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Beyond Asilidae: The collecting effort of Dr Jason Londt as represented by non-Asilidae Diptera, Hemiptera and Mecoptera, housed in the KwaZulu-Natal Museum, South Africa

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collections, Jason Londt, types

Dr Jason Londt took up the position of Assistant Director at the Natal Museum (now KwaZulu-Natal Museum – KZN Museum. Collection acronym – **NMSA**) in 1976. In 1978 he was appointed Acting Head of Entomology – a post he held until 1990. He was appointed Director of the Natal Museum (KZN Museum) in 1994 (Barraclough and Whittington 1994). While his research focus was the taxonomy of Afrotropical Asilidae, he also contributed to the taxonomy of Mecoptera and collected impressive numbers of other Diptera and Hemiptera. Jason Londt's passion for entomology and collecting can clearly be seen in the number of specimens that he collected during his time at the KZN Museum. He also continued collecting and depositing material at the Museum well after he retired in 2003. In this tribute to Dr Jason Londt's collecting, we look at the numbers

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of non-asilid Diptera, Hemiptera and Mecoptera that he collected and that are deposited in the KwaZulu-Natal Museum collection, including types that have been described from his non-asilid collecting activities and species that have been named after him.

Methods

In order to assess Jason Londt's collection efforts, all the digitised records from the KZN Museum of the orders Hemiptera, Mecoptera and Diptera with "Londt" or "JGH Londt" listed as a collector (at the time of writing) were downloaded from the Museum's database and analysed. All the Asilidae records were excluded from the analysis. There are over 21 000 Asilidae records in the collection with "Londt" as the collector.

For an evaluation of collection effort over time, all records lacking a year were excluded. The remaining records were partitioned into five-year increments. The total number of records per partition was plotted using base R in R studio.

The contribution of Jason Londt's collection efforts were evaluated in terms of diversity and type specimens. All the records were filtered to unique names and blanks were removed. A count of unique taxon determination for all records and types in terms of family, genus and species designation (unique binomial name) was done. All records lacking a full species designation (i.e. binomial name) were excluded and were thus not counted. The same unique taxon determination was applied only to records with type status. Finally, a map of the localities for all the type specimens was plotted using QGIS version 3.22.13.

Discussion

Jason Londt is best known for his extensive work on Asilidae, but he also had an interest in Mecoptera that was established well before his appointment at the then Natal Museum. He published over a dozen papers on Mecoptera during his career, described a genus, 16 species and re-described six species that created new synonymies (Londt 1970, 1972a, b, 1976, 1977, 1978, 1981a, b, 1993, 1994a, b, 2007; Londt and Byers 1974). His collection effort for Mecoptera in respect of what was deposited in the KwaZulu-Natal Museum decreased drastically after his appointment at the Museum – presumably due to his focus shifting to Asilidae. Even so, he continues to collect and deposit Mecoptera to the present day (Fig. 1). In total, he collected over 300 Mecoptera (Table 1), including nine *Bittacus livingstonei* specimens (Fig. 2), a species he described (Londt 1981a). The specimens represent 14 species and two genera from various localities across South Africa and Malawi.

The number of Hemiptera that Jason Londt collected and deposited in the Museum was at its highest in the 1980s, increasing again in the early 2000s (Fig. 1). He collected over 5000 Hemiptera representing 43 families, 217 genera and 263 species (Table 1).

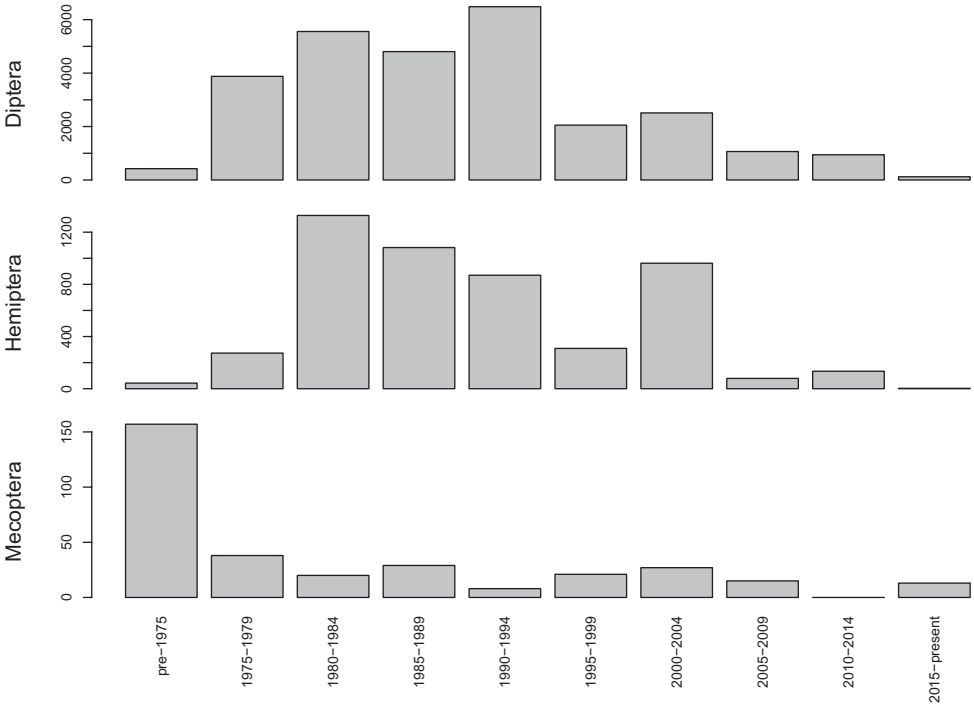

Figure 1. Non-asilid Diptera, Hemiptera and Mecoptera collecting effort by Jason Londt over time – represented by five-year increments and deposited in the KZN Museum.

