

David Longsdon (1864–1937) and his collection of swallowtail butterflies (Papilionidae) at the Manchester Museum

Давид Лонгсдон (1864–1937) и его коллекция парусников (Papilionidae) в Манчестерском музее

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КЛЮЧЕВЫЕ СЛОВА: Lepidoptera, Papilionidae, коллекция бабочек, аврелианцы-коллекционеры, архив, история.

ABSTRACT. David Longsdon's world collection of Papilionidae was bequeathed to The Manchester Museum in 1938 on Longsdon's death. The collection is very comprehensive and consists of 9,301 specimens representing 504 species in 26 genera and accounting for some 87% of all described species of Papilionidae. The collection also contains 51 type specimens (syn-types and two paralectotypes) of 21 species names, of which four are still valid. The butterflies were collected in the last decade of the 19th century and the first three and a half decades of the 20th century. In the early years of the 20th century Longsdon began bargaining with three well-established natural history suppliers (Swinhoe, Rosenberg and 'Staudinger and Bang-Haas') and assiduously retained all these dealings in an archive. A detailed study of the relationships with his three major suppliers of butterflies revealed how tenacious he was in getting value for money for his purchases. The archive also highlights how the world of the well off British armchair collector of tropical butterflies contrasted sharply with the risky nature of the collector in the field, who had to cope with many hazards in collecting insects for the Victorian and Edwardian Aurelians.

РЕЗЮМЕ: Мировая коллекция Papilionidae Давида Лонгсдона была завещана Манчестерскому музею в 1938 году, после его смерти. Коллекция очень полна и насчитывает 9,301 экземпляр, относящийся к 504 видам из 26 родов. Это составляет примерно 87% от всех описанных видов Papilionidae. Также в коллекции имеется 51 типовая экземпляр (синтипы и паралектотипы) для 21 одного видового названия, из которых четыре остаются валидными по сей день. Бабочки были собраны за последнее десятилетие 19-го века и три с половиной десятилетия 20-го века. С начала 20-го века Лонгсдон начал приобретать бабочек у трёх хорошо известных торговцев естественно-историческими объектами (Свинхо, Розенберг и 'Штаудингер и Банг-Хаас') и

методично сохранял в архиве копии переписки по всем своим сделкам. Детальное изучение его взаимоотношений с тремя крупными торговцами бабочек выявило насколько напористым он был при обсуждении цен за приобретаемых бабочек. Архив также помогает понять, как мир богатого британского кабинетного коллекционера тропических бабочек контрастировал с опасной работой полевого сборщика, которому приходилось справляться с многочисленными трудностями при сборе насекомых для викторианских и эдвардианских аврелианцев.

Introduction

The Manchester Museum is a large university museum with an internationally important entomological collection housing some two and a half million specimens and accounting for the third largest insect depository in the UK [Logunov, 2010, 2012]. The collections of dried insect specimens are housed in over 4,000 drawers and some 1,400 store-boxes. The origin of the Manchester Museum's entomological collections dates back to the foundation of the Museum by the Manchester Society for The Promotion of Natural History in 1821; for further details see Alberti [2009] and Logunov & Merriman [2012]. The oldest insect specimens in the Museum are the beetles collected by William Kirby (1759–1850), the founder of English entomology, and described by Thomas Marsham (–1819) in his *Entomologica Britannica* in 1802 [see Johnson, 1996]. The particular strengths of the Manchester Museum's Entomology Department are the worldwide collections of Coleoptera, Dermaptera and Lepidoptera [Logunov, 2010].

Two notable collections of foreign Lepidoptera (viz., C.H. Schill's world Lepidoptera and D. Longsdon's Papilionidae) retained at the Manchester Museum represent good examples of the typical Aurelian Legacy [sensu Salmon, 2000: 26]. Aurelians — the name that

collectors of the early 18th century called themselves — derives from the Latin ‘*aureolus*’ meaning ‘golden’ and referred to the highly gilded and decorated chrysalis of certain butterflies [Ford, 1967]. Both Aurelian collections of the Manchester Museum were assembled by wealthy individuals who were *just* collectors and seemed to collect butterflies as other people might collect stamps, the hobby that in the opinion of Thomas Mann reflected the decadent state of the European middle class in the early 20th century (see Johnson [2007: 248] for further details).

The C.H. Schill collection of Lepidoptera (1027 drawers and store-boxes) contains some 40,000 specimens of over 8,000 species. It is worldwide in scope and includes all families of butterflies, larger moths and also micro-Lepidoptera. Charles Henry Schill (1863–) was a merchant in the South American trade, described once as a gentle and sensitive stamp collector by K. Chorley [1950: 126–128], who also mentioned that as a young man Mr Schill undertook an expedition to the Amazon to collect butterflies and moths when he was out representing his firm in South America. C.H. Schill donated his collection to the Manchester Museum in 1900 [Report, 1899–90], apparently when he was moving house from Didsbury to Alderley Edge and “*decided to discontinue collecting Lepidoptera*” [Schill’s letter to the Owen’s College Museum of 1/02/1900 in the Minutes of Manchester Museum’s Committee, Vol.2: 158].

The second Aurelian collection, which originally belonged to the London-based artist David Longsdon (1864–1937), was acquired by The Manchester Museum in 1938, by his bequest. This collection of Papilionidae (swallowtail butterflies) is not only valuable from a scientific point of view, as it is data rich and represents the majority of described (sub)species of swallowtail butterflies, but also has considerable monetary value.

The aims of this paper are as follows: (1) to provide a brief biography of David Longsdon; (2) to describe his collection of swallowtail butterflies; and (3) to analyze the corresponding archive.

Biography of David Longsdon

David Longsdon was an assiduous collector and very thorough and meticulous in character, keeping all the correspondence he received from wildlife dealers who supplied him with the insects he sought (see below under the ‘Longsdon archive’). Longsdon himself never ventured abroad (as far as is known) to search for, capture and so build up his own butterfly collection, rather he depended on established dealers. We are currently unaware of how his interest in butterflies arose but the first indication in the archive is the initial letter from a dealer in January 1902; though the inference in this letter is that Longsdon was already a well known collector of butterflies. But we do know a little bit more about the man from census returns and an Internet

search which has allowed us to outline the short biography in the next few paragraphs.

David Longsdon was born circa 1864. His father was Robert Longsdon and his mother was Maria Longsdon (nee Allen). The 1871 census reveals that David was 7 years of age and one of seven children: they were Maria 18 years, Robert 15 years, Alice 13 years, David 7 years, Alfred and Walter (twins) 5 years and Helen 3 years. The first four children had been born in Highgate, London, the other three in Bromley, Kent.

David’s father, Robert, was born in Southend, a village on the outskirts of Lewisham, which at the time was separated from London by farmland. He was a successful business man but the family fortunes really took off after 1858 when he invested in a steel works built in Sheffield by Henry Bessemer. Bessemer had been trying to produce steel for several years and had experienced a number of setbacks. But by 1858 the Bessemer process had been refined and patented and it became the most important method of steel production in the nineteenth century. The industrial plant was created through a partnership between Bessemer, his two brothers-in-law, Robert Longsdon and William Allen, and a firm of machine suppliers, W. and J. Galloway of Manchester. The firm became known as Henry Bessemer & Co. and the capital input was provided by Bessemer and Longsdon (both invested £6,000), Allen (£500) and W. and J. Galloway (£5,000) [Anon., 2014]. Although the plant lost money for the first two years of operation it subsequently produced very substantial profits for the investors. In fact, the partnership made a trading profit of £28,622 by 1867. In 1873 Robert Longsdon died but the profits from his investment had multiplied many times by then to provide his family with a very gracious living. The 1871 census reveals that the Longsdon’s had a governess and four servants living in the family home. Robert’s mother and sister were also in residence.



Fig. 1. Gravestone of David Longsdon, St Pancras Cemetery in East Finchley, London.

Рис. 1. Нагробный камень на могиле Давида Лонгсдона, кладбище Санта Панкрас в Ист Финчли, Лондон.

We know nothing of David's early education but by the age of 14 years he was at Harrow School. Being a boarder at the school, he was entered as being in residence there for the 1881 census at the age of 17 years. It is probable that he was at the school from 1878 to 1882. By the next census in 1891 the family had moved to 264 Norwood Hill, Croydon. Socially, the family's fortune and influence reached its zenith around this time. David's mother, Maria, was now the head of the family and David, Alfred, Walter and Helen were all living at home, together with David's oldest sister Maria, who was by then a widow. The census shows that a second family was also in residence at 264 Norwood Hill, that of Charles Butler, described on the census as a visitor and stockbroker, his wife and two children. Further, the census lists that a butler, a cook, a nurse and three other servants were in the house too. The census return also shows that 264 Norwood Hill, had two lodges and stables: in one lodge lived a gardener and his wife, in the other lodge lived another gardener, his wife and two children and in the stables were a coachman, his wife, two children and a groom. Robert Longsdon had provided well for his family.

From the 1901 census we discover that David (now 38 years of age and described as an artist/sculptor and of independent means), his mother and four servants had

moved to live at 20 Holland Park, Kensington. David's mother and brother Walter both died in 1909. David was still at this address in Kensington in 1908 when he joined the Entomological Society of London as a Fellow [Neave, Griffin, 1933: 185]. The Society's list of members reveals that in 1926 he was living at The Flower House, Beckenham Hill Road, Southend, Catford, London SE 6, which had previously been a lunatic asylum. David died at The Flower House on 16 October 1937, aged 73 years. His will showed that probate was granted to Walter Dawson-Pattison, his solicitor, Robert Cyril Longsdon, a nephew, and John Longsdon Garle, a nephew and the son of his oldest sister Maria. David was buried in Islington and St Pancras Cemetery in East Finchley, London N2 9AG. His gravestone (Fig. 1) was covered by ground ivy and other plants when MD visited the cemetery in September 2013 and it was not easy to make out the detail on the headstone. David's father and mother are buried in the adjacent plot. Being a horizontal stone, the grave itself was barely visible!

As far as is currently known, David Longsdon was still a Fellow of the Entomological Society of London when he died. The Society seemed to be of importance to him in building up his collection of butterflies. Two of the three dealers that he had extensive written communication with, and who provided him with many specimens, were also Fellows of the same Entomological Society. One dealer was Ernest Swinhoe, who was elected in 1894. He lived at 6 Gunterstone Road, Kensington, London. Another family member, and Ernest's father, was Colonel Charles Swinhoe [see Anon., 1924], and he was elected to the same Society in 1884. The other dealer who was a Fellow was William Frederick Henry Rosenberg. He lived at 57 Haverstock Hill, London NW3 and was elected to the Entomological Society of London in 1907 and was a Fellow until 1930. Although he was a Fellow of the Entomological Society of London, David Longsdon does not appear to have been an active one. With the kind assistance of Mrs Valerie McAtear, the current Librarian of the Royal Entomological Society in 2015, we found only three references to him in the Society's archives from 1908–1937 and in old issues of the Society's Proceedings. One was on the occasion of his death and the other two related to some specimens from his collection which were exhibited at Society gatherings. In 1913, two female specimens of two forms of *Papilio dardanus* (*leighi* and *trophonius*; see Figs 2–3) were used by one of the members, Professor Sir Edward B. Poulton (1856–1943), who wanted to compare them with two other examples of *leighi* from Oxford [see Bethune-Baker, 1914]. In 1931, three specimens (including the hitherto unknown female) of *Papilio aristor* were exhibited at the Society's meeting by Karl Jordan (1861–1959) on behalf of D. Longsdon [Eltringham, 1931]. The fact that Longsdon's specimens were used by such famous naturalists as E.B. Poulton and K. Jordan for their taxonomic enquiries seems to indicate a recognized scientific value and comprehensiveness of his Papilionidae collection by contemporary students.



Figs 2–3. Females of two *Papilio* species: 2 — *P. dardanus* f. *leighi* Poulton, 1911 from Port St. Johns, South Africa; 3 — *P. dardanus* f. *trophonius* Westwood, 1842 from Durban, South Africa. Scale bars: 2 cm.

Рис. 2–3. Самки двух видов *Papilio*: 2 — *P. dardanus* f. *leighi* Poulton, 1911 из Порт Сэинт Джонс, Южная Африка; 3 — *P. dardanus* f. *trophonius* Westwood, 1842 из Дурбан, Южная Африка. Масштаб: 2 см.



Figs 4–6. Queen Alexandra's birdwing, *Troides alexandrae* Rothschild, 1907: 4 — female; 5 — male; 6 — the data label of the female. Scale bar: 5 cm.

Рис. 4–6. Птицекрылка королевы Александры, *Troides alexandrae* Rothschild, 1907: 4 — самка; 5 — самец; 6 — этикетка самки. Масштаб: 5 см.

The Longsdon collection of Papilionidae

Papilionidae butterflies (apollos, swallowtails and birdwings) are a family that is distributed throughout the world. They are especially numerous in the tropics where the multiplicity of ecological niches means that there are many forms, aberrations, variations, etc. that further increase the number of insects to collect. As a group, they are colourful and striking, often having metallic/glittery hues and iridescent patches, and it is immediately apparent why they would inspire people to collect them. They are also a very diverse group. They include the world's largest butterflies (e.g., Queen Alexandra's birdwing *Troides alexandrae*, see Figs 4–5, Table 5; see Tennent [2010] for a story of the discovery of this species and Parsons [1989] for its life-history) and many species are extremely powerful fliers. Thus their intrinsic qualities mark them out as being highly prized by collectors.

Collecting butterflies was one of the stock British hobbies that probably began in the late 17th century as a result of exploratory trips by Europeans but reached its zenith in the 19th century and the early decades of the 20th century [Allen, 1994; Marren, Mabey, 2010; Salmon, 2000]. In the 19th century, improvements in travel, methods of communication, education and wealth created from industrialization, provided the opportunities for the rising middle classes, such as doctors, clergymen, industrialists, etc. to foster their interests in Lepidoptera. The 19th century also saw the rise of natural history

dealers and professional field collectors caused by the heavy demand of, in the words of David Allen [1994: 170], wealthy 'dead-insect collectors'. Field collectors undertook journeys around the world to collect Lepidoptera and other creatures and this had the added advantage that it did not expose the fireside collector to the hazards involved, such as disease, dangers from animals, adverse meteorological conditions, enduring hardships in the field, etc. The names of some distinguished field collectors of that time, such as Albert S. Meek (1871–1943) [Laithwaite et al., 1975; Tennent, 2010], can be found in the Longsdon collection on detailed data labels on many specimens from New Guinea (Fig. 6). Yet, Longsdon himself was a typical 'cabinet collector', as Baron Walter Rothschild (1868–1937) described such enthusiasts [see Lucas, Lucas, 2014: 64], who never collected in the field and acquired specimens from others.

The David Longsdon collection of Papilionidae butterflies and the books that he had accumulated during his life were donated to Manchester Museum in January 1938, a few months after his death (Minutes of Museum's Committee, Vol.5: 108). The 'books' were in fact the collection of twelve volumes of Seitz's work *Lepidoptera of the World*, plus a number of other natural history books, as mentioned in the solicitors' letter (Fig. 21) and Museum's Report [1937–38: 23]. According to the Museum's Keeper report on 10th October 1938 (Minutes of Museum's Committee, Vol.5: 130; also Report [1938–39: 14]), the original cataloguing of his

collection was undertaken in an honorary capacity by Mr H. Kitchen, the Vice-President of the Manchester Entomological Society at that time. The collection is both impressive and comprehensive. In total, the Longsdon collection consists of 9,301 specimens representing 504 species (see Table 1), and housed in 288 drawers (50.7x45.8 cm) within 6 cabinets (Fig. 7). The collection is well organized and rich in data, with labels dated from 1890 to 1936. The Manchester Museum Report for 1937–38 (Entomology section) records that the Longsdon collection is, “*A very valuable collection of Papilionidae. Many of the females in the collection are exceedingly rare in museums and many of them are from hitherto unknown localities for the species*”. The arrangement of cabinets and drawers in the collection was made in accordance with the following geographical regions: Palearctic butterflies, drawers 1–39; American butterflies, drawers 1–65; Indo-Australian butterflies, drawers 1–159; and African butterflies, drawers 1–25.

Many of the specimens in the Longsdon collection were purchased from one of the three main natural history dealers he dealt with: E. Swinhoe, W. Rosenberg and O. Staudinger and A. Bang-Haas (see below). We don't know whether Longsdon also bought specimens from Natural History Auctions at which two of the aforementioned dealers did sell Lepidoptera, according to the Register by Chalmers-Hunt [1976], Swinhoe at least six times and Rosenberg once. As a rule, which is

evidenced by Longsdon's 1933 correspondence with ‘Staudinger and Bang-Haas’ and the handwritten list of his collection (Figs 8–9), he generally tried to obtain three males and two females of each species, subspecies, aberration, etc., apparently being under the influence of the practice favoured by such famous contemporary researchers as W. Rothschild and K. Jordan, whom Longsdon knew personally, that examination of long series of specimens of a single butterfly species was argued to be important in order to avoid arbitrary decisions in taxonomic practice (see Johnson [2005] for further details).

Evidence from the Longsdon archive retained at the Manchester Museum suggests that he built up his collection of 9,301 specimens between 1902 and 1936, a period of 35 years. However, it is certain that he started to accumulate butterflies before 1902 (data labels in the collection are dated from 1890 to 1936), as this year simply marks his first recorded purchase from an established dealer (W. Rosenberg, see below). The files indicate that David Longsdon stopped actively collecting from a dealer (Staudinger and Bang-Haas) in 1935, just over a year before his death in 1937.

All the butterflies in the Longsdon collection are Papilionidae, with the exception of eleven specimens of non-Papilionidae, see Table 2. Longsdon identified them as ‘models’, the *Papilio* butterfly mimicking the model, i.e. the non-*Papilio* butterfly (Figs 10–11). However,



Fig. 7. The first author, Michael Dockery, near the row of cabinets with D. Longsdon's collection of Papilionidae; February, 2015.
Рис. 7. Первый автор, Майкл Докери, возле ряда шкафов с коллекцией Papilionidae Давида Лонгдона; февраль 2015.

Table 1.
The size of the Longsdon collection of Papilionidae at the Manchester Museum.

Genus	Species in World Fauna, after Bridge [1988]	Species in Longsdon Collection	%	Specimens in Longsdon Collection	Specimens/species
<i>Allancastris</i>	4	4	100	59	14.75
<i>Archon</i>	2	2	100	38	19
<i>Atrophaneura</i> *	43	40	93	690	17.25
<i>Baronia</i>	1	1	100	6	6
<i>Battus</i>	16	13	81	220	16.92
<i>Bhutanitis</i> *	5	2	40	13	6.50
<i>Cressida</i>	1	1	100	16	16
<i>Euchenor</i>	1	1	100	52	52
<i>Euryades</i>	2	2	100	11	5.50
<i>Eurytides</i>	13	13	100	118	9.08
<i>Graphium</i>	80	76	95	1,299	17.08
<i>Hypermnestra</i>	1	1	100	18	18
<i>Iphiclides</i>	2	2	100	71	35.5
<i>Lamproptera</i>	2	2	100	55	27.5
<i>Leuhdorfia</i>	4	3	75	20	6.67
<i>Meandrusa</i>	2	2	100	36	18
<i>Papilio</i> *	217	196	90	3,518	17.94
<i>Parides</i>	45	40	89	742	18.55
<i>Parnassius</i>	35	32	91	1,154	36.06
<i>Protesilaus</i>	42	34	81	478	14.06
<i>Protographium</i>	1	1	100	7	7
<i>Sericinus</i>	1	1	100	36	36
<i>Teinopalpus</i>	2	2	100	12	5.5
<i>Trogonoptera</i>	2	2	100	20	10
<i>Troides</i> *	30	29	97	505	17.34
<i>Zerynthia</i>	2	2	100	67	33.5
Undetermined				23	
Models/Mimics				11	
Total	566	504	89	9,301	

* — Subgenera are included.

Table 2.
Examples of models (Nymphalidae) and mimics (Papilionidae) in the Longsdon collection.

Drawer No.	Model	Mimic	N
Indo-Australian			
58	<i>Parantica sita</i> (Kollar, 1844)	<i>Papilio (Chilasa) agestor</i> (Gray, 1831)	1
58	<i>Parantica melaneus swinhoei</i> (Moor, 1883)	<i>Papilio (Chilasa) agestor</i> (Gray, 1831)	1
63	<i>Euploea diocletianus</i> (Fabricius, 1793)	<i>Papilio (Chilasa) paradoxa</i> (Zincken, 1831)	1
64*	<i>Euploea lowei</i> Moor, 1883	<i>Papilio (Chilasa) paradoxa</i> (Zincken, 1831)	1
64	<i>Euploea core</i> (Cramer, 1780)	<i>Papilio (Menelaides) dravidarum</i> Wood-Mason, 1880	1
86	<i>Idea blanchardii</i> Marshall, 1845	<i>Papilio (Menelaides) jordani</i> Fruhstorfer, 1902	1
156	<i>Ideopsis vulgaris</i> (Butler, 1874)	<i>Graphium (Paranticopsis) megarus</i> (Westwood, 1841)	1
157	<i>Idea leuconoe</i> Erichson, 1834	<i>Graphium (Pathysa) idaeoides</i> (Hewitson, 1853)	1
African			
1	<i>Tirumala formosa</i> (Godman, 1880)	<i>Papilio (Druryia) rex</i> Oberthür, 1886	1
1*	<i>Tirumala formosa</i> (Godman, 1880)	<i>Papilio (Druryia) rex</i> Oberthür, 1886	1
19	<i>Acraea aegina</i> (Cramer, 1775)	<i>Graphium (Arisbe) ridleyanus</i> (White, 1843)	1
Total			11

* — These pairs have been photographed (Figs 10–11).

List of Palearctic desiderata as sent to F. Staudinger & B. Haas, January 1933. (23)

<i>Papilio</i>	<i>conchifant</i>	♀♂	<i>Orontes</i>	<i>ab. pincinatus</i>	1♀
<i>demonius</i>	♀♂	<i>statala</i>	♂♂, ♀	<i>mutabilis</i>	♂♂, ♀
<i>Hinglingham</i>	♂♂, ♀	<i>curson</i>	♀	<i>kanakawicus</i>	♀
<i>kladias</i>	♂♂, ♀	<i>panopaea</i>	♀	<i>tridamocoris</i>	♂♂, ♀
<i>imbricatus</i>	♂♂, ♀	<i>lamellatus</i>	♀♂	<i>kuwai</i>	♀
<i>decalatus</i>	♂♂, ♀	<i>lucastus</i>	♀	<i>terosowskyi</i>	1♂, ♀
<i>nigricans</i>	♀♂	<i>talienensis</i>	♀♂	<i>hardwicki</i>	♂♂, ♀
<i>subcinctus</i>	♂♂, ♀	<i>teuchi</i>	♀	<i>ab. ayes</i>	♂♂, ♀
<i>panipamnia</i>	♀♂	<i>clausi</i>	♂♂, ♀	<i>ab. albicans</i>	♂♂, ♀
<i>clavosi</i>	♀	<i>semijaponici</i>	♂♂, ♀	<i>ab. halleri</i>	♂♂, ♀
<i>camacillus</i>	♂♂, ♀	(f. <i>sumi</i>)	♀	<i>ab. melana</i>	♀
<i>plateatus</i>	♀♂	<i>Almunda</i>	<i>nordmanni</i>	<i>ab. deplesi</i>	(<i>boas</i>) ♀♂, ♀
<i>scarota</i>	♀	<i>frimosa</i>	♂♂, ♀	<i>maximina</i>	♂♂, ♀
<i>dialis</i>	♂♂, ♀	<i>Fericius</i>	<i>ab. laonardi</i>	<i>ab. albica</i>	♂♂, ♀
<i>typhaeus</i>	♀	<i>Telemona</i>	1♂, ♀	<i>ab. halleri</i>	♂♂, ♀
<i>arturalus</i>	♀			<i>ab. albicans</i>	♂♂, ♀

List of the Papilio drawn up from Seitz's "Macropodoptera of the World" with numbers & sex signs (♂, ♀) attached showing number of each sex required in my collection to represent a species, variety, etc. Species, etc., underlined with red ink are complete; whole dots in red ink under species etc. that are incomplete indicate the number of each sex at present in collection. My focus as a rule is three males, two females, though longer according to individuals of a species day (this last a point not taken into account here)

Palearctic Papilios

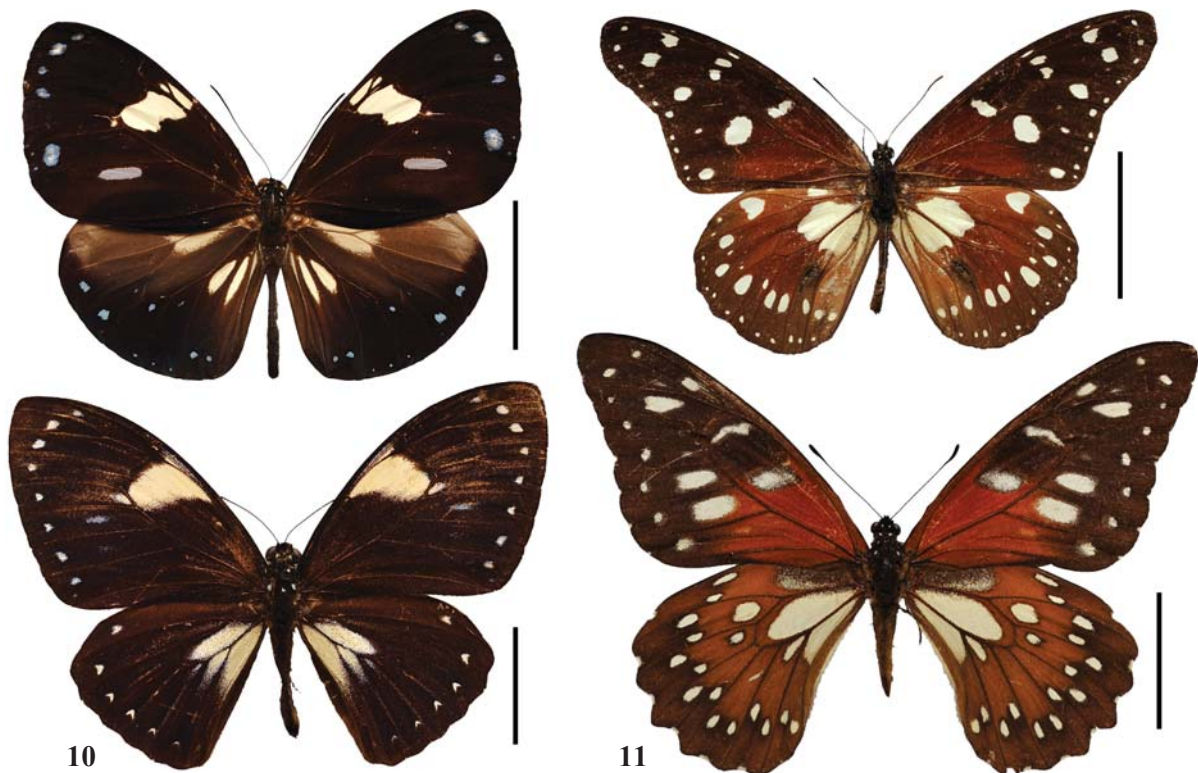
<i>Cynthia</i>	<i>decalatus</i>	♂♂, ♀	<i>jabonica</i>	f. <i>sumi</i>	♂♂, ♀	<i>melanura</i>	♂♂, ♀	
<i>desus</i>	♂♂, ♀	<i>nigricans</i>	♂♂, ♀	<i>manchi</i>	f. <i>sumi</i>	♂♂, ♀	<i>ab. sumana</i>	♀
<i>Papilio</i>	<i>clavosi</i>	♂♂, ♀	<i>raddei</i>	f. <i>sumi</i>	♂♂, ♀	<i>zallatus</i>	♂♂, ♀	
<i>vacca</i>	♂♂, ♀	<i>protus</i>	♂♂, ♀	<i>diaboli</i>	♂♂, ♀	<i>zallatus</i>	♂♂, ♀	
<i>nevillei</i>	♂♂, ♀	<i>halleri</i>	♂♂, ♀	<i>cyprinus</i>	♂♂, ♀	<i>machaca</i>	♂♂, ♀	
<i>larva</i>	♂♂, ♀	<i>deunelius</i>	<i>ab. albica</i>	<i>ab. albica</i>	♂♂, ♀	<i>ab. albica</i>	♂♂, ♀	
<i>alpinus</i>	♂♂, ♀	<i>ab. albica</i>	♂♂, ♀	<i>ab. albica</i>	♂♂, ♀	<i>ab. albica</i>	♂♂, ♀	
<i>confusus</i>	♂♂, ♀	<i>stacoda</i>	♂♂, ♀	<i>chrysomela</i>	♂♂, ♀	<i>ab. pallida</i>	♂♂, ♀	
<i>plistonus</i>	♂♂, ♀	<i>maculatus</i>	f. <i>sumi</i>	f. <i>sumi</i>	♂♂, ♀	<i>aurantiaca</i>	♂♂, ♀	
<i>demonius</i>	♂♂, ♀	f. <i>sumi</i>	♂♂, ♀	<i>arctus</i>	♂♂, ♀	<i>magi</i>	♂♂, ♀	
<i>leodocanus</i>	♂♂, ♀	<i>hians</i>	f. <i>sumi</i>	<i>ab. albica</i>	♂♂, ♀	<i>gabara</i>	♂♂, ♀	
<i>impudens</i>	♂♂, ♀	<i>impudens</i>	♂♂, ♀	<i>ab. albica</i>	♂♂, ♀	<i>hoplandes</i>	♂♂, ♀	
<i>zeuxippe</i>	♂♂, ♀	<i>ab. albica</i>	♂♂, ♀	<i>ab. albica</i>	♂♂, ♀	<i>centralis</i>	♂♂, ♀	

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Figs 8–9. Scanned copies of the list of Palearctic 'desiderata' from the correspondence with 'Staudinger and Bang-Haas' (8) and the handwritten list of the Longsdon Papilios drawn up from Seitz's book (9); from the Manchester Museum's entomological archive.

Рис. 8–9. Отсканированные копии палеарктического списка «желаемое» из корреспонденции с 'Штаудингер и Банг-Хаас' (8) и рукописного списка Papilios, переписанного из книги Зейца (9); из энтомологического архива Манчестерского музея.



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Figs 10–11. Two pairs of models (top, Nymphalidae) and mimics (bottom, Papilionidae): 10 — *Euploea lowei* Moor, 1883 (top) and *Papilio (Chilasa) paradoxa* (Zincken, 1831) (bottom) from Borneo; 11 — *Tirumala formosa* (Godman, 1880) (top) and *Papilio (Druryia) rex* Oberthür, 1886 (bottom) from Kenya. Scale bars: 2 cm.

Рис. 10–11. Две пары моделей (вверху, Nymphalidae) и имитаторов (внизу, Papilionidae): 10 — *Euploea lowei* Moor, 1883 (вверху) и *Papilio (Chilasa) paradoxa* (Zincken, 1831) (внизу) с Борнео; 11 — *Tirumala formosa* (Godman, 1880) (вверху) и *Papilio (Druryia) rex* Oberthür, 1886 (внизу) из Кении. Масштаб: 2 см.

the question of which is the model and which is the mimic has been the focus for considerable debate since Bates [1862] and Müller [1879] provided their explanations for such mimicry. This debate should be pursued elsewhere, for example, Ruxton et al. [2004].

There are also 23 ‘undetermined’ Papilionidae specimens in the Longsdon collection. The specimens were identified by Longsdon himself but these names were not found in the species list used for this article. For example, there are four unidentified specimens which have been placed between the specimens of *Parides erlaces* and *P. anchises* in the Longsdon American drawer 6.

The species count of Papilionidae in the world and their nomenclature fauna seems to be a matter of controversy. According to Pogue [2009], there are 612 valid species in 26 genera of Papilionidae in the world, Bridge [1988], as counted by Shields [1989], recognized 566 species in 26 genera, and Häuser et al. [2005] listed 551 species in 30 genera. Based on the nomenclature by Bridge [1988], David Longsdon had 504 in his collection so it represents a comprehensive gathering of these butterflies, 82 to 91% (87% in average) of the described species depending on the corresponding count. He organized his collection into four sections: Palaearctic, American, Indo-Australian and African. Longsdon’s categories partly match the current descriptions of such zoogeographical regions as Palaearctic (Longsdon used the same term), Nearctic and Neotropical (Longsdon used the term American), Oriental and Australian (Longsdon used the term Indo-Australian) and Afrotropical (Longsdon used the term African). Longsdon’s separate species list totalled 504 (Table 1) and the percentage occurrence in each of his regions is illustrated in Table 3. These data show the dominance of the Indo-Australian and American regions (approximately 70%) for the number of species of Papilionidae butterflies.

Longsdon’s collection in Manchester Museum also holds several type specimens. The term *type* indicates a standard specimen for a described species or sub-species name, as defined in the ICZN [1999]. In the Longsdon collection, a total of 51 type specimens representing 21 (sub)species of Papilionidae is available; of them, four species names are still valid now (Table 4). Most of these specimens are indicated as cotypes (now syntypes) but there are also two paralectotypes. In the late 1960s, the

additional labels of syntype or paralectotype were added to most of the type specimens by Alan Brindle (1915–2001), the distinguished British entomologist and the former Keeper of Entomology at The Manchester Museum [see Johnson, 2003], at the time (1969) when he was preparing an index of the type specimens held in the Entomology Department [Report, 1969–1970]. A few types in the Longsdon collection still retain the label ‘cotype’ on the individual specimen’s pin.

Table 4 lists the types in the Longsdon collection, with both the original names and the current species name. The type specimens are only found in the Palaearctic and African sections of the collection and the majority are in the genus *Parnassius*. One of the striking features of the type specimens is that most of them (48 of 51; 94%) were sold to Longsdon by the dealers ‘Staudinger and Bang-Haas’. We are unsure of why this is the case. It is possible that dealers may have described numerous *Parnassius* varieties and subspecies following the contemporary taxonomic tradition at that time, which was indeed the case of the taxonomy of Lepidoptera and in ornithology at the turn of 19th/20th centuries [see Johnson, 2005]. Yet, the dealers might have done so in order to sell the type specimens to their rich clients at higher prices. For instance, 31 of 50 Palaearctic type specimens belong to the *Papilio* and *Parnassius* species described by Otto Bang-Haas (1882–1948) at the time (since c. 1913) when he was in charge of the company ‘Staudinger and Bang-Haas’ (see Table 4). The files also reveal that Longsdon was occasionally given specimens from the personal collection of Andreas and Otto Bang-Haas and these might well be expected to be particularly fine specimens as they were owned by dealers of high standing. If this is the case, this again suggests that Longsdon was a highly favoured client who could readily afford to pay the high prices that such pristine specimens, including the types, would attract. It is also clear from Table 4 that the majority of the butterfly types were purchased by Longsdon in the 1930s by which time Longsdon would have been a valued customer of long-standing. David Longsdon was favoured further in that often more than one type specimen was sent to him, in one case (*Parnassius colosseus*; Table 4) six out of the six specimens sent to him were syntypes!

Table 3.
Number of species in the Longsdon collection of Papilionidae in the major zoogeographical regions and their approximate areas (Wikipedia).

Region	No. of species	Percentage	Area (million km ²)
Palaearctic	85	15.9	54.1
American	167	31.3	22.9
Indo-Australian	205	38.5	15.1
African	76	14.3	22.1
Total	553*	100	114.2

* — The fact that 553 species occur in the Longsdon list in this table is accounted for by the fact that some species of butterfly were found in more than one region: e.g., *Atrophaneura dasarada* in the Indo-Australian and Palaearctic regions, *Papilio demodocus* in the African and Indo-Australian regions and *Parnassius evermanni* in the Palaearctic and American regions, etc.

Table 4.
The type specimens in the Longsdon Papilionidae collection.

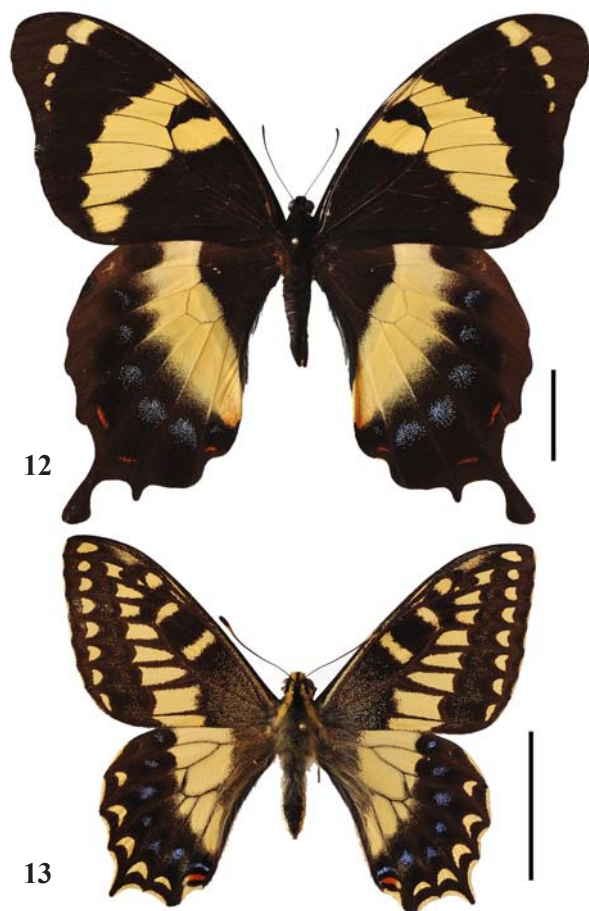
Drawer	Old species name	No	Types	Current species name	Data labels	Dealer, year*
Palaeartic section						
21	<i>Luehdorfia coreana</i> Matsumura, 1927	3	syntypes	<i>Luehdorfia puziloi</i> (Erschoff, 1871)	2 ♂♂, 1 ♀ (MMUE, F3219.249-251), Korea, Shiotsufuss Kjōnsōng, Sept or 1500 m, Juli / 134 / 133 / 132 / Purchased from Staudinger-Bang-Haas, Feb 1933 / Syntype	S & B-H, 1933
20	<i>Papilio leechi</i> f. <i>aprilis</i> O. Bang-Haas, 1934	3	syntypes	<i>Graphium leechi</i> (Rothschild, 1895)	2 ♂♂, 1 ♀ (MMUE, F3219.198,204-205), China, Czechuan [Sichuan], / 19-21.4.32 Bango / 334 / 335 / Syntype e. collection Bang-Haas, 1933	S & B-H, 1933
18	<i>Papilio podalirius</i> var. <i>podalirius</i> Oberthür, 1890	2	syntypes	<i>Iphiclides podalirius</i> (Oberthür, 1890)	1 ♂ (MMUE, F3219.206), China, Yunnan, Tschou, R.P. Valentin, 1918 / Syntype e. Oberthür Colln / 563 / Purchased from Staudinger-Bang-Haas, 1924	S & B-H, 1924, 1926
8	<i>Papilio syfanius</i> ab. <i>albomaculata</i> Verity, 1907	1	syntype	<i>Papilio (Princeps) bianor</i> (Cramer, 1777)	1 ♀ (MMUE, F3219.197), [China], Mou-Pin, 1899 / Chasseurs indigènes [native hunters] / Syntype	S & B-H, 1924
38	<i>Parnassius colossus</i> O. Bang-Haas, 1935	6	syntypes	<i>Parnassius simo</i> Gray, [1853]	6 ♂♂ (MMUE, F3219.211-216), [Pakistan], Baltistan, Haldi, Saltoca mont. 4500 m Juli / Co-type e. collection Bang-Haas / 128 / 124 / 129 / 133 / 127 / 118 / Purchased from Staudinger-Bang-Haas Nov 1935 / Syntype	S & B-H, 1935
39	<i>Parnassius dominus</i> O. Bang-Haas, 1934	1	syntype	<i>Parnassius imperator</i> Oberthür, 1883	1 ♂ (MMUE, F3219.217), [China, Qinghai], Kuku-Nor occ. Alt-Tau, Hsi-King-schan 2500 m Ende Juli / co-type e. collection Bang-Haas / Purchased from Staudinger-Bang-Haas Oct 1934 / 303 / Syntype	S & B-H, 1934
36	<i>Parnassius frivaldskyi</i> O. Bang-Haas, 1928	1	syntype	<i>Parnassius szechenyii</i> Frivaldsky, 1886	1 ♀ (MMUE, F3219.218), [China, Inner Mongolia], Kansu sept. Liangtschow, Richthof. Mont. Juli 3000 m / co-type e. collection Bang-Haas / 889 / Purchased from Staudinger-Bang-Haas Sep. 1930	S & B-H, 1930
33	<i>Parnassius gilgitsensis</i> O. Bang-Haas, 1932	2	syntypes	<i>Parnassius tianshanica</i> Oberthür, 1879	1 ♂, 1 ♀ (MMUE, F3219.224-225), India sept. occ. Chitral, Yasin, 4000 m. Aug-Sept 1932 / Co-type e. collection Bang-Haas / 257 258 / Purchased from Staudinger-Bang-Haas Apr. 1933 / Syntype / gilgitsensis O.B.H.	S & B-H, 1933
35	<i>Parnassius hinducucica</i> O. Bang-Haas, 1934	3	syntypes	<i>Parnassius epaphus</i> Oberthür, 1879	1 ♂, 1 ♀ (MMUE, F3219.219-221), [India], Kaschmir Sept. Chitral, HinduKush mont. Karambar Pass, 4500 m Aug-Sept / Co-type e. collection Bang-Haas / 283 / 285 / Purchased from Staudinger-Bang-Haas Oct. 1934 / Syntype	S & B-H, 1934
35	<i>Parnassius jupiterius</i> O. Bang-Haas, 1933	2	syntypes	<i>Parnassius jacquemontii</i> Boisduval, 1836	2 ♂♂ (MMUE, F3219.222-223), Kansu mer. Or. Min. Minschau or. 3000 m Juli / Co-type e. collection Bang-Haas / 347 / 261 / Purchased from Staudinger-Bang-Haas Apr & Nov 1933 / Syntype	S & B-H, 1933
34	<i>Parnassius melaniticus</i> O. Bang-Haas, 1915	1	syntype	<i>Parnassius actius</i> (Eversmann, 1843)	1 ♂ (MMUE, F3219.226), Kuitscha mont. Thianschan or. Juli 3500 m / 127 / Co-type e collection Bang-Haas / Syntype	S & B-H, 1933
34	<i>Parnassius ornatus</i> O. Bang-Haas, 1915	2	syntypes	<i>Parnassius actius</i> (Eversmann, 1843)	1 ♀ (MMUE, F3219.227), [Pakistan (?)], Choton, mer. Karacorum [=Karakoram], Juli / Co-type / 79 / Schahidulla Juni 4500 m / actius v. ornatus ♀ / Syntype	W. Schenke, 1927
32	<i>Parnassius peilingschani</i> O. Bang-Haas, 1932	2	syntypes	<i>Parnassius nomion</i> Fischer von Waldheim, 1823	1 ♀ (MMUE, F3219.228), [Pakistan (?)], Schahidulla Choton mer. / Co-type / Purchased W. Schenke (?) Sep 1927 / Syntype	S & B-H, 1933
					1 ♂, 1 ♀ (MMUE, F3219.229-230), [China, Inner Mongolia], Kansu mer. Peilingshan, Taupingfluss, 3200 m Juli / 247, 248 / Purchased from Staudinger-Bang-Haas Apr. 1933 / Syntype	

Table 4.
Continue.

Drawer	Old species name	No	Types	Current species name	Data labels	Dealer, year*
39	<i>Parnassius regina</i> Bryk et Eisner, 1932	3	syntype	<i>Parnassius imperator</i> Oberthür, 1883	2 ♂♂, 1 ♀ (MMUE, F3219.234-236), [China, Inner Mongolia], Kansu, mer. Min-Schau, Tauhe, 2500 m Juli / Co-type e. collection Bang-Haas / Purchased from Staudinger-Bang-Haas Oct. 1930 / 70 / 71 / 72 / Syntype	S & B-H, 1930
38	<i>Parnassius shigarensis</i> O. Bang-Haas, 1935	5	syntypes	<i>Parnassius delphius</i> Eversmann, 1843	3 ♂♂, 2 ♀♀ (MMUE, F3219.237-241), [Pakistan], Baltistan, Shigar, Baltora mont. 5000 m Juli / Co-type e[collection Bang-Haas / 122 / 115 / 119 / 117 / 121 / Purchased from Staudinger-Bang-Haas Nov 1935 / Syntype	S & B-H, 1935
38	<i>Parnassius temis</i> Bryk et Eisner, 1932	3	para- lectotypes	<i>Parnassius delphius</i> Eversmann, 1843	1 ♂, 1 ♀ (MMUE, F3219.243-244), [India], Gya-Ladak, Taglang-Pass, Himalaya mont. 5000 m 15-30 Juli / Co-type e. collection Bang-Haas / 894 175 / Purchased from Staudinger-Bang-Haas Sept 1930, Apr 1931 / Paralectotypes 1 ♂ (MMUE, F3219.245), [India], Kaschmir mer. Nira Zanskar mont. 4500 m Juli / Co-type e. collection Bang-Haas / 172 / Purchased from Staudinger-Bang-Haas Nov 1934 / Paralectotype	S & B-H, 1930, 1931, 1934
32	<i>Parnassius tsinglingensis</i> Bryk et Eisner, 1932	3	para- lectotypes	<i>Parnassius nomion</i> Fischer von Waldheim, 1823	2 ♂♂, 1 ♀ (MMUE, F3219.231-233), [China, Inner Mongolia], Prov. Kansu or, Tapaischan, Tsinglingschan mont. 2800 m August / Co-type e. collection Bang-Haas / 732 / 733 / 735 / Purchased from Staudinger-Bang-Haas Feb 1930 / Paralectotype	S & B-H, 1930
38	<i>Parnassius zarraensis</i> O. Bang-Haas, 1935	3	syntypes	<i>Parnassius simo</i> Gray, [1853]	3 ♂♂ (MMUE, F3219.246-248), [India], Kaschmir mer. Or. Zorra, Taglang Pass 5000 m Juli / Co-type ex collection Bang-Haas / 192 / 190 / 191 / Purchased from Staudinger-Bang-Haas Nov 1934 / Syntype	S & B-H, 1934
Afrotropical section						
6	<i>Papilio antinorii</i> Oberthür, 1883	1	syntype	<i>Papilio dardanus</i> Brown, 1776	1 ♂ (MMUE, F3219.252), Fekklek(?) Purchased from Oberthür Coll., 1926 / Possible Syntype – R.J. Vane-Wright, 1978	C. Oberthür, 1926
Names of unknown status **						
38	<i>Parnassius acco</i> var. (unknown)	3	syntypes	<i>Parnassius acco</i> Gray, [1853]	2 ♂♂, 1 ♀ (MMUE, F3219.208-210), [China (?)], Tibet occidentale, Churmurti Shilang (Shiring) Pass, 4800 m August 1928 / 277 / 275 / 281 / Co-type / ex collection Bang-Haas / Syntype	S & B-H, 1928
38	<i>Parnassius stoliczkanus</i> var. (unknown)	1	syntype	<i>Parnassius delphius</i> Eversmann, 1843	1 ♀ (MMUE, F3219.242), [India, Himachal Pradesh], Tum Tum Thang am Spiti Fluss, NW Himalaya, Juli 5000 m / Purchased from Staudinger-Bang-Haas Apr 1927 / Syntype	S & B-H, 1927
Total		51				

* — Years of acquisition of each series is given.

** — The specimens listed under this heading are marked in the collection as syntypes, but none contains the exact name of aberration, form or variety it was designated for. Abbreviations: MMUE — The Manchester Museum; S & B-H — 'Staudinger and Bang-Haas'; / — separate specimen label; [] — editorial text.



Figs 12–13. Males of two endangered *Papilio* species: 12 — *P. homerus* Fabricius, 1793 from Jamaica; 13 — *P. hospiton* Gén , 1839 from Sardinia, Italy. Scale bars: 2 cm.

Рис. 12–13. Самцы двух исчезающих видов *Papilio*: 12 — *P. homerus* Fabricius, 1793 с Ямайки; 13 — *P. hospiton* Г , 1839 с Сардинии, Италия. Масштаб: 2 см.

There are many rarities in the Longsdon collection, particularly a number of currently threatened Papilionidae species. Table 5 presents information about three endangered species from the collection according to their IUCN status [Collins, Morris, 1985: 369] (Figs 4–5, 12–13). Nowadays, all these species are included in Annex A of the CITES Convention (Appendix I — species threatened with extinction) which strictly prohibits their collecting in the field and commercial trade [Mu oz & Corrochano, 2000]. Yet, the collection also contains most of the ‘vulnerable’ and ‘rare’ species listed by Collins & Morris [1985] and which were described before 1935, the date when D. Longsdon stopped actively acquiring butterflies.

Table 1 presents the summary table of data, with the number of species in each genus, both currently in the world [sensu Bridge, 1988] and in the Longsdon collection, the number of specimens in each genus in the collection and a measure of concentration (the number of specimens per species in the Longsdon collection). Genera with measures of high concentration (i.e. greater than 30.00 specimens per species) are *Euchenor*, *Parnassius*, *Sericinus*, *Iphiclides* and *Zerynthia*: those with measures of low concentration (i.e. less than 10.00 specimens per species) are *Euryades*, *Baronia*, *Bhutanitis*, *Leuhdorfia*, *Protographium*, *Eurytides* and *Teinopalpus*. We are currently unaware of why Longsdon showed these preferences. The variation may reflect personal whim, about which we know nothing, or it may be due to the number of forms, aberrations etc. within a particular species or that were offered by the dealers he did business with. For example, in the collection *Parnassius honrathi* has 14 aberrations in the total of 54 butterflies of this species, for *Papilio clytia* there were four forms in the total of 33 butterflies and for *Protesilaus lysithous* there were three aberrations and six forms in the total of 48

Table 5
Examples of the endangered species [sensu Collins, Morris, 1985] in the Longsdon Papilionidae collection

Name	No.	Data labels*	Selected references
<i>Papilio (Pyrrhosticta) homerus</i> Fabricius, 1793	7	5 ♂♂, 1 ♀ (MMUE; F3219.189,191-195), Jamaica, W. Indies, Blue Mts, 1906 / Purchased from O.E. Janson, April-May 1907 1 ♀ (MMUM; F3219.190), Jamaica, W. Indies, Blue Mts, 1906 / Purchased from Stevens Rooms, October 12, 1920	Collins, Morris [1985]; Emmel, Garraway [1990]
<i>Papilio (Papilio) hospiton</i> G�n�, 1839	6	2 ♂♂ (MMUE; F3219.196,199), Gonnos Fanadiga, Sardinia / Purchased from ‘Staudinger-Bang-Haas’, June 1923 1 ♂ (MMUE; F3219.200), Sardinia (no exact locality) / Jones Coll. / Purchased from Stevens Rooms, March 17, 1925 1 ♀ (MMUE; F3219.201), Corsica (no exact locality) / H.C. Lang Coll. / Purchased from Stevens Rooms, March 1907 1 ♂ (MMUE; F3219.202), Corsica (no exact locality) / Jones Coll. / Purchased from Stevens Rooms, June 19, 1925 1 ♀ (MMUE; F3219.203), “955” (no other data on the label)	Aubert <i>et al.</i> [1996]; Collins, Morris [1985]
<i>Troides (Ornithoptera) alexandrae</i> Rothschild, 1907	8	3 ♂♂, 2 ♀ (MMUE; F3219.24-26,29,30), Kumusi River, North East New Guinea, low elevation, May-September 1907, A.S. Meek / Jonson & Son, 14 GT Russell street, London SW 1 ♂, 1 ♀ (MMUE; F3219.27,31), New Guinea (no exact locality) / Ex Coll. A.L. Darrah 1 ♂ (MMUM; F3219.28), no data label	Collins, Morris [1985]; Parsons [1989]; Tennent [2010]

* — Abbreviations: MMUE — The Manchester Museum; / — separate specimen label.



Figs 14–16. Males of *Papilio* species with their data labels: 14 — *P. dardanus* Brown, 1776, typical form from Cameroon, purchased from Miss M.E. Fountaine in 1927; 15 — *P. 'nandina'*, the *dardanus* x *phorcas* hybrid from Uganda, purchased from F.W. Niepelt in 1925; 16 — *P. phorcas ruscoei* Krüger, 1928, typical form from Kenya, purchased from A. Kruck in 1930. Scale bars: 2 cm.

Рис. 14–16. Самцы *Papilio* со своими этикетками: 14 — *P. dardanus* Brown, 1776, типичная форма из Камеруна, куплена у мисс Фонттейн в 1927 г.; 15 — *P. 'nandina'*, гибрид между *dardanus* и *phorcas* из Уганды, куплен у Ф.В. Нипельта в 1925 г.; 16 — *P. phorcas ruscoei* Krüger, 1928, типичная форма из Кении, куплен у А. Крука в 1930 г. Масштаб: 2 см.

butterflies he purchased. The number of genera in the collection is 26 and this figure matches the number given in Pogue [2009]; in Häuser et al. [2005] 30 genera are recognized and listed.

Analysis of the data in Table 1 showed that there was a significant correlation ($r = 0.860$, $N = 26$, $P < 0.001$) between the number of species in the Papilionidae genera [sensu Bridge, 1988] and the number of species in the genera in the Longsdon collection, indicating that Longsdon had accumulated a collection of butterflies that comprehensively covered the genera in the Papilionidae. There was also a significant correlation ($r = 0.839$, $N = 26$, $P < 0.001$) between the number of species in the twenty six genera in the Longsdon collection and the number of specimens he accumulated, indicating that Longsdon collected specimens of butterflies that were associated with the size (number of species) of the genera of Papilionidae. This confirms that the Longsdon Papilionidae collection was exceptionally comprehensive at the time it was assembled (the late 1930s) and it remains so now (2015). Taking into consideration that the collection is rich in data (i.e., data labels attached to the specimens are very comprehensive; Figs 6, 14–16) and contains most of the described varieties (subspecies, aberrations, and colour morphs) and some naturally occurring hybrids (e.g., the one between *Papilio dardanus meseres* and *P. phorcas ruscoei* from Uganda [see Vane-Wright & Smith, 1992]; Fig. 14–16), it represents a serious scientific resource for any student of the Papilionidae.

Due to its data richness, the collection could play an important role in taxonomic studies, biological conservation as a 'library of the diversity' or as a source of data for 'museum ecology' that is "the practice of utilizing the wide spectrum of information associated with specimens" [see Davies, 1996: p. 152]. Unfortunately, at present, the collection is hardly used for research. With a few exceptions [e.g., Vane-Wright & Smith, 1992], its past and current usage has been practically limited to supporting education and popularization [e.g., Anon., 1985; Dockery, 2011], local cultural events and temporary exhibitions. In 20th–22nd July 1951, during the meeting of the Royal Entomological Society in Manchester a selection of drawers from Longsdon collection were exhibited in the Museum's galleries to the delight of the participants [Britton, 1951; Report, 1950–51]. A drawer of Queen Alexandra's birdwings (*Troides alexandrae*) was displayed on the exhibition 'Treasures of the University of Manchester' in 26 April – 28 June 1980; the exhibition was organized to celebrate the granting of the Royal Charter constituting the Victoria University in 1880. In recent years, large and showy specimens from Longsdon collection, such as Apollo butterflies (*Parnassius* spp) and Birdwings (*Troides* spp), are regularly used for public events run by the Manchester Museum or in national/regional entomological festivals (e.g., Fig. 17).



Fig. 17. The second author, Dmitri Logunov, demonstrating a drawer with Queen Alexandra's birdwings (*Troides alexandrae* Rothschild, 1907) during the Insect Festival organized by the Royal Entomological Society in York, July 2011.

Рис. 17. Второй автор, Дмитрий Логунов, демонстрирует ящик с птицекрылками королевы Александры (*Troides alexandrae* Rothschild, 1907) во время Праздника Насекомых, организованного Королевским Энтомологическим Обществом в Йорке, июль 2011 г.

The Longsdon archive

The Manchester Museum's Entomology department houses a rather large archive consisting of 37 individual collections arranged by associated collectors, including the archive of the Manchester Entomological Society [Logunov, 2012]. All the archival collections are kept in special archive-quality Solander boxes and all individual items in each collection are recorded and listed.

The 'Longsdon archive' refers to an A4 file that was given to the museum together with his collection in 1938. It holds all David Longsdon's notes and correspondence relating to his collection of butterflies, in total 251 items. The material in the files bequeathed to Manchester Museum contains botanical notes and illustrations, correspondence between the Museum and the firm of solicitors, Hore, Patisson & Bathurst, who dealt with Longsdon's will, and correspondence between three wildlife dealers and Longsdon. The correspondence from the solicitors was always typed, as would be expected, however, the letters and invoices from dealers are sometimes typed but many, and especially the early ones, are handwritten and some sections are rather difficult to read. The letters record only information received by Longsdon as he did not appear to keep copies of letters he wrote to dealers. So the files indicate just one side of the relationship between Longsdon and his dealers. Occasionally we have made inferences about these relationships that were not based on documentary evidence, rather they are judgements based on the responses from the dealers indicating that Longsdon had probably asked them particular questions, suggested price changes, or questioned species identification, in

his correspondence with them. Hence, any inaccuracies and/or mis-interpretations are ours.

The files have three sections, these are:

- A) botanical notes and illustrations;
- B) correspondence between Manchester Museum and the solicitors dealing with Longsdon's will;
- C) correspondence with each of the three dealers, viz. Swinhoe, Rosenberg and Staudinger & Bang-Haas.

A. Botanical notes and illustrations

Over a period of time, David Longsdon had created a miscellaneous collection of botanical notes, possibly made from *Encyclopedia Britannica* and other sources. The notes, mostly in pencil but a few in ink, relate chiefly to flowering plants and grasses and include definitions of botanical terms, notes on leaves and inflorescences, botanical functions and processes, etc. The notes are written in what was often referred to as 'copperplate handwriting' so are relatively easy to read (see Fig. 19). Longsdon possessed good illustrative skills, as is evident from several drawings of flowers, or parts of flowers, and leaves which are embedded in the notes. Whether they were drawn from still life or copied from illustrations in the *Encyclopedia Britannica*, or other sources, is not known but he was obviously quite a skilled draughtsman (see Fig. 20), and his description as an artist/sculptor in Census entries is testimony to this. Proof of his artistic ability comes from the fact that he exhibited five times at the Royal Academy Summer Exhibition in London: in 1867 (*On the Derwent near Hathersage*), in 1891 (*In the sun, Farm land and A game of bowls*), in 1898 (*Sunny Provence*), in 1899 (*Scant Pasture*) and in 1901 (*On the Itchen, Hampshire*). He also exhibited at several provincial galleries, including the Walker Art Gallery in Liverpool and the Manchester City Art Gallery. In Manchester the oil paintings were submitted in 1892 (*In the sun* for £31-10-0), in 1893 (*A Sussex homestead* for £52-10-0), in 1894 (*Across the brook* for (£31-10-0), in 1895 (*The*



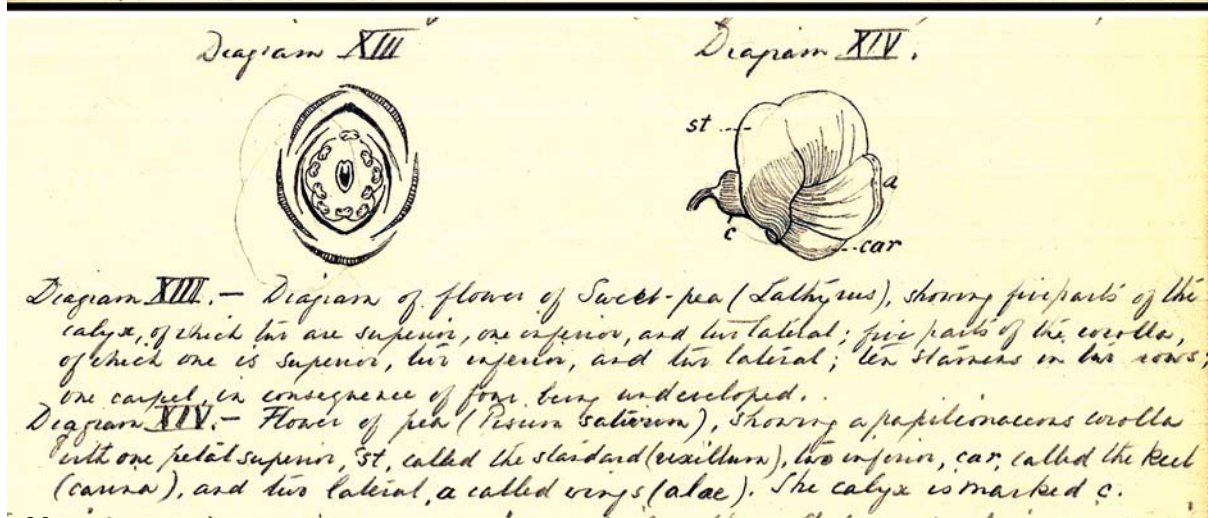
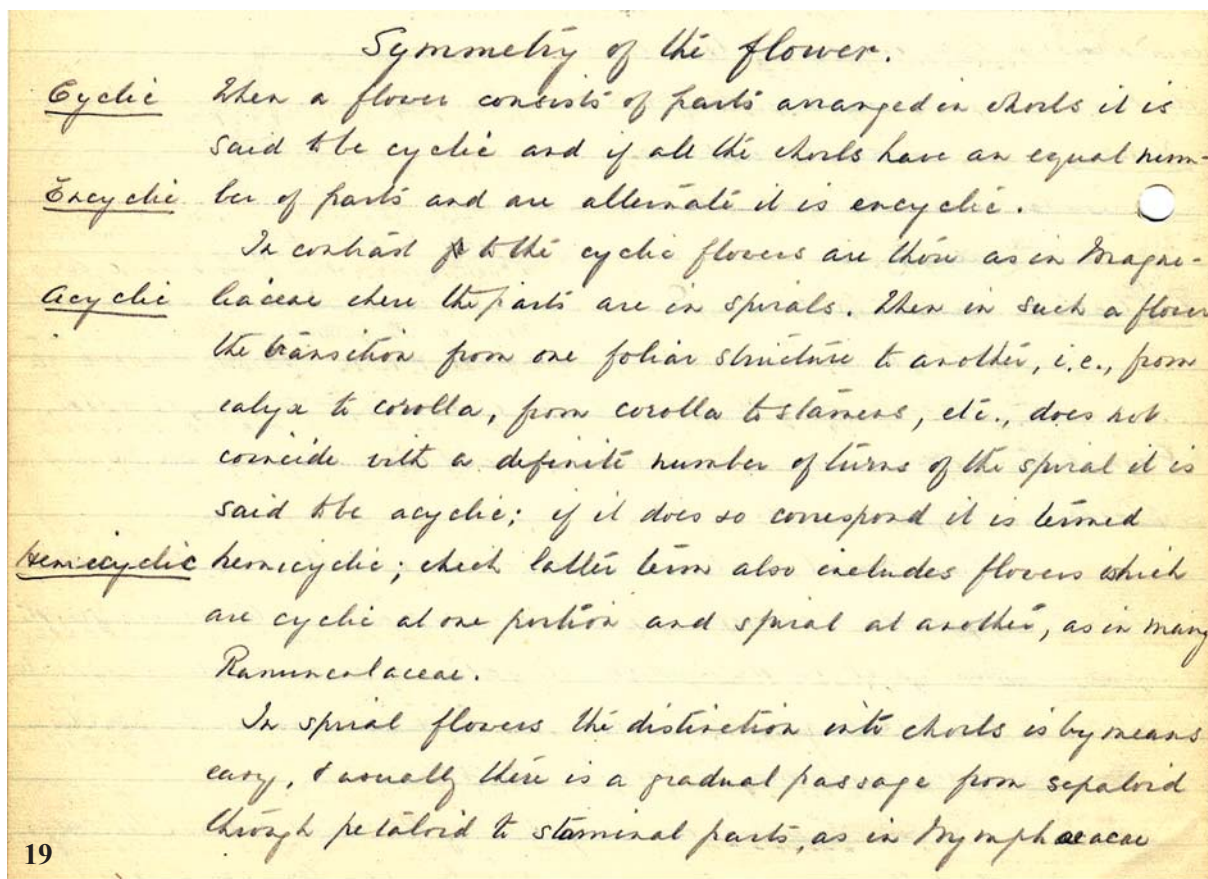
Fig. 18. Photo of Longsdon's painting *Oaks at Coney Hill*; the original is deposited at Bromley Museum in Orpington, Kent, UK.

Рис. 18. Фотография картины Лонгсдона *Дубы на холме Кони*; оригинал хранится в Музее Бромли в Орингтоне, Kent, Великобритания.

clearing for £50-0-0) and in 1899 (*Sunny Provence* for £105-0-0). One of his paintings, *The Oaks at Coney Hill* (see Fig. 18), is kept at Bromley Museum in Orpington, Kent. David lived about a mile from Coney Hill when he was in residence at Hill Lodge, South Norwood Hill at the end of the nineteenth century. Perhaps surprisingly, there are no illustrations of any butterflies in his notes. This may well be because he was steadily accruing his

collection of lepidopteral deadstock so had no need for any drawings of butterflies. Further, his work seemed to be at a larger scale than a butterfly as he is described as a 'landscape painter' in *The Dictionary of British Art* [Johnson, Gretnzer, 1999].

This section of the file also has Longsdon's lists of butterfly specimens in his collection found in the Palae-arctic, American, Indo-Australian and African regions,



Figs 19–20. Examples of Longsdon's handwriting (16) and sketching (17); from the Manchester Museum's entomological archive.
Рис. 19–20. Примеры рукописного текста Лонгдона (16) и зарисовок (17); из энтомологического архива Манчестерского музея.

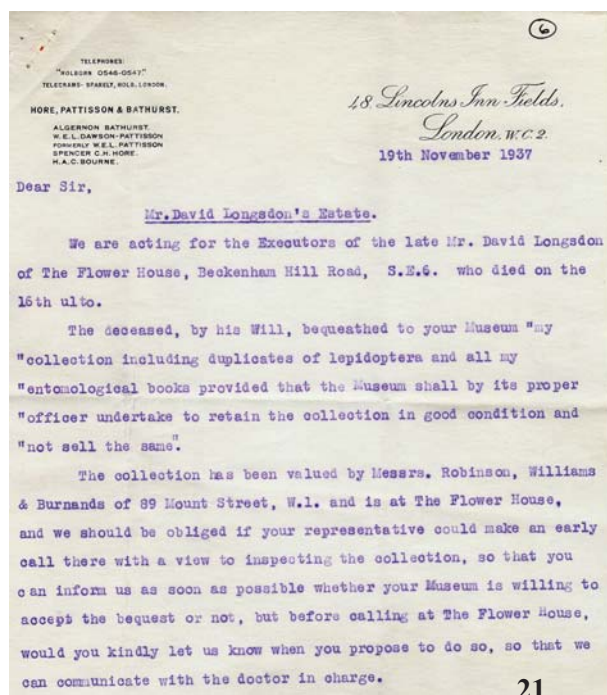
drawn up from lists found in Seitz's [1907] *Macrolepidoptera of the World*. These lists are all undated and it is likely that they were compiled by H. Kitchen of the Manchester Entomological Society who catalogued the collection after it was acquired by The Manchester Museum (Minutes of Museum's Committee, Vol. 5: p. 130). These listings of species match the arrangement of cabinets and drawers in the collection.

B. Correspondence between Manchester Museum and Longsdon's solicitors

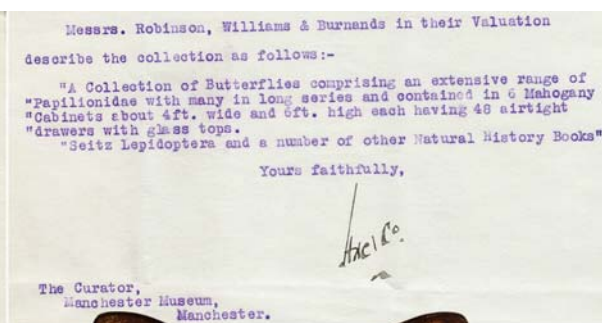
The correspondence was primarily between the Museum, especially R.U. Sayce (The Keeper of the Museum), and the solicitors (Hore, Pattinson & Bathurst; their chambers were at 48 Lincoln's Inn Fields, London) who dealt with Longsdon's will.

The first letter in this series, which was undated, was from an A.G. Gabriel in the Department of Entomology at the British Museum in London, indicating that he had taken an early look at the Longsdon collection of butterflies (presumably at the home of David Longsdon). He wrote in the letter that he had recorded "some of the more interesting and rare specimens I noticed in the Longsdon collection". The notes refer to there being nine notable specimens in the list, including "a fine female *Papilio bridgei prospero*, a very rare specimen of *Papilio noblei*, a male *Papilio arcturus*, several females of *Papilio ulysses* and some interesting forms of *Papilio dardanus*" (Fig. 22).

The opening of correspondence between the firm of solicitors and Manchester Museum began in late 1937. David Longsdon died on 16 October 1937 and in his will "The deceased bequeathed to your Museum my collection, including duplicates, of lepidoptera and all my entomological books, provided that the Museum shall by its proper officer undertake to retain the collection in good condition and not sell the same." (in a letter from Hore, Pattinson & Bathurst dated 19 November 1937 in the archive; see Fig. 21). The solicitors asked Manchester Museum to send a representative to Longsdon's house to inspect the collection and assess if they wished to accept it. Harry Britten, a renowned British entomologist who was the Museum's Assistant Keeper of Entomology at that time [see Hincks, 1954], visited Longsdon's house to assess the collection. He would also sort out the transport of the collection to Manchester once the Grant of Probate had been authorized. About two weeks later (17/12/1937) the solicitors informed Sayce that probate had been granted and Sayce replied that Britten would supervise the removal of the collection in early January 1938. In late January/early February 1938 Sayce asked the solicitors if they had any indication of a connection between David Longsdon and Manchester and/or the University of Manchester but, alas, no information was forthcoming from the solicitors. In a later letter (1/2/1938) Sayce asked the solicitors if any duplicates in the collection could be used to exchange for other specimens to fill any gaps in the collection. Replying to this request from



21



22

Figs 21–22. 21 — letter of Longsdon's will from the solicitors; from the Manchester Museum's entomological archive; 22 — female *Papilio ulysses* Linnaeus, 1758 from Amboina, Mollucca Islands; nowadays this butterfly is used as an emblem for Queensland tourism. Scale bar: 2 cm.

Рис. 21–22. 21 — письмо адвоката с завещанием Лонгдона; из энтомологического архива Манчестерского музея; 22 — самка *Papilio ulysses* Linnaeus, 1758 с Амбоина, Молукские острова; в настоящее время бабочка является туристической эмблемой Квинсленда. Масштаб: 2 см.

Sayce, the solicitors indicated that the exchange procedure suggested seemed perfectly reasonable and could go ahead. As far as we know, to date no specimen has been removed or exchanged from the collection. They also confirmed that no duty was payable on the bequest. A final letter from the solicitors (16/3/1938) to Sayce informed him that a Mr Janeson, of Hornsey, had left two *Papilio* specimens at their office which he had recently repaired for Longsdon. The solicitors asked Janeson to keep the specimens until the museum contacted him to arrange for them to be sent to Manchester. We don't know if the specimens were sent to the Museum.

C. Correspondence with the dealers

Three dealers were his principal sources: viz., Ernest Swinhoe, whose business was based in London, William F.H. Rosenberg, who was also based in London, and Dr Otto Staudinger and Herr Andreas Bang-Haas, whose dealership was in Dresden (Germany). Longsdon also acquired specimens from auction-rooms (e.g., 'Stevens Rooms') and smaller natural history dealers, as evidenced by the data labels attached to the specimens in his collection. Details of Longsdon's correspondence with the natural history dealers given below are useful for a better understanding of how wealthy British Aurelians of that time assembled their butterfly collections.

i) Correspondence with Ernest Swinhoe

Ernest Swinhoe (1869–1921), who described himself as an 'Exotic Lepidopterist' on his headed notepaper, came from quite a renowned pedigree. Both his uncle, Robert Swinhoe (1836–1877), and his father, Charles Swinhoe (1838–1923), were famous collectors of birds and Lepidoptera (see Anon. [1924] and Fisher [2007] for further details). So it is hardly surprising that Ernest Swinhoe also developed a passion for natural history, eventually becoming an animal dealer in London. His business was already well-established in the 1890s as he took out an insurance policy for fire with insurers (now Aviva) in 1898 to cover his lepidopteral and other natural history collections.

Longsdon's dealings with Ernest Swinhoe began in March 1905. The first letter from Swinhoe (1/3/1905) indicated that he was sending several specimens of different species to Longsdon (for the price of £4-12-0) and he asked Longsdon to let him know which ones were not needed so that he could make arrangements to collect them. The species purchased by Longsdon were *Papilio fuelleborni* (£2) and *P. godeffroyi* (£2); see Figs 23–24. This was the usual format for the Longsdon-dealers business relationships — the deadstock were sent on approval and any that Longsdon did not want he returned by post or they were collected from him (in the case of the two London dealers, see above), though more usually the former. At that time, the UK had a monetary system comprising pounds, shillings and pence. There were twelve pence in one shilling and twenty shillings (or 240 pence) in one pound. The equivalent of £4-12-0 in 1905 would be £1,439.89 as of 2000 (see Table 6). So, building up a collection of exotic tropical butterflies as an armchair

lepidopterist was clearly a hobby only for wealthy people. Interestingly, Swinhoe wrote that he was giving Longsdon first refusal on these species after Baron Walter Rothschild, who was the pre-eminent collector of the period and had kept two of each species (see Rothschild [1983] for his detailed biography). So it would appear that Longsdon was high up the pecking order of Victorian and Edwardian butterfly collectors.

Table 6
Equivalence of £1 from 1900–1935 compared with £1 in 2000. [Source: www.concertina.com/calculator/index]

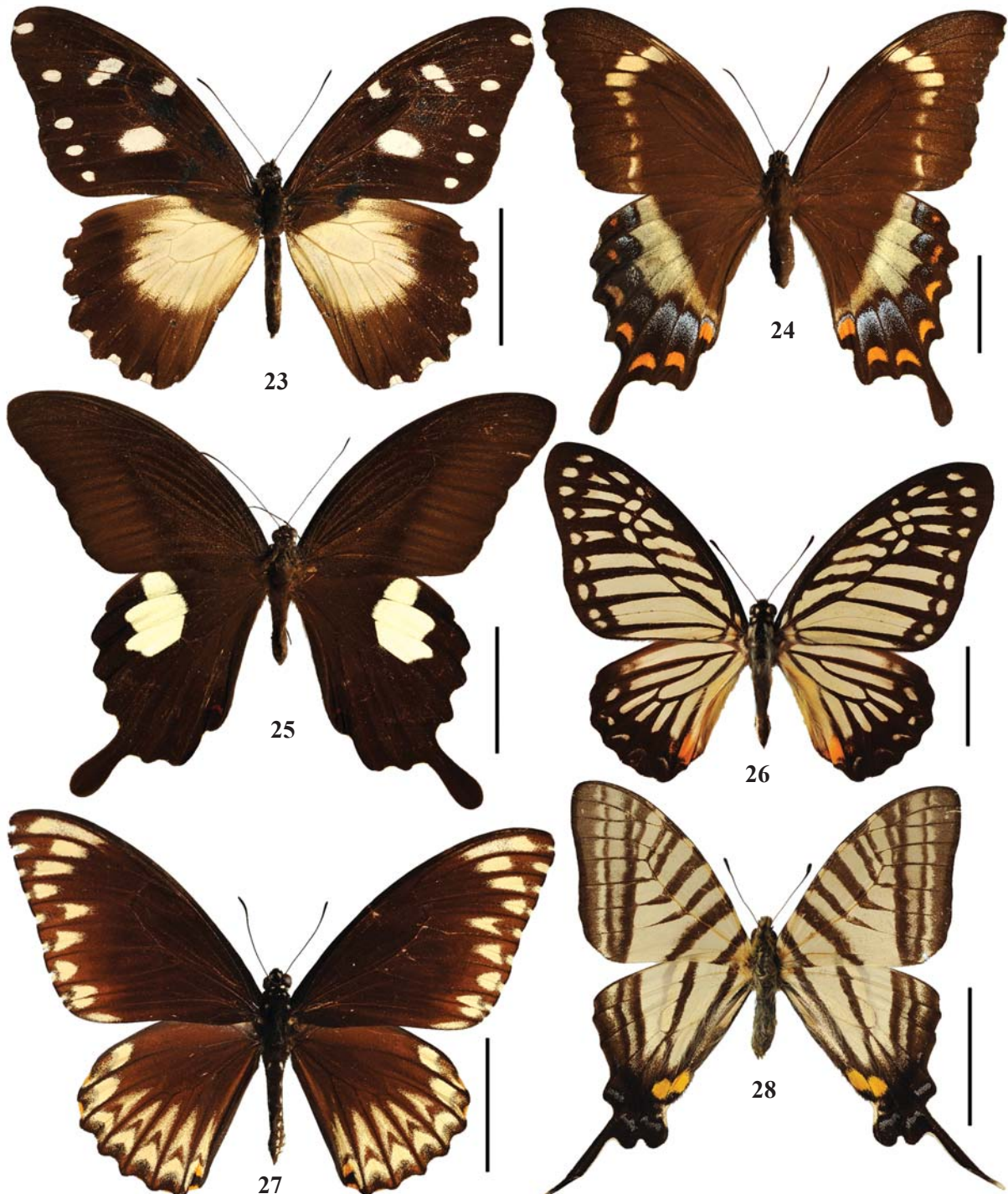
Year	Value (£) in 2000
1900	320.63
1901	316.96
1902	316.60
1903	315.16
1904	314.80
1905	313.02
1906	303.83
1907	302.10
1908	300.13
1909	299.81
1910	296.92
1911	292.22
1912	285.88
1913	277.02
1914	274.28
1915	236.77
1916	208.29
1917	162.95
1918	131.29
1919	114.95
1920	99.65
1921	106.14
1922	131.73
1923	141.63
1924	139.63
1925	138.51
1926	141.70
1927	139.14
1928	140.83
1929	140.55
1930	141.48
1931	144.21
1932	146.73
1933	147.67
1934	146.11
1935*	143.98

* 1935 was the last dated correspondence with dealers that is evident in the Longsdon archive.

Subsequent correspondence tended to be similar, with Swinhoe sending specimens to Longsdon, who kept those he wanted and returned the rest, with payment, see Table 7. A fascinating insight into the Swinhoe-Longsdon relationship was evident in a letter sent by Swinhoe on 30/1/1908. It again suggested that Longsdon was a favoured collector as Swinhoe quoted prices to him that were below the equivalent prices for other customers. So, instead of 10 shillings each he was

providing specimens at 10 shillings for two. A letter of 27/11/1908 recorded that Swinhoe offered to keep an

eye open for any specimens that Longsdon was particularly keen to get: Longsdon had obviously sent Swinhoe



Figs 23–28. Some of the *Papilio* species acquired by D. Longsdon from Ernest Swinhoe: 23 — female *P. fuelleborni* Karsch, 1900 from Malawi; 24 — female *P. godeffroyi* Semper, 1866 from Samoa Islands; 25 — male *P. helenus* Linnaeus, 1758 from Sikkim, India; 26 — female *Graphium xenocles* (Doubleday, 1842) from Assam, India; 27 — female *Papilio clytia* Linnaeus, 1758 from Assam, India; 28 — male *Pazala eurous* f. *asakurae* Matsumura, 1908 from Formosa. Scale bars: 2 cm.

Рис. 23–28. Некоторые виды *Papilio*, приобретённые Д. Лонгсдоном у Эрнеста Свинхо: 23 — самка *P. fuelleborni* Karsch, 1900 из Малави; 24 — самка *P. godeffroyi* Semper, 1866 с островов Самоа; 25 — самец *P. helenus* Linnaeus, 1758 из Сиккима, Индия; 26 — самка *Graphium xenocles* (Doubleday, 1842) из Ассамы, Индия; 27 — самка *Papilio clytia* Linnaeus, 1758 из Ассамы, Индия; 28 — самец *Pazala eurous* f. *asakurae* Matsumura, 1908 с Формозы. Масштаб: 2 см.

a list of his 'desiderata' but, alas, this list was not in the files. In the same correspondence Swinhoe also offered Longsdon some butterflies from Assam that he had in stock as he believed Longsdon might like them as replacements for ones in poorer condition in his collection. The species included *Papilio helenus* (Fig. 25), *Papilio xenocles* (now *Graphium x.*) (Fig. 26) and *Papilio panope* (now *P. clytia*) (Fig. 27). Another feature of Swinhoe's correspondence with Longsdon was that he was prepared to offer a price reduction if Longsdon took all the butterflies in any batch sent to him. No doubt this also served to keep Longsdon as a regular customer, as he was clearly building up a very large collection at his home.

Table 7
Number of specimens that Swinhoe sent on approval to David Longsdon.

Year	Number of specimens
1905	22
1908	276
1909	147
1910	30
1911	26
	501

As Longsdon's collection expanded and his knowledge and expertise in recognizing species, variations and aberrations improved, Longsdon occasionally challenged Swinhoe on his identification. Thus in a letter of 19/11/1909 Swinhoe thanked Longsdon for his cheque and for returning surplus insects and confirmed that the *Papilio poeta* (now *Parnassius epaphus*) sent were accurately identified. Swinhoe wrote that "*the two specimens were examined by Oberthür so you will know it [i.e., the identification of the species] is quite correct*". In the late 19th and early 20th centuries the French entomologist Charles Oberthür (1845–1924) was a leading authority on the Lepidoptera of North Africa and Tibet [Champion, 1924; Riley, 1924].

A characteristic of the Longsdon letters, to all three main dealers, was that he would query the prices he was being charged. Once, Swinhoe took an interesting line in his letter of 6/12/1909 saying that 'Staudinger and Bang-Haas' (the German dealers that Longsdon dealt with) thought that a specimen of *Papilio horatius* (now *P. epycides*) just a few years ago was 35 shillings so Swinhoe's current offer of a specimen for Longsdon "*was not too much according to Staudinger*". Clearly the dealers were able to stand firm on price on occasions!

The final pieces of correspondence from Swinhoe were dated 7/6/1911 and 10/6/1911. In the letter of 7 June Swinhoe mentioned that he did occasionally get specimens sent to him from Argentina and that he would let Longsdon know when the next consignment arrived. He also told Longsdon that he recently received some '*exceedingly scarce*' specimens of *Graphium eurous f. asakurae* (now *Pazala e. f. a.*; see Fig. 28) from Formosa. On 10 June he wrote that if Longsdon would like to see these he would have to go to Swinhoe's office in the

next ten days to look at, and presumably buy, any that he wanted. In fact, he did not purchase any of them.

ii) Correspondence with W.F.H. Rosenberg

William Frederick Henry Rosenberg (1868–1911) was an ornithologist and entomologist, who, as M. Rothschild put it [1983: p. 157], belonged to "*a motley crew of professional dealers*" working particularly for Baron Rothschild. Surplus material was made available to other collectors, such as Longsdon, and museums. On his letter headings Rosenberg described himself as a 'Naturalist and Importer of Exotic Zoological Collections' (or as a 'Traveller-Naturalist') so, presumably, he was more of a general natural history dealer than Swinhoe (see also Beolens & Watkins [2003]).

The first correspondence was undated, but was probably from late 1901 or early 1902. In it, Rosenberg offered Longsdon specimens of 12 species of butterflies for 16 shillings and eleven pence. Longsdon's reputation as one of England's most important collectors of butterflies in 1902 was evident in a letter of 8/7/1902 when Rosenberg wrote that Longsdon was to get "*first offer of any Papilio bachus and Papilio madyes*" (now *Battus m.*) that he received. This suggests that Longsdon's reputation as a collector of butterflies was well-established and Rosenberg was aware of this. Rosenberg was clearly anxious to keep Longsdon's custom, as can be seen in his letter to Longsdon on 10/3/1903. He finished his letter with a phrase redolent of the period — "*Hoping to be favoured with your further esteemed orders, Very sincerely, Yours W. F. H. Rosenberg*".

Table 8
Number of specimens that Rosenberg sent on approval to David Longsdon

Year	Number of specimens
1901/2	17
1904	8
1908	114
1909	97
1910	73
	309

From this point onwards Rosenberg seems to have been a regular provider of stock to Longsdon, though dealings picked up from 1908 onwards, see Table 8. This coincided with the date when Longsdon was elected to a Fellowship of the Entomological Society of London: Rosenberg was already a Fellow. From 1908 Rosenberg was supplying Longsdon with stock at increasing frequency so Rosenberg would be receiving a steady supply of butterflies from agents around the world. Rosenberg had been in business for many years (in fact, he started as a natural history dealer in Tring in 1897) and had also built up a reputation too. Thus in a letter of 19/3/1908 he was able to offer Longsdon a single specimen of *Papilio rosenbergi* (now *P. ascolius*; see Fig. 29) described and dedicated to him by Druce [1903]. The Longsdon collection also has examples of *Papilio swinhoei* (now *Graphium nomius*; see

Fig. 30) and *Papilio staudingeri* (now *Troides* s.; see Fig. 31) dedicated to other dealers he dealt with.

Rosenberg had agents worldwide and they were operating over wide areas of the continents (Europe, Americas, Africa and Asia) so Rosenberg's stock reflected where the agents decided to go. In a letter to Longsdon on 25/8/1908 Rosenberg suggested that Longsdon kept both specimens of *Papilio aglaope* (now *Parides a.*) he had sent as he did not know when he (the field agent) would visit the area again. The price range showed that there was considerable competition between collectors for either rarer species or ones in fine condition: thus a single specimen of *Papilio orchamus* (now *P. torquatus*) was one shilling but one of *Papilio rex* was £2-15-0, 55 times the value of *orchamus*.

By now, Longsdon was sending lists of 'desiderata' to Rosenberg and was always trying to get specimens at reduced prices. In a letter to Longsdon on 28/10/1908 Rosenberg was getting rather exasperated with this behaviour and wrote "I receive several thousand *Lepidoptera* from Peru every month so have the opportunity of judging the relative value of such species. As you have bought a good deal from me lately I will, if you insist upon having it [a specimen of *Papilio chrysoleus* (now *Papilio bachus*)] at 18 shillings, let it go, but I really think it worth 20 shillings, especially as I have endeavoured to meet you with regard to the other points you raise".

In 1909 business dealings between the two continued. Rosenberg often sent large numbers of specimens, for example, specimens of 58 different species on 30/



Figs 29–31. Some of the Papilionidae species acquired by D. Longsdon from William Rosenberg: 29 — female *Papilio rosenbergi* (now *P. ascolius* Felder et Felder, 1836) from Ecuador; 30 — male *P. swinhoi* (now *Graphium nomius* (Esper, 1785) from Burma; 31 — female *P. staudingeri* Röber, 1888 (now *Troides* s.) from Indonesia. Scale bars: 2 cm.

Рис. 29–31. Некоторые виды Папилиониде, приобретённые Д. Лонгсдоном у Вильяма Розенберга: 29 — самка *Papilio rosenbergi* (сейчас *P. ascolius* Felder et Felder, 1836) из Эквадора; 30 — самец *P. swinhoi* (сейчас *Graphium nomius* (Esper, 1785)) из Бирмы; 31 — самка *P. staudingeri* Röber, 1888 (сейчас *Troides* s.) из Индонезии. Масштаб: 2 см.

10/1909 for £13/19/1. In that same letter Rosenberg observed that Longsdon got a real bargain when he bought the *Papilio elephenor* specimen. Rosenberg wrote that “*I ought to have priced it at £3 or £4 as it is much rarer than I thought. But of course it is my mistake and I must put up with it*”. One can only imagine that Longsdon was smiling when he read this!

We get some insight into the problems that collecting agents had when searching for butterflies to send to Rosenberg to satisfy the demands of European collectors. A letter sent to Longsdon from Rosenberg on 8/8/1909 ended by noting that “*it is difficult for collectors in British Guiana to go far enough into the interior*” to collect stock. The potential health hazards attendant with collecting butterflies in the tropics were vividly noted by Rosenberg in a letter to Longsdon on 11/11/1909. “*In going to the tropics it is exactly during the first few months that one has to be most careful to avoid malaria. I was seven months in Colombia before I got it, but then I spent the first four months at a comparatively high altitude in a fairly healthy valley. But as usual with healthy localities I found it no good for collecting and had to go into hotter country and the best spot I could get for collecting was the most unhealthy in the whole district. I was there about three months before getting fever, though it nearly finished me when it did seize me. I stayed in the same place for another four months after that, in spite of having attacks of fever every two weeks or so, and I have never been really free from it since. It is all very well for people to sit in armchairs to write of science defying malaria, etc. but it is the sort of thing which can never be more safely defied at a distance than at close quarters. I am afraid there is no newer specific for malaria than quinine, but the efforts of science are more in the direction of prevention than of cure and no doubt much progress has been made, as you suggest, by drainage. But I cannot see how they are ever going to drain whole coastlines, where the whole country is swampy for several miles inland, as occurs in many parts of South America. No doubt it is a good thing to avoid being bitten by mosquitoes by the use of curtains, