

The illustrative genius of Michael J. Roberts (1945–2020): original artworks at the Natural History Museum, London

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Abstract

The purpose of this paper is a celebration of Michael J. Roberts's illustrative genius. It provides details about the illustrations comprising the Michael J. Roberts archive at the NHM, explains how they can be accessed by scholars, discusses how they are housed and their conservation issues, and touches upon Roberts's illustrative techniques with examples from the archive. It also showcases several plates from each of his major publications to further exemplify Roberts's considerable talents. For the future, a potential collaborative project between the NHM and the British Arachnological Society is considered, to enable scholars to view more easily the illustrations online via a portal. This paper is of interest to anyone who is interested in spiders, who uses Roberts's illustrations for identification purposes and for scientific illustrators and artists.

Keywords: annotations • archive • conservation • housing • identification • pen and ink • plates • techniques • watercolour

Introduction

Michael J. Roberts (1945–2020) was somewhat of a polymath, having been a general practitioner, a highly skilled illustrator and author, an expert arachnologist, an engaging leader of spider field trips, a top-grade arachnid workshop tutor, and a renovator of old farmhouses! Davidson (2021), in his excellent obituary, details with lively humour all of these areas. Roberts produced a staggering 1350 spider-related plates, which were published in the *Spiders of Britain and Northern Europe* (Roberts 1995), *The Spiders of Great Britain and Ireland* (Roberts 1985a,b, 1987), *Spider Families of the World and their Spinnerets* (Murphy & Roberts 2015) and *Gnaphosid Genera of the World* (Murphy 2007). The Natural History Museum in London (NHM) owns all of these plates. Roberts even produced line drawings for other publications on moths, leaf and stick insect eggs, and on exotic spiders, including tarantulas, but these will not be discussed in detail here. Davidson (2021) also detailed the development of Roberts's illustrative talents, and the inception and production of the spider plates and books, so it is not the intention to replicate this information.

The purpose of this paper is a celebration of Roberts's illustrative genius. It provides details about the illustrations comprising the Michael J. Roberts archive at the NHM, explains how they can be accessed by scholars, discusses how they are housed and their conservation issues and touches upon Roberts's illustrative techniques with examples from the archive. It also showcases several plates from

each publication to further exemplify Roberts's considerable talents. It will be of interest to anyone who is interested in spiders, who uses Roberts's illustrations for identification purposes, and for scientific illustrators and artists.

NHM holdings

Below is a list of all the collections which comprise the Michael J. Roberts archive at the NHM.

- Original line drawings and coloured plates from *Spiders of Britain and Northern Europe* (Roberts 1995): 144 art originals (in two boxes), 32 coloured plates and cover illustration. Received 07 September 2013. Digitized.
- Text figures and coloured plates from *The Spiders of Great Britain and Ireland* (Roberts 1985a,b, 1987): 194 text figures, 237 coloured plates (in 16 boxes). Purchased from Michael Roberts with support from the National Art Collection Fund, 2002. Digitized.
- Original line drawings from *Spider Families of the World and their Spinnerets* (Murphy & Roberts 2015) and *Gnaphosid Genera of the World* (Murphy 2007): 731 original illustrations. Donated by John Murphy. Not digitized.
- Collection of 10 pen and ink drawings and one watercolour, c. 1970. Received 07 September 2013. Digitized.
- Collection of c. 600 graphite drawings, tracings and ms notes of spiders (in four folders), approximately 1990s. Received 07 September 2013. Not digitized.

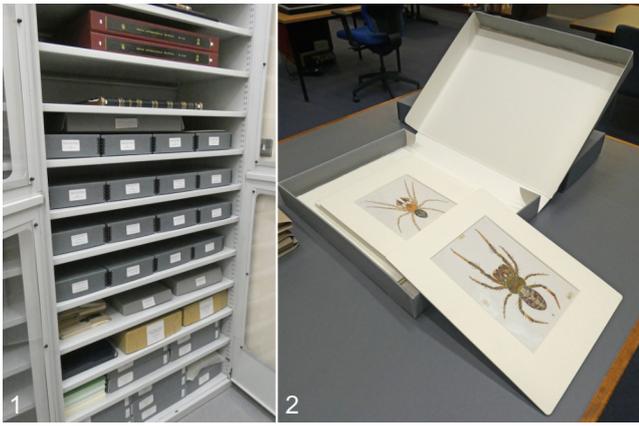
Unless otherwise stated, all images used in this paper are copyright of The Trustees of the Natural History Museum, London.

Accessing the archive

In order to arrange a visit to view the archive in person or to access the digitized images, visit the NHM website (<https://nhm.ac.uk>). Click on **Search** in the menu bar at the top of the page. In the **Search** field, type in **Library and Archives** and run a search. Click on the first entry **Library and Archives | Natural History Museum - London**. Scroll down the page to **Using our Services**, click on **Visitors**, and select **Public Visitors**.

How is the archive housed?

The Michael J. Roberts archive forms part of the Special Collections in the Library and Archives Department. It is specially housed in two locked glass-fronted cabinets (Fig. 1) in a locked room. The different forms of housing of each collection are due in part to when they were acquired, as well as to the different types and formats of the illustrations within. Many of Roberts's illustrations (those from *Spiders of Britain and Northern Europe*, as well as those from *The Spiders of Great Britain and Ireland*), are housed in bespoke boxes which were either made in house or purchased specially (Fig. 2). These are constructed from acid-free box board with archival metal edges. Other collections are still in their original housing (Figs. 3–6). The plates from both *Spider Families of the World and their Spinnerets* and *Gnaphosid Genera of the World* are wrapped in a conservation-grade 100% polyester sheeting, tied by cotton twill

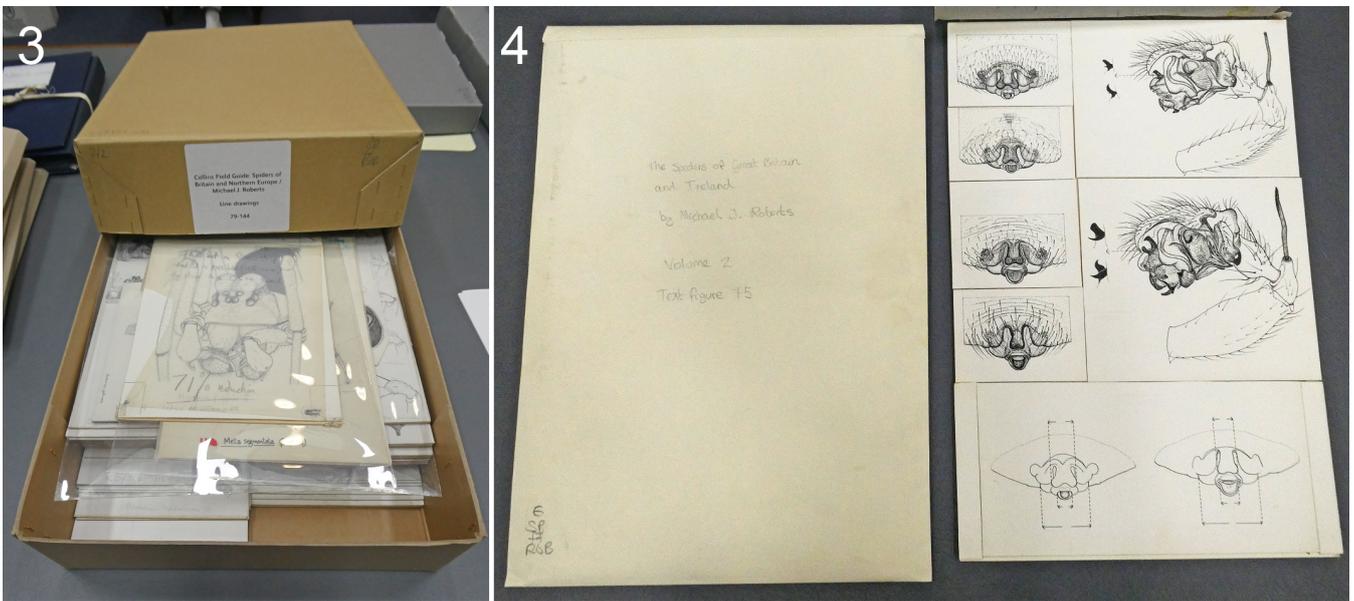


Figs. 1–2: **1** one of the two locked cabinets housing the archive; **2** example of a bespoke box containing plates from part of the archive. Credit: Janet Beccaloni.

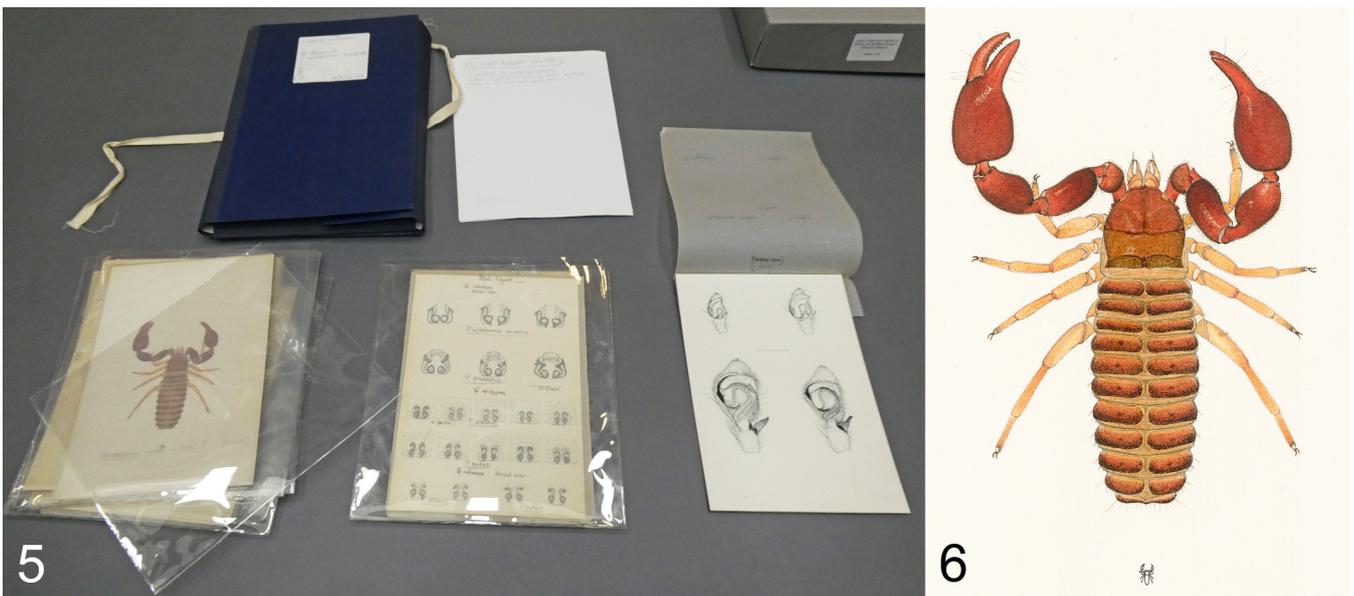
book tape and placed in bespoke hinge-lidded boxes made from box board (Figs. 7–8). Some of the colour plates from *The Spiders of Great Britain and Ireland* have been individually mounted. This is in the form of an acid-free card back-board with a 3-sided edge into which the plate is placed. This is overlaid by archival transparent sheeting attached to a hinged card mount with a large aperture (Fig. 9).

Conservation problems

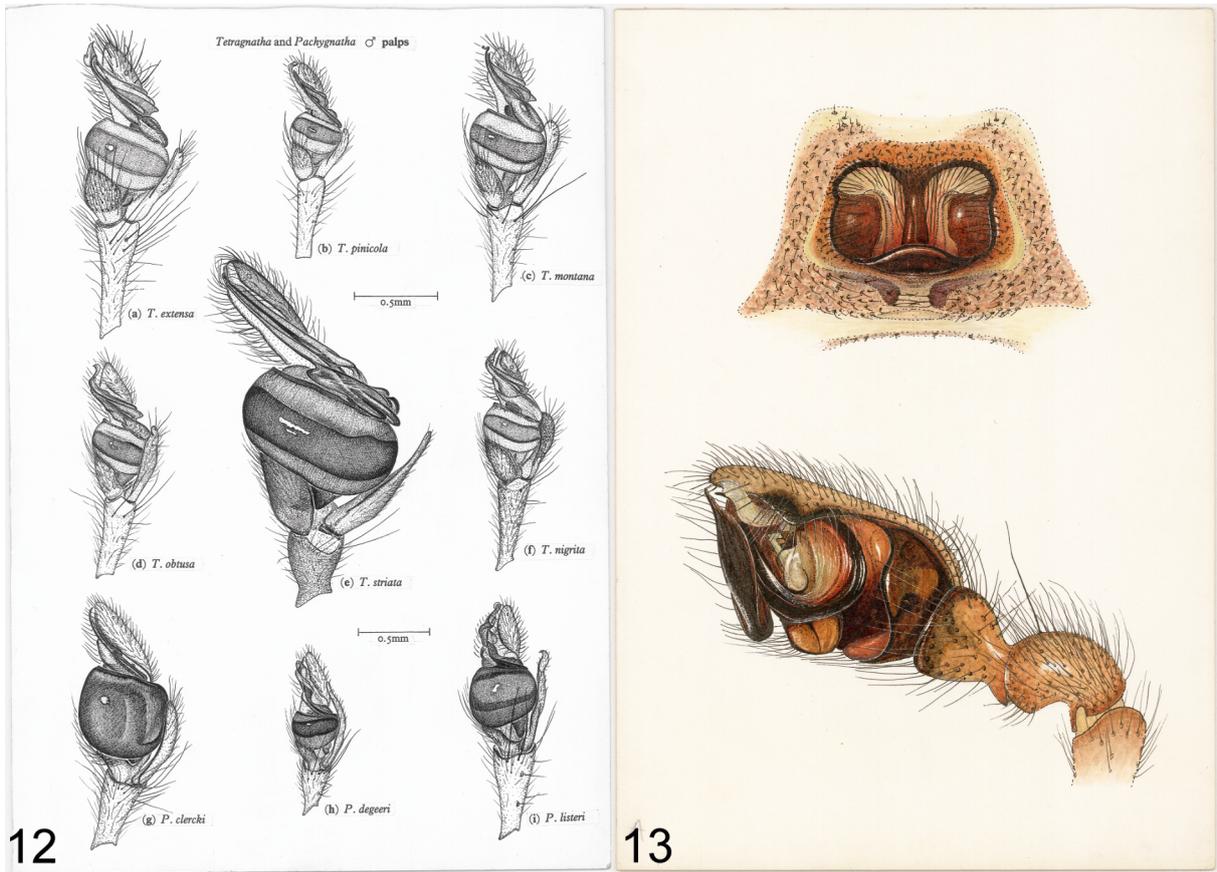
The vast majority of Roberts’s artworks have no conservation problems. However, there are two minor areas which will be mentioned. Several of the plates for *The Spiders of Great Britain and Ireland* comprise four small plates which



Figs. 3–4: *Spiders of Britain and Northern Europe*. **3** box of line drawings of plates 79 to 144; **4** large envelope of text figures. Credit: Janet Beccaloni.



Figs. 5–6: ‘Collection of 10 pen and ink drawings and one watercolour’. **5** examples of genitalia pen and ink drawings from along with the file that houses them; **6** watercolour plate of false scorpion from this collection: plate 11a, 265 × 183 mm. Credits: Janet Beccaloni (5), The Trustees of the Natural History Museum, London (6).



Figs. 12–13: *The Spiders of Great Britain and Ireland*. **12** male palps in ink on board, plate number 89; 265 × 185 mm; **13** male palp and female epigyne in watercolour and ink on board, plate number 239a, 265 × 185 mm. Credit: The Trustees of the Natural History Museum, London.

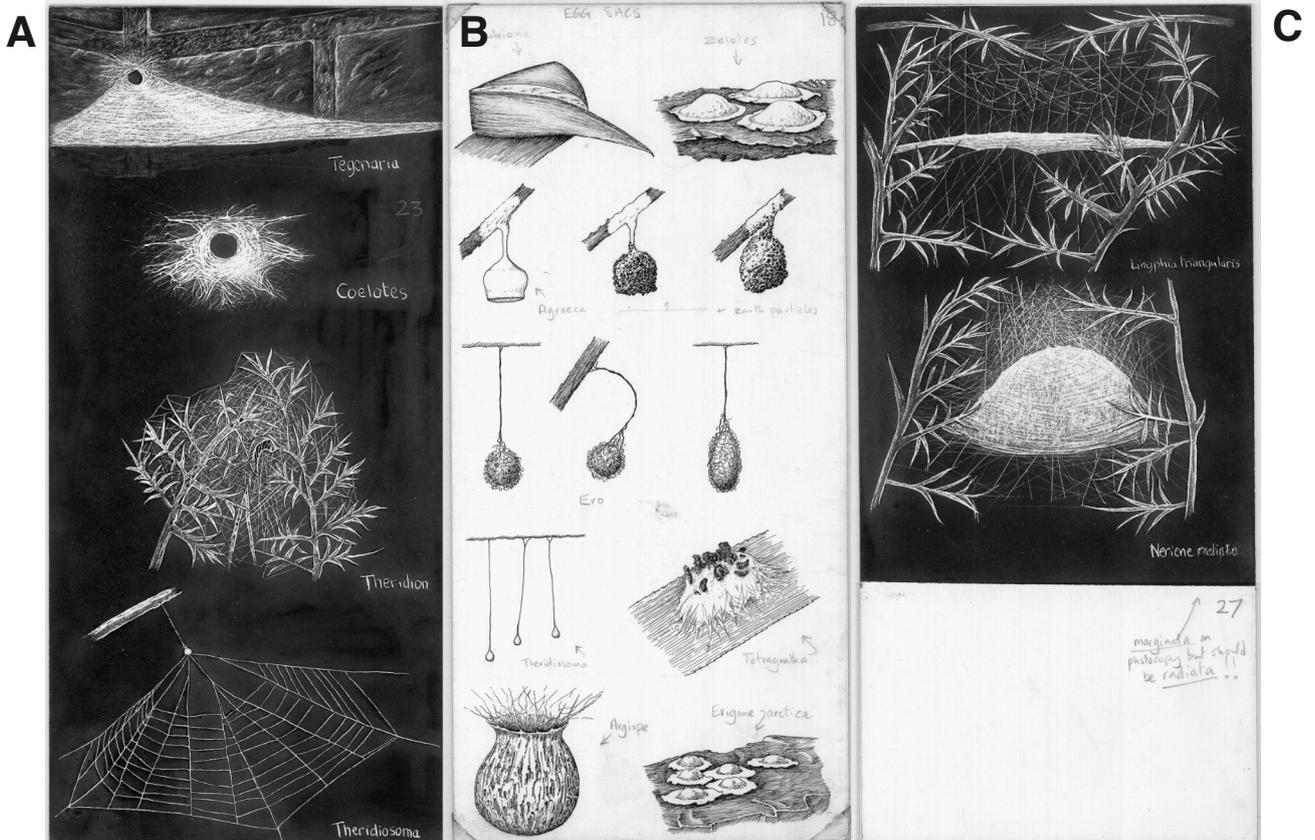


Fig. 14: *Collins Field Guide to Spiders of Britain and Northern Europe*. **A** plate 23; **B** plate 18; **C** plate 27. All 320 × 150 mm. Credit: The Trustees of the Natural History Museum, London.

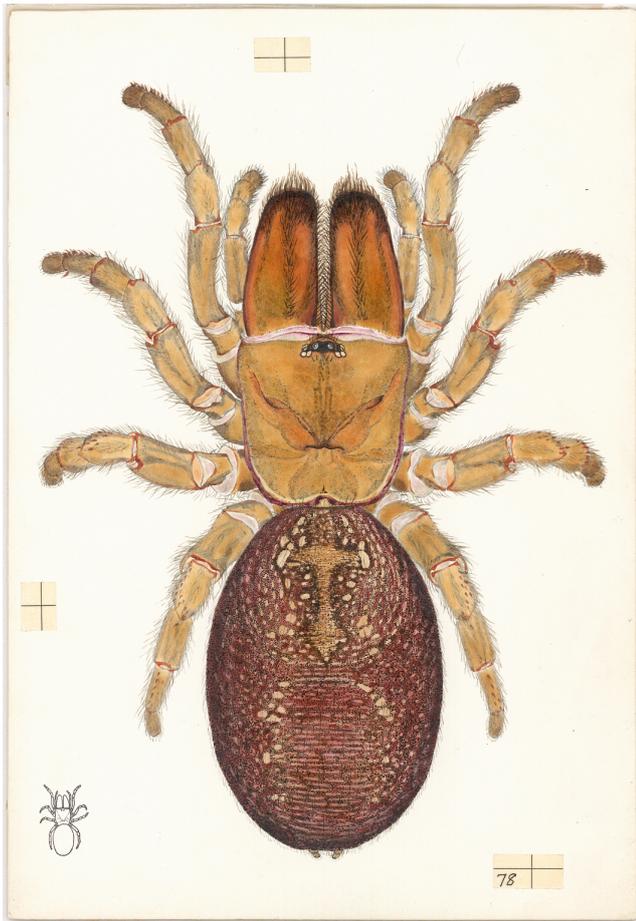


Fig. 15: *Atypus affinis* Eichwald, 1830 (Atypidae), plate 1, 265 × 185 mm, from *The Spiders of Great Britain and Ireland*. Credit: The Trustees of the Natural History Museum, London.

Roberts's illustrative technique

Use of different media

Roberts used pen and ink, as well as watercolour, and a combination of the two. He usually used pen and ink for genitalia plates (Fig. 12), although very occasionally he used watercolour (Fig. 13). To produce his stunning images of webs and egg sacs, Roberts used both black ink on white board and white paint on black board (Fig. 14). Almost all of his whole-specimen plates are in watercolour. Fig. 15 is an example of one of his beautiful large colour plates. In this illustration of *Atypus affinis* Eichwald, 1830, one can see the gorgeous use of colours and the extremely finely detailed hairs. Fig. 16 exemplifies the use of mixed media, combining the use of watercolour for the prosoma and the opisthosoma, with black ink line-drawn legs.

Overlays & annotations

Roberts regularly employed the technique of tracing paper overlays on many of his illustrations. This enabled him to annotate (usually with scientific name and plate number) without affecting the original plate (Fig. 17). He also employed this technique for the *Spiders of Britain and Northern Europe* cover illustrations, allowing him to annotate the plate to indicate where the separate components should be placed on the spine and book covers (Fig. 18). Roberts also occasionally attached notes to the overlay (Fig. 19). He made notations on the back of his plates for *Spiders*