Table 1. Representation of the diversity of Hemiptera, Mecoptera and non-asilid Diptera housed at the KZN Museum and collected by Jason Londt. Each record represents a specimen with digitised label data. The record data are summarised in terms of taxon-level representation.

	Total	Families	Genera	Species
Mecoptera				
Records	328	1	2	14
Holotypes	1	1	1	1
Allotypes	1	1	1	1
Paratypes	67	1	1	2
Hemiptera				
Records	5118	43	217	263
Holotypes	3	3	3	3
Allotypes	2	2	2	2
Paratypes	8	3	3	3
Diptera				
Records	27929	91	631	1139
Holotypes	95	31	61	95
Paratypes	281	32	58	89
Neotypes	1	1	1	1
MS Types	78	5	9	NA

Figure 2. Left: The holotype of *Bittacus livingstonei* Londt, 1981 (Mecoptera, Bittacidae – NMSA-MEC 137). Right: Holotype of *Anisops londti* Truxal, 1990 (Hemiptera, Notonectidae – NMSA-HEM 20420).

Three species – *Anisops londti* Truxal, 1990 (Notonectidae) (Fig. 2), *Peritropis obscurella* Gorezyca, 1998 (Miridae) and *Pseudoghiliana ornata* Maldonado, 1992 (Reduviidae) – were described from specimens he collected and are now represented by holotypes deposited in the Museum collection. Four Tingidae specimens he collected were also assigned type status – one allotype and three paratypes of *Cochlochila londti* Duarte Rodrigues, 1976.

Jason Londt not only collected Asilidae, he also collected many other Diptera. Nearly 28 000 non-asilid Diptera specimens bear his collection label in the Museum. Of those specimens, 95 have been described as new species, of which 18 were attributed to him (Table 1) – 14 as "londti", one as "londtorum and three as "jasoni". The species named after Jason Londt are from 16 different families (Table 2). This illustrates the remarkable variety of the flies he collected. Between 1975 and 1994, before he was appointed director, Jason Londt collected and deposited ~ 750 to ~ 1300 non-asilid Diptera specimens per year into the Museum collection. Even though there was a notable drop in his collecting after his appointment as director, he continued to add specimens to the collection, which is a reflection of his unwavering dedication to dipterology.

While the bulk of Jason Londt's collecting was done in South Africa and specifically the KwaZulu-Natal Province where the KZN Museum is located, he also collected specimens on several expeditions to other African countries. Several specimens collected in Namibia, Eswatini (formerly Swaziland), Kenya, Malawi and the Ivory Coast were also described as new species. (Fig. 3). Most new species, however, were non-asilid Diptera from KwaZulu-Natal Province, South Africa.

The value of Jason Londt's collecting is clearly seen in the number of new species that have been described from the material that he collected. Beyond his world-renowned contribution to the taxonomy of Asilidae, Jason Londt's collection efforts have not only helped shape the entomology collection at the KZN Museum, they have had a huge impact on the international Diptera community, as reflected by the number of species attributed to him. His interest in Mecoptera and Hemiptera has also had lasting effects. Jason Londt has undoubtedly left an impressive legacy as a highly regarded South African entomologist.

Table 2. The species named after Jason Londt from material he collected housed in the KZN Museum.

Species	Family	Author, Date
Acrocera londti	Acroceridae	Barraclough, 1984
Afrocamilla londti	Camillidae	Barraclough, 1997
Teloglabrus londti	Diopsidae	Feijen, 1983
Paracleius jasoni	Dolichopodidae	Grichanov, 2004
Pseudargyrochlamys jasoni	Dolichopodidae	Grichanov, 2020
Leucophenga londti	Drosophilidae	Bächli et al., 2005
Acarterus londti	Empididae	Sinclair, 1996
Atherigona londti	Muscidae	Muller, 2015
Mycomya londti	Mycetophilidae	Väisänen, 1994
Chaetonerius londti	Neriidae	Barraclough, 1993
Aenigmatistes londti	Phoridae	Disney, 1991
Mesanopin londti	Platystomatidae	Whittington, 2003
Nemotelus londtorum	Stratiomyidae	Mason, 1997
Syritta londti	Syrphidae	Lyneborg & Barkemeyer, 2005
Philoliche (*Ommatiosteres*) *londti*	Tabanidae	Chainey, 1983
Orthactia londti	Therevidae	Lyneborg, 1988
Vermilynx jasoni	Vermileonidae	Stuckenberg, 1996
Vermipardus londti	Vermileonidae	Stuckenberg, 1995

Figure 3. A map of Africa showing the localities of all the type specimens of Mecoptera, Hemiptera and non-asilid Diptera collected by Jason Londt, which are housed in the KZN Museum collection.

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