platygastridae Haliday, 1833) on the same pin. Photo: Hege Vårdal.

Figur 7. Tjugosju exemplar av gallmyggestekeln *Allotropa citri* Muesebeck, 1954 (Platygastridae Haliday, 1833) monterad på samma nål. Foto: Hege Vårdal.

Lars finished his PhD in 1979 and the thesis was a systematic revision of the western palearctic scelionid genus *Idris* Förster, 1856 (Huggert 1979).

During his relatively short time as a publishing hymenopterist, which mainly lasted from the early 1970s to the mid-1980s, Lars Huggert described 80 species group taxa, 34 genus group taxa and 1 tribe. A complete list of taxa he described as well as his publications can be found in Sörensson (2003).

According to the original descriptions the majority of type material of the taxa Huggert described were deposited in natural history collections. He collaborated extensively with Lubomir Masner for a few years, and they described a large number of taxa together and the majority of these types are housed in the Canadian National Collection, Ottawa where they both worked at the time. Some of Huggert's types are deposited in the Natural History Museum in London and Musée d'Histoire Naturelle, Geneva.

The 126 type specimens of 32 species in Huggert's collection are currently housed in the NHRS (Table 3).

He published mainly on insects in Entomologisk Tidskrift, Entomologica Scandinavica and The Canadian Entomologist, with occasional contributions in journals connected with the countries or museums where the studied specimens were from.

Late in his life Lars Huggert was involved in some large inventory projects for the local government (Länsstyrelsen) in Kalmar (Nilsson & Huggert 2001) and the Nature Protection Association (Naturskyddsföreningen) in Lund (Arup et al. 2001).

Interesting specimens in the Huggert collection

Most of the Huggert collection actually consist of taxa that are rarely collected in Sweden because they are tiny and challenging to work with in many respects, but all of these are not necessarily rare in nature. But the collection also contained a number of specimens from families of which very little or no material were present in the NHRS collection previously, including the chalcidoid families Perilampidae Förster 1856, Tetracampidae Förster

Table 3. Type specimens of Hymenoptera described by Lars Huggert currently housed in NHRS, HT=holotype, PT=paratype.

Tabell 3. Typexemplar av arter beskrivna av Lars Huggert i Naturhistoriska Riksmuseets samlingar, HT=holotyp, PT=paratyp.

Taxon name	Author, year	Catalogue number	Type status, sex	Specimens	Type locality
Chalcidoidea: Pteromalidae					
Lamprotatus scandicus	Huggert, 1972	NHRS-HEVA000018469-18477	♀HT+ 8 ♂♂ PT (1 ♀, 18 ♂♂ spec)	20	Sweden: To: Björkliden & Abisko, Nb: Månnikkö
Spaniopus hedqvisti	Huggert, 1976	NHRS-HEVA000003613-3615 , NHRS-HEVA000018478-18480	3♀♀, 3♂♂ PT	7	Sweden: Hr, Tänndalen & Vb, Umeå, Hällnäs & Ly, Hemavan
Spathopus montanus	Huggert, 1976	NHRS-HEVA000002628	♀HT	1	Sweden: Ly, Hemavan
Zdenekiana plana	(Huggert, 1976)	NHRS-HEVA000002627	♀HT	1	Sweden: Nb, Lappsmicken
Diaprioidea: Diapriidae					
Basalys cornutus	Huggert, 1982	NHRS-HEVA000010043-10044	1♀, 1♂ PT	2	Sri Lanka: Kandy, Ginigathena
Baslays geobius	Huggert, 1982	NHRS-HEVA000010045-10050	3♀♀, 3♂♂ PT	6	Sri Lanka: Pidurutalagala, Hakala, Horton Plains, Ginigathena & Kandana
Baslays geus	Huggert, 1982	NHRS-HEVA000010051-10053	2♀♀, 1 ♂ PT	3	India: Darjeeling, Tiger Hill
Baslays geoides	Huggert, 1982	NHRS-HEVA000010054	1♀ PT	1	India: Darjeeling, Tiger Hill
Baslays loeblii	Huggert, 1982	NHRS-HEVA000010055	1♀ PT	1	India: Uttar Pradesh, Garhwat
Claudivania miranda	Huggert, 1982	NHRS-HEVA000017369-17370	1♀, 1♂ PT	2	Sri Lanka: Kandana & Kandy
Labidopria noctivaga	Huggert & Masner 1983	NHRS-HEVA000010045-10050	3♀♀, 3♂♂ PT	6	USA: Arizona, Baboquivari Mts
Plagiopria passerai	Huggert & Masner 1983	NHRS-HEVA000017372-17374	1♀, 2♂♂ PT	3	Italy, Marsicano & Gargano, France: Montricoux
Townesella marjoriae	Huggert & Masner 1983	NHRS-HEVA000018467-18468	2 ♀♀ PT	2	USA: Arizona, Molino Basin & Nogales
Trichopria billaevora	Huggert, 1982	NHRS-HEVA000017375-17383	3♀♀, 3♂♂ PT	6	New Caledonia: Yahoué
Trichopria fumipennis	Huggert, 1982	NHRS-HEVA000017384-17388	3♀♀, 2♂♂ PT	5	Gabon: Megale
Trichopria myrmicae	Huggert & Masner 1983	NHRS-HEVA000017389-17394	6 ♀♀PT	6	USA: New York, Alexandria Bay
Trichopria stomoxydis	Huggert 1977	NHRS-HEVA000017395-17400	4♀♀, 2♂♂ PT	6	Uganda, Mauritius: Ebene
Platygastroidea: Platygastridae					
Anopedias sundholmi	Huggert, 1974	NHRS-HEVA00000809-8092	1♀, 1♂ PT	2	Sweden: Småland, Ålem
Leptacis torispinula	Huggert 1980	NHRS-HEVA000008096-8100	♀HT, 4♀♀ PT	5	Sweden: Småland, Hornsö, Slovenia: Slatna
Platygaster gracilipes	Huggert, 1975	NHRS-HEVA000008101-8112	10♀♀, 2♂♂ PT	12	Sweden: Vb, Bygdsiljum & Hällnäs, Ha, Släp, Go, Gotska Sandön Sk, Häckeberga & Skogshejan, Bl, Johannishus

Table 3. Cont.

Tabell 3. Forts.

Taxon name	Author, year	Catalogue number	Type status, sex	Specimens	Type locality
Platygaster lamelliformis	Huggert, 1973	NHRS-HEVA000008113-8114	2 ♀♀ PT	2	Sweden: Västerbotten, Skatan
Platygaster masneri	Huggert, 1975	NHRS-HEVA000008115-8116	♀HT, 1♀ PT	2	Sweden: Småland, Strömsrum
Platygaster stylatus	Huggert 1980	NHRS-HEVA000008133	♀HT	1	Myanmar: Kambaiti
Platygastroidea: Scelionidae					
Abuko sarotes	Masner & Huggert 1979	NHRS-HEVA000006869	♀HT	1	Gambia: Abuko
Idris adejensis	Huggert, 1974	NHRS-HEVA000006877-6878	♀HT, 1♀ PT	2	Spain: Tenerife, Aeje
Idris clypealis	Huggert, 1979	NHRS-HEVA000007619	1♀ PT	1	Cape Verde: São Domingos
Idris ibericus	Huggert, 1979	NHRS-HEVA000007620	1♀ PT	1	Spain: Sierra Nevada
Ladora brunnea	Masner & Huggert 1979	NHRS-HEVA000007623-7624	2♂♂ PT	2	Gambia: Abuko & Spain: Mallorca
Telenomus eumicrosomoides	Huggert, 1983	NHRS-HEVA000007625-7632	8♂♂ PT	8	Sweden: Vg, Bohus, Vr, Årjäng Italy: Termoli, S. Arcangelo &Trevi
Telenomus incisus	Huggert, 1983	NHRS-HEVA000008367-8372	♀ HT, 3♀♀, 2♂♂ PT	6	Italy: Terracina
Trissolcus lauri	Huggert, 1974	NHRS-HEVA000002609-2610	♀HT, 1♀ PT	2	Spain: Tenerife, Mercedes
Xenomerus canariensis	Huggert, 1974	NHRS-HEVA000002611	♀HT	1	Spain: Tenerife, Mercedes

1856, and Eucharitidae Walker 1846, Agaonidae Walker 1846 and some that appear to be rare in most collections; namely the diaprioid family Monomachidae and the proctotrupoid families Roproniidae and Vanhorniidae.

The perilampid genus *Chrysolampus* Spinola, 1811 (Fig. 6) was not represented in the NHRS collection previously, and the Huggert collection had specimens of 2 different species. One is apparently a new record for Sweden. These will be included in an ongoing revision of the Nordic fauna of the genus involving Finnish and Norwegian collaborators. Little is known about the biology of these beautiful wasps, but the larvae have been found to be ectoparasitoids on nitidulid beetle larvae in *Chrysolampus thenae* (Walker, 1848) (Askew 1980).

Although *Blastophaga psenes* (Linnaeus, 1758) is probably one of the most well-known fig-wasps as it is the sole pollinator of the edible fig (*Ficus carica* L.) (Noyes 2019), it became the first representative of family the fig wasps (Agaonidae) in the NHRS collection (Fig. 8A). These small wasps are about 2 mm long, the females are winged (Fig. 8B) and the males are wingless and they only live a short period of time as adults. They are restricted to the areas where figs grow, as they are dependent on figs to breed and in Europe they can be found in the Mediterranean region.

The Huggert collection more than doubled the NHRS holdings of the rather uncommon diaprioid family Monomachidae (3 specimens) and proctotrupoid families Roproniidae (3 specimens) and Vanhorniidae (2 specimens). The genus *Monomachus* (Monomachidae) (Fig. 9A) has a markedly elongate neck and body (metasoma) and is rather large for a proctotrupoid; up to 20 mm. They appear to be rare and has a limited distribution in Central and South America where they parasitise on chiromyzine flies (Musetti & Johnson 2004).

The species *Ropronia garmani* Ashmead, 1897 (Fig. 9B) represents the equally rare Roproniidae, which can be separated from similar proctotrupoid groups, Heloridae and Vanhorniidae, by the stalked and rather small metasoma, 14 antennal segments and the specific wing venation. It is often associated

to moist localities in eastern North America (Townes 1948). Its biology and host association seems unclear.

The Vanhorniidae contains only one genus and 4 extant species worldwide, and with *Vanhornia eucnemidarum* Crawford, 1909 the NHRS collection now holds 2 of the species. The other being *Vanhornia leileri* Hedqvist, 1976, of which the holotype is in the NHRS. They can be recognized by unique features like strong exodont mandibles, large metasomal carapace forming a syntergite and a long exerted ovipositor directed forwards (Fig. 9C) The genus is believed to be parasitoids of a eucenmid beetle (Timokhov & Belokobylsjij 2020).

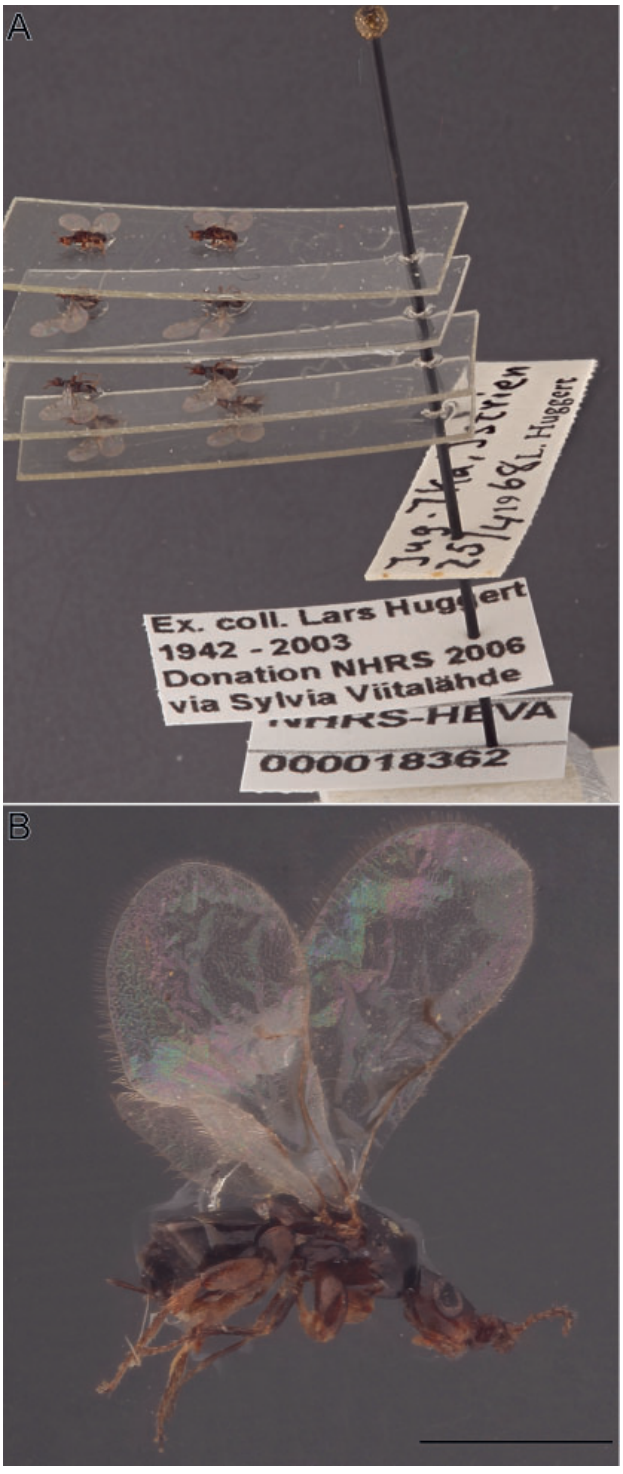

Figure 8. New Hymenoptera family in the NHRS-collection; fig wasps (Agaonidae Walker 1846), represented by specimens of *Blastophaga psenes* (Linnaeus, 1758) collected in Croatia in 1968. – A) Mount and labels of 8 specimens; – B) winged female of *B. psenes*, scale bar: 1 mm. Photo: Hege Vårdal.

Figur 8. Ny stekelfamilj i Naturhistoriska riksmuseets samlingar; fikonsteklar (Agaonidae Walker 1846), representerad av exemplar av *Blastophaga psenes* (Linnaeus, 1758) insamlade i Kroatien i 1968. – A) Åtta exemplar och etiketter monterade på nål; – B) hona med vingar av *B. psenes*, skala: 1 mm. Foto: Hege Vårdal.

Acknowledgements

On behalf of the Swedish Museum of Natural History, we are most grateful to Lars Huggert's partner Sylvia Viitalähde and Lars Huggert's siblings for the donation and the arrangements of the transfer of the collection from Scania to the museum in Stockholm. The brother Anders Huggert is especially thanked for providing a detailed account of his brother's life and work from which the biographical part of this paper is highly inspired, and he also provided the portrait of Lars Huggert in Fig. 1. Niklas Apelqvist and Bert Viklund† are thanked for the work with the actual transfer of the collection from Dalby to the museum in Stockholm. Ellen Sandström, Julia Stigenberg and Natalie Dale-Skey Papillaud are all thanked for important contributions in transferring donated material into the main NHRS collection as well as making and updating catalogues of various parts of the donation. Emma Wahlberg is thanked for valuable comments on the manuscript.

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Figure 9. Representative of rare Hymenoptera families in the Huggert collection, scale bar: 2 mm.– A) *Monomachus* sp. (Monomachidae Ashmead, 1902); – B) *Ropronia garmani* Ashmead, 1897; – C) *Vanhornia eucnemidarum* Crawford 1909. Photo: Hege Vårdal.

Figur 9. Representanter av sällsynta stekelfamiljer i Huggertsamlingen, skala: 2 mm. – A) *Monomachus* sp. (Monomachidae Ashmead, 1902); – B) *Ropronia garmani* Ashmead, 1897; – C) *Vanhornia eucnemidarum* Crawford 1909. Foto: Hege Vårdal.

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Sammanfattning

Under sensommaren 2006 anlände Lars Huggerts insektssamling till Naturhistoriska Riksmuseet (NHRS). Vid en första uppskattning av samlingens storlek beräknades till att bestå av 30 000 torrmonterade skalbaggar, 23 000 steklar och 2 000 tvåvingar. I den här artikeln ges en översikt av stekeldelen i Lars Huggerts samling, samt en typlista för de 32 stekeltaxa beskrivna av Huggert som återfanns i den donerade samlingen. Dessa finns nu i NHRS typsamling och är registrerade i våra databaser.

Donationen innehöll material av minst 1 330 olika arter av steklar. Stekelfamiljer som hyllhornsteklar (Diapriidae Haliday, 1833), äggmärkarsteklar (Scelionidae Haliday, 1839) och gallmyggesteklar (Platygastridae Haliday, 1833) var särskilt välrepresenterade, och berikade museets samlingar med tiotusentals exemplar och minst 330 nya arter.

Huggert beskrev under sin livstid 80 nya arter, 34 släkten och undersläkten och ett tribus, huvudsakligen inom dessa familjer samt enstaka puppglanssteklar (Pteromalidae Dalman, 1820).

Förutom ett rikt tillskott av de grupper som Huggert själv studerade flitigast, fanns även material av stekelgrupper som saknades helt (fikonsteklar, Agaonidae Walker, 1846) eller fanns mycket få av i NHRS samling; gropglanssteklar (Perilampidae Förster, 1856), Roproniidae Bradley, 1905, Monomachidae Ashmead, 1902 och Vanhorniidae Crawford, 1909. Sammantaget är detta ett enormt viktigt och värdefullt tillskott av små och dåligt kända steklar som folk sällan samlar in till stekelsamlingen på Naturhistoriska Riksmuseet. Samlingen kommer vara en viktig källa för forskare och studenter som vill studera små parasitsteklar.