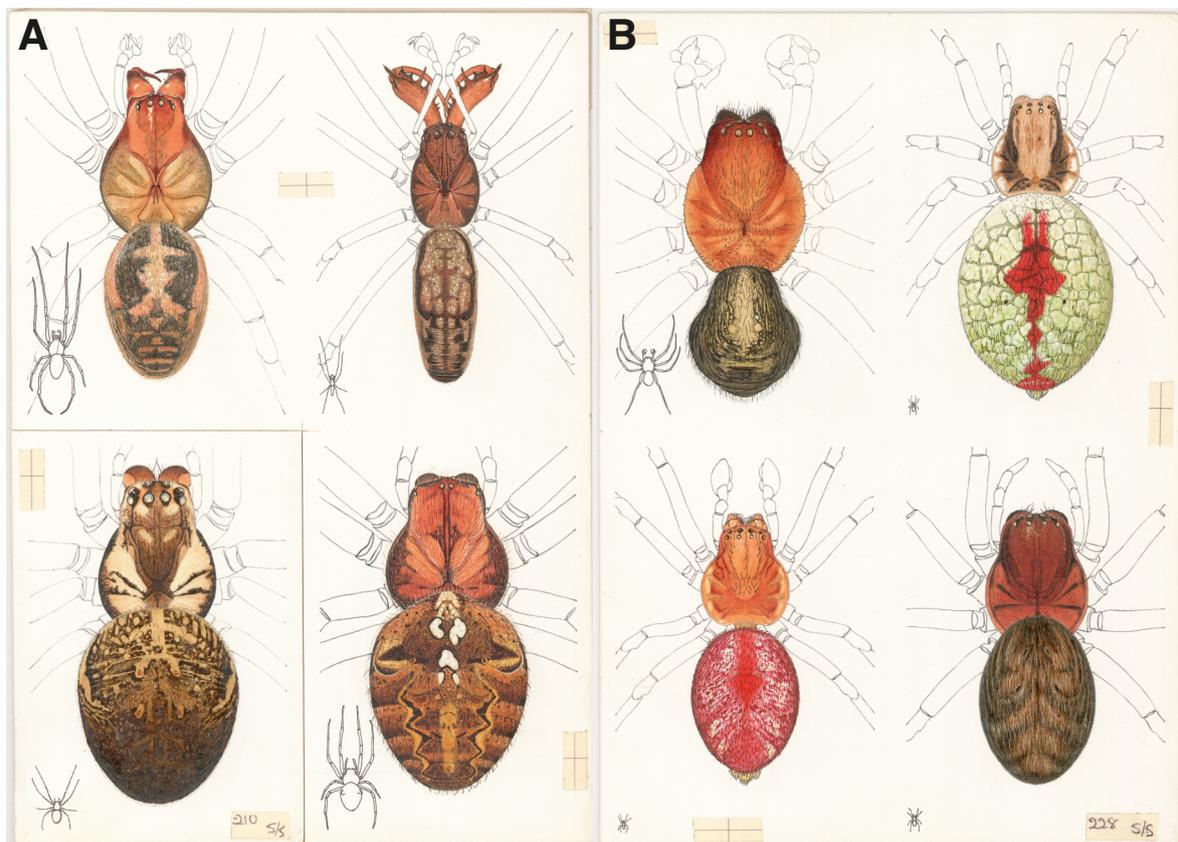
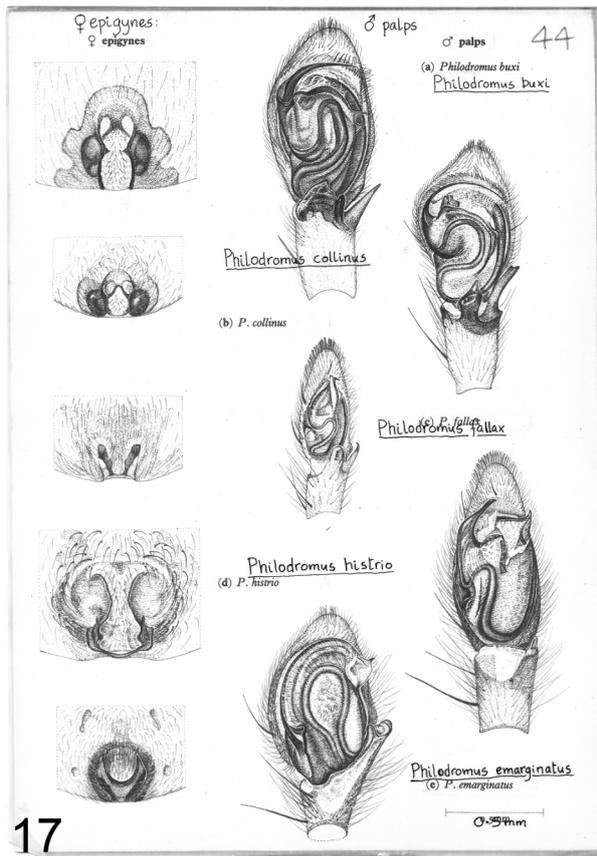
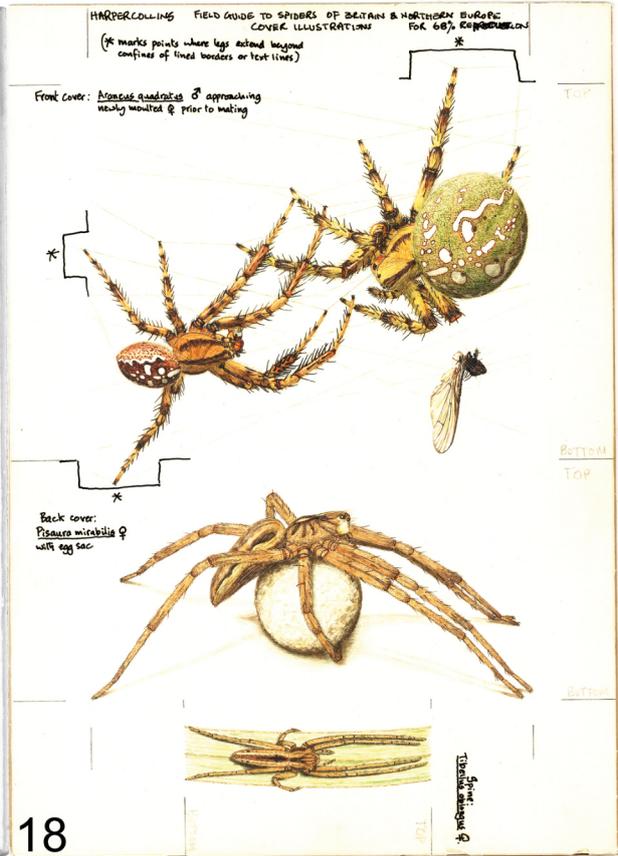


Fig. 16: *The Spiders of Great Britain and Ireland*. **A** plate 135; **B** plate 7. Both 265 × 185 mm. Credit: The Trustees of the Natural History Museum, London.



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18

Figs. 17–18: 17 plate 44, 265 × 185 mm, from *The Spiders of Great Britain and Ireland*; 18 watercolour plate with cover illustrations for *Spiders of Britain and Northern Europe*, 320 × 225 mm. Credit: The Trustees of the Natural History Museum, London.

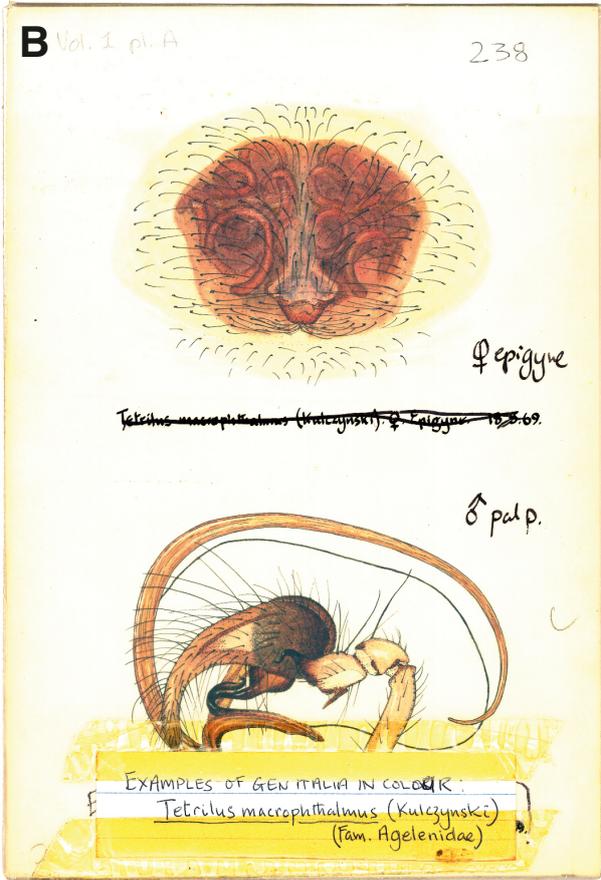
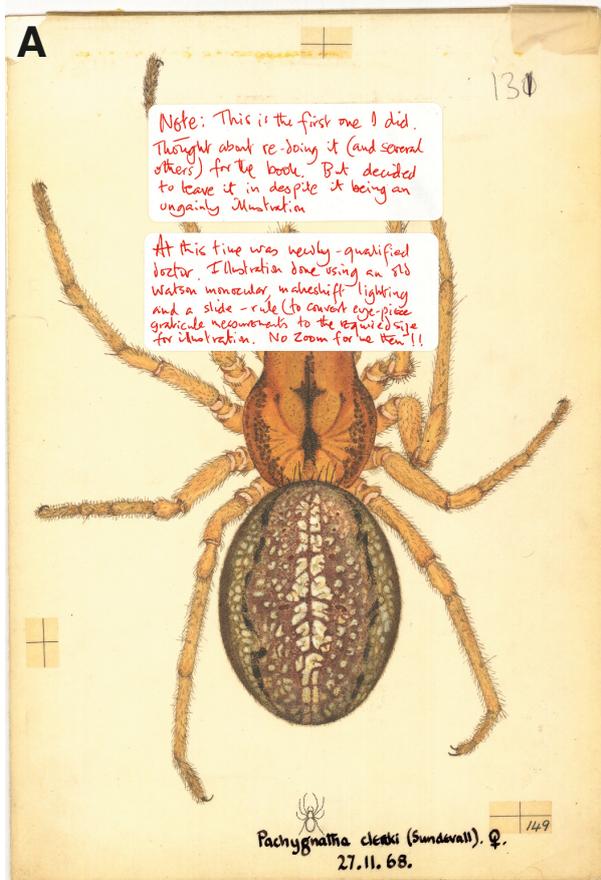


Fig. 19: *The Spiders of Great Britain and Ireland*. A plate 131; B plate 238. Both 265 × 185 mm, from Credit: The Trustees of the Natural History Museum, London..

LIPHISTIIDAE

Heptathela kikuyai Ono 1998

JAPAN: ♀: Koubaru, Taketa-shi, Oita Pref., Kyushu
 5.X.2004 Coll. T. Irie Det. H. Ono
 NSMT-Ar 8720
 ♂: Takachiho-cho, Nishi usuki-gun, Miyazaki Pref.
 24.X.2006. Coll. T. Irie Det. H. Ono
 NSMT-Ar 8721.

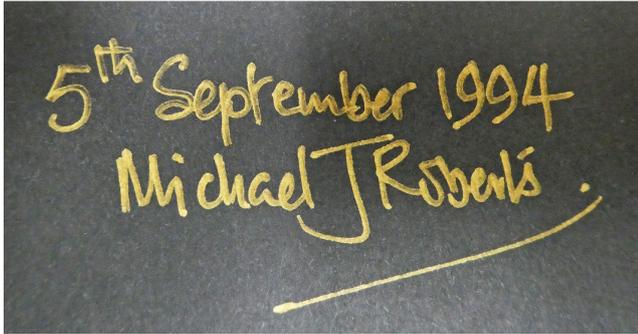


Fig. 20: Plate for *Heptathela kikuyai* Ono, 1998, *Spider Families of the World and their Spinnerets* (top), and Roberts's signature in gold pen on the back of one of his plates (bottom). Credit: Janet Beccaloni.

of the World and their Spinnerets, detailing specimen identification, sex of specimen, collecting locality, collecting date, specimen number and name of specimen identifier. Occasionally he signed and dated his artwork (Fig. 20).

Resizing: the use of graph paper

How Roberts produced his extremely detailed plates becomes clear when studying the undigitized collection of graphite drawings on graph paper (Fig. 21). Roberts was “drawing at a very consistent scale from the microscope and using graph paper to allow him to scale up for the final drawing to maximise the detail and resolution available in the photo reduction which was necessary for the published images. So essentially scaling up the image to get the detail in and then reducing for the final image. This of course makes the lines appear finer and provides the detail we so value” (Mike Davidson pers. comm. January 2022). Fig. 22 shows a whole specimen drawing, with epigyne and palp drawings. Examples of Roberts's scale calculations (mainly in graphite but partly in Biro) are seen in Fig. 23. Roberts then used the age-old technique of tracing in order to transfer these graphite images onto the art boards he used for his final plates (Fig. 24). Fig. 25 demonstrates the accuracy of

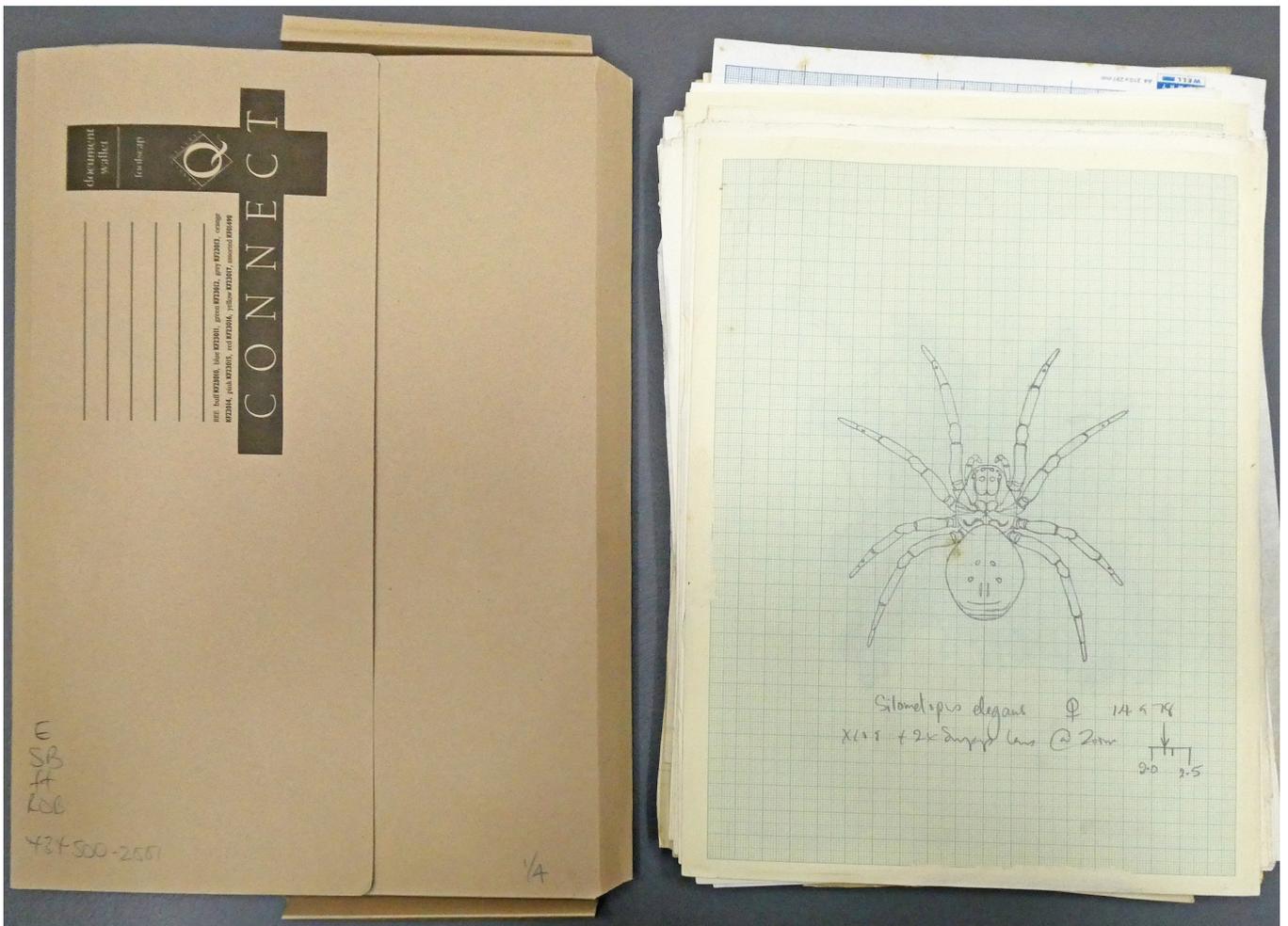


Fig. 21: Pile of graphite drawings on graph paper and the file which houses them. Credit: Jan Beccaloni.

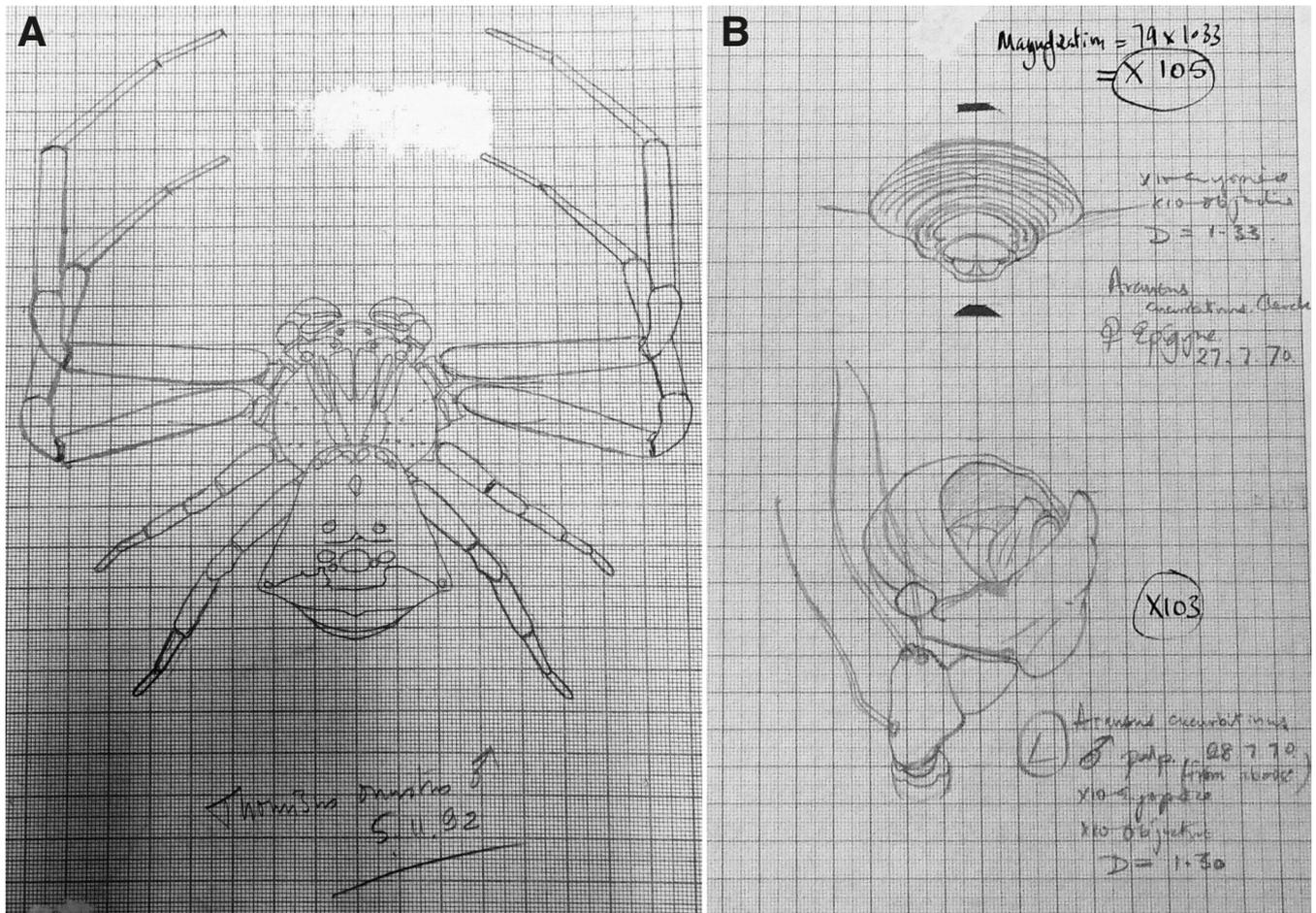


Fig. 22: ‘Collection of circa 600 graphite drawings, tracings and ms notes of spiders’. **A** sketch of *Thomisus onustus* Walckenaer, 1805; **B** sketch of a palp and epigyne. Credit: Jan Beccaloni.

Roberts’s illustrations compared to the live specimens. As can be seen from this example, his skill is undeniable.

Positioning of specimens

Roberts employed several techniques when positioning his spiders on their plates. Fig. 26 shows both life-like habitus and preserved specimen habitus.

Life-like habitus: although Roberts was drawing from preserved specimens, he endeavoured to depict a life-like habitus. For example, the legs of *Argiope bruennichi* (Scopoli, 1772) are depicted as if it is sitting in its web. The distinctive laterigrade leg positioning of the crab spider *Xysticus cristatus* (Clerck, 1757) is depicted as in life.

Preserved specimen habitus: the uneven leg positioning on this specimen of *Coelotes atropos* (Walck.) is typically found in alcohol-preserved specimens which cannot be manipulated into life-like positions.

Smaller format habitus: As detailed in Davidson (2021), Roberts had to re-draw his plates to fit a smaller format for *Spiders of Britain and Northern Europe*. Fig. 27 shows that Roberts extended the legs where possible but had to overlay the legs in order to fit more species on a page. Spiders at the edge of the plates tend to have their legs folded into the bodies on that side.

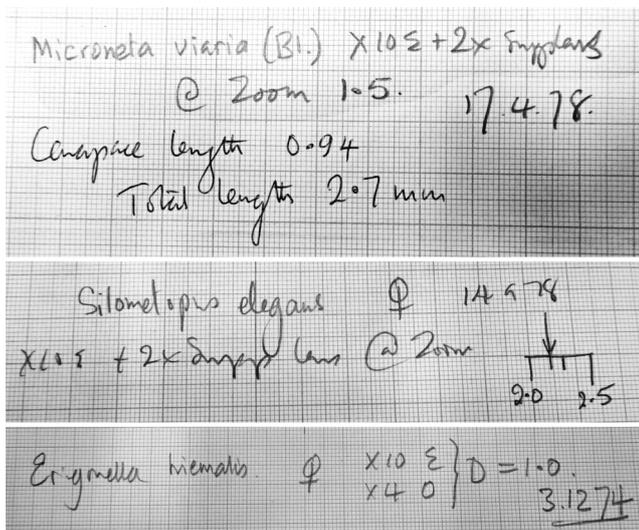


Fig. 23: From ‘Collection of c. 600 graphite drawings, tracings and ms notes of spiders’. Credit: Jan Beccaloni.

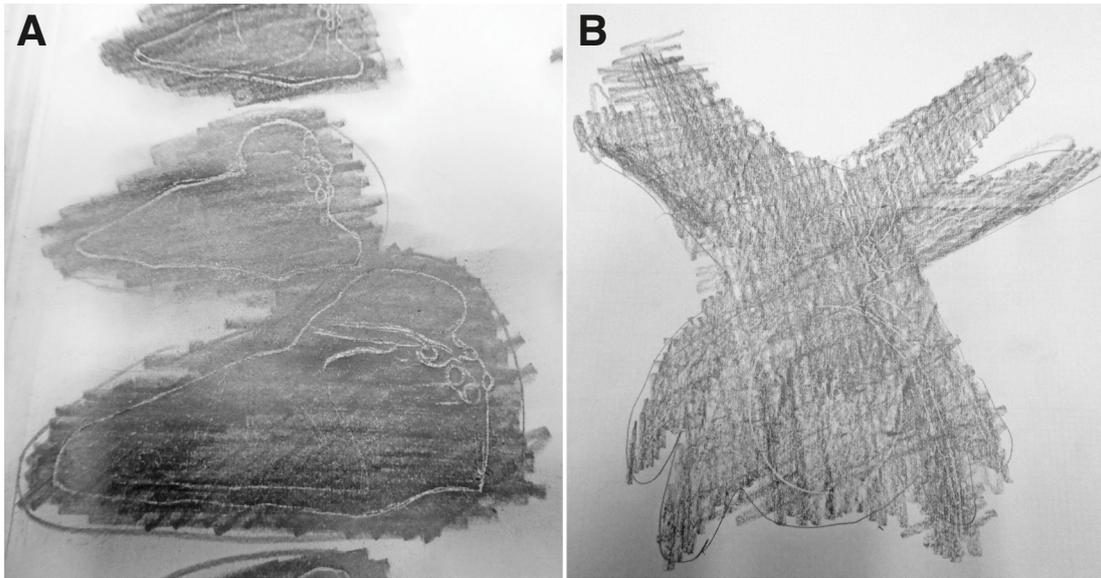


Fig. 24: 'Collection of c. 600 graphite drawings, tracings and ms notes of spiders', examples of the transfer method used for Linyphiidae. **A** adult male carapaces; **B** whole body. Credit: Jan Beccaloni.

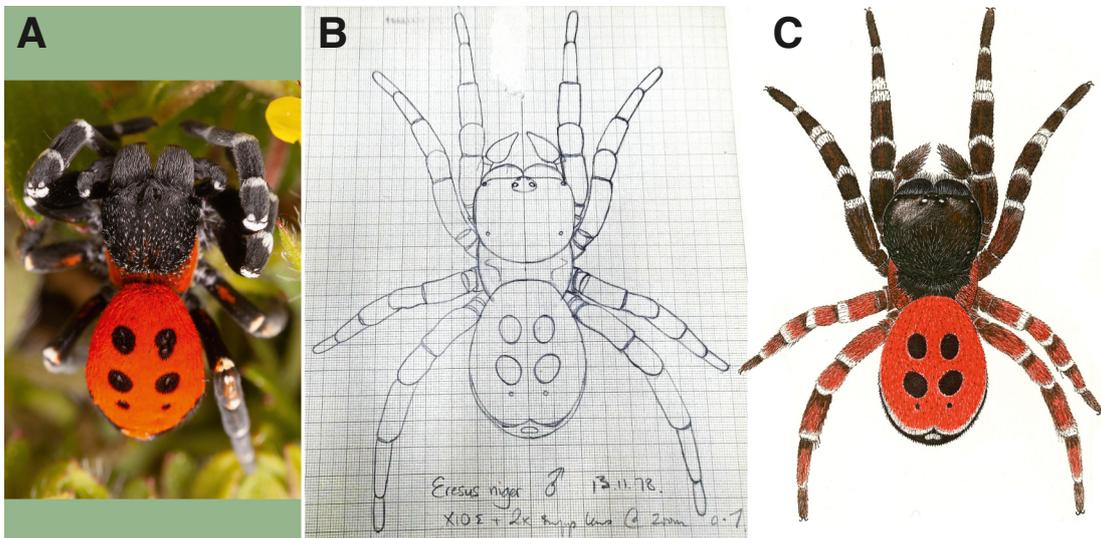


Fig. 25: **A** photograph of a live specimen of *Eresus sandaliatus* (Martini & Goeze, 1778); **B** graphite sketch of this species on graph paper; **C** final colour plate produced from this graphite sketch from *Spiders of Britain and Northern Europe*. Credits: Pavel Krásenský, Regional Museum and Gallery in Most, Czech Republic (A); Jan Beccaloni (B); The Trustees of the Natural History Museum, London (C).

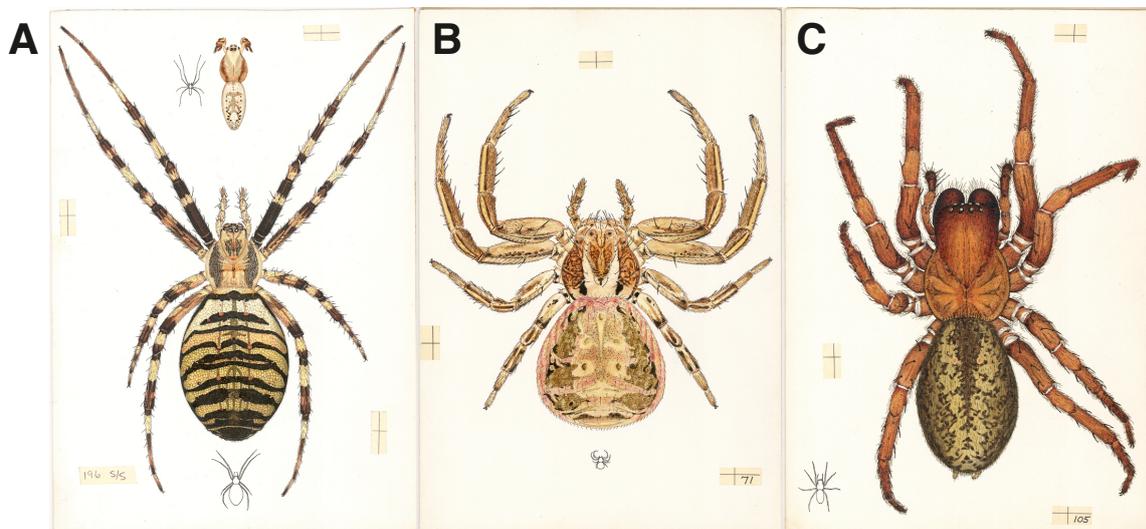


Fig. 26: *The Spiders of Great Britain and Ireland*. **A** *Argiope bruennichi* (Scopoli, 1772) (Araneidae), plate 156; **B** *Xysticus cristatus* (Clerck, 1757) (Thomisidae), plate 43; **C** *Coelotes atropos* (Walckenaer, 1830) (Agelenidae), plate 93. All 262 × 182 mm. Credit: The Trustees of the Natural History Museum, London.

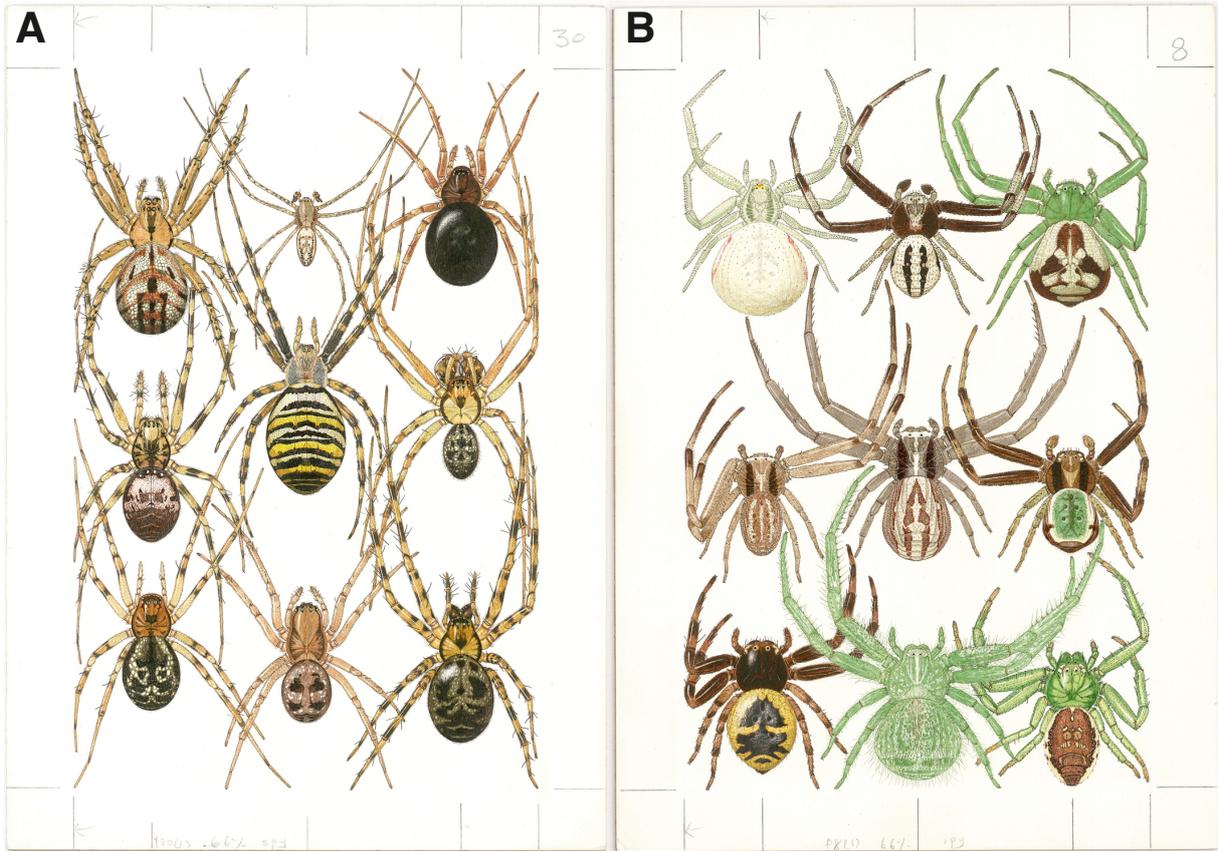


Fig. 27: *Spiders of Britain and Northern Europe*. **A** plate 30; **B** plate 8. Both 320 × 225 mm. Credit: The Trustees of the Natural History Museum, London.

Other examples of Roberts’s work

Figs. 28–30 are other examples of Roberts’s illustrations from each of the four books.

- *The Spiders of Great Britain and Ireland* (Fig. 28).
- *Spiders of Britain and Northern Europe* (Fig. 29).
- *Gnaphosid Families of the World* and *Spider Families of the World and their Spinnerets* (Fig. 30).

Conclusion

Davidson (2021) rightly stated that Roberts left a legacy. Part of his legacy—the wonderful, stunning and beautiful spider illustrations, will hopefully exist in perpetuity, and will continue to be studied and enjoyed by arachnologists, scientific illustrators and artists alike.

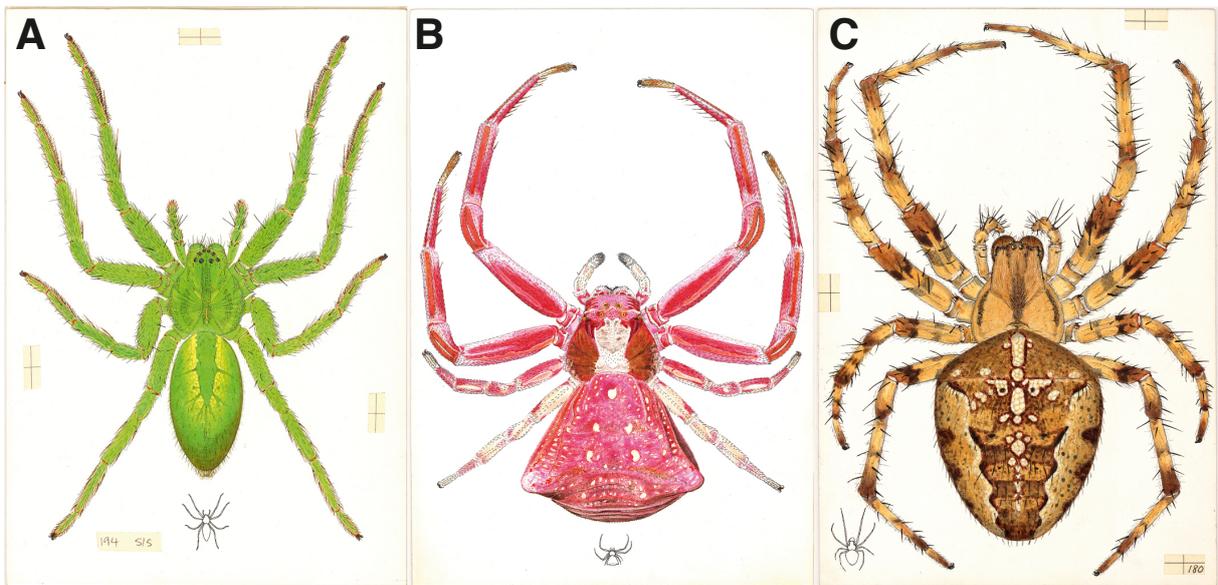


Fig. 28: *The Spiders of Great Britain and Ireland*. **A** *Micrommata virescens* (Clerk, 1757) (Sparassidae), plate 39a, 265 × 185 mm; **B** *Thomisus onustus* Walckenaer, 1805 (Thomisidae) Plate 40, 262 × 182 mm; **C** *Araneus diadematus* Clerck, 1757 (Araneidae), plate 137, 262 × 182 mm. Credit: The Trustees of the Natural History Museum, London.

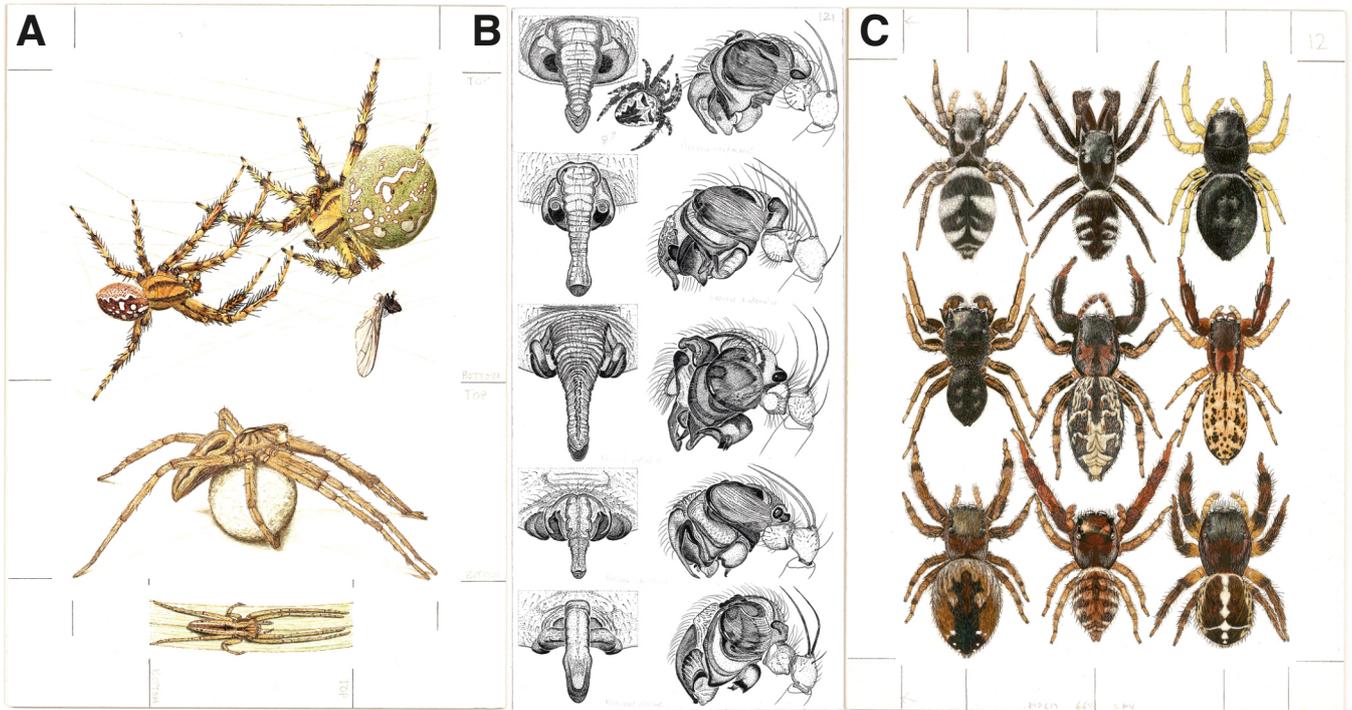


Fig. 29: *Spiders of Britain and Northern Europe*. **A** plate with cover illustrations 320 × 225 mm; **B** line drawings of the genitalia of *Araneus* species (Araneidae), plate 121, 320 × 150 mm; **C** plate 12 with Salticidae, 320 × 225 mm. Credit: The Trustees of the Natural History Museum, London.

The future?

Mike Davidson (pers. comm. March 2021) wondered “whether there was scope for some agreement between [the] BAS, NHM, HarperCollins, whoever now owns the Harley books copyright, and any other copyright owner for his unpublished work, to make Mike’s extensive original art-

work more accessible”. What is envisaged “is some sort of portal between the NHM and the BAS websites so that arachnologists could easily view digital copies for private study purposes ... [which should] be of benefit to both organisations”. Since this suggestion was made, a tentative approach to the NHM has been welcomed. A plan to take this forward will be created later in 2022.

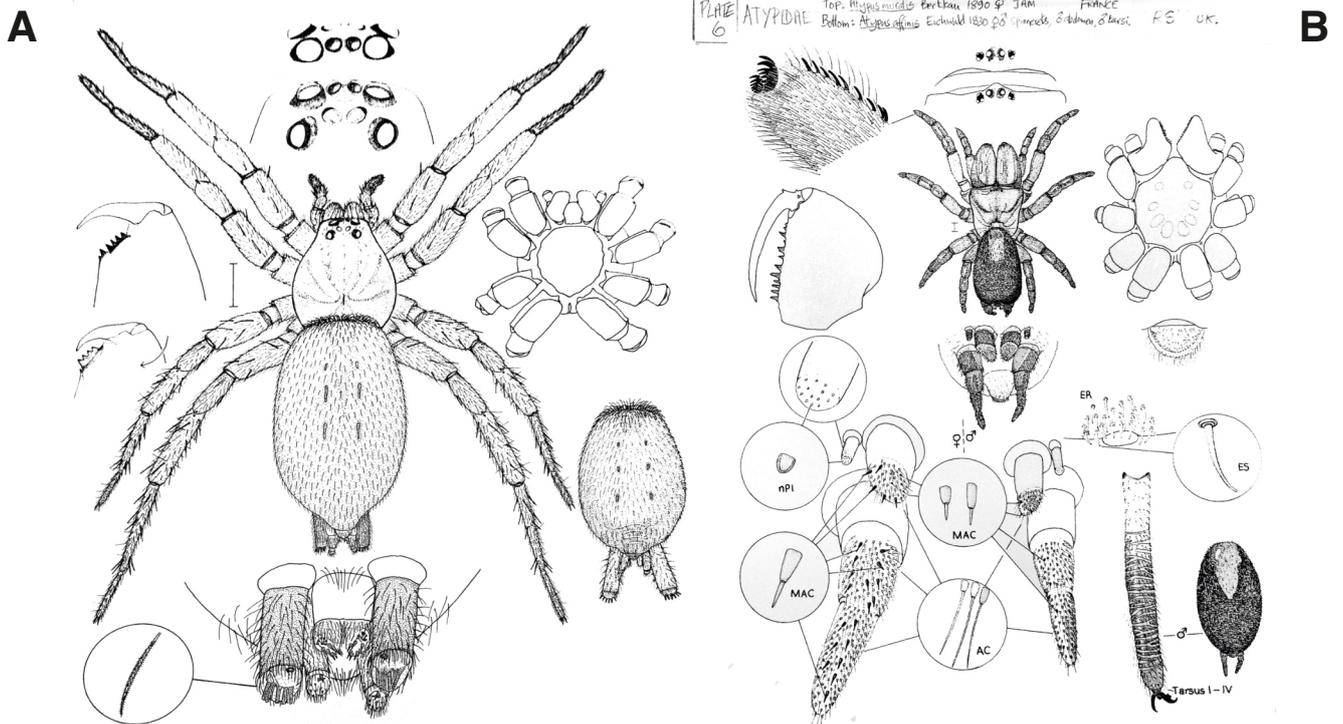


Fig. 30: **A** plate from *Gnaphosid Genera of the World* (2007); **B** plate from *Spider Families of the World and their Spinnerets* (2015). Pen & ink on board. Credit: The Trustees of the Natural History Museum, London.

Acknowledgements

First, I would like to thank Dmitri Logunov for encouraging me to write this paper. After my initial agreement, I declined because of time restraints, but Dmitri highlighted that the *Festschrift* would not be complete without a paper on Roberts's illustrations—and how right he was! I would also like to thank him for all of his hard work on editing the paper and pulling together the plates. I would like to give a special thank you to Andrea Hart, Special Collections Librarian (Library & Archives Department, NHM), who: 1) provided me with a list of Roberts holdings, 2) gave up her very limited time to bring out a chunk of the Roberts archive for me to study and glory over, 3) discussed the housing and conservation problems of the archive, and 4) enabled me to access the NHM scanned image files. Thank you to Mike Davidson for: 1) providing clarification about Roberts's use of graph paper, 2) suggesting a portal between the BAS websites and the NHM website, and 3) putting Mike Roberts's ex-wife Debbie Roberts in touch with me. This has enabled the NHM to resolve the issue of image copyright and thus enabled me to reproduce the plates in this paper. I would like to take this opportunity to thank Debbie her for all of the work that she put in to assist Mike with his books. I am grateful to Dr Pavel Krásenský, Head of Department of Nature and Science at the Regional Museum and Gallery in Most, Czech Republic (his webpage: www.macrophotography.cz) who kindly provided me with a live photo of *Eresus sandaliatus* (Fig. 25A). Last, but not least, I want to thank Danni Sherwood and an anonymous reviewer for their helpful suggestions when reviewing this paper.

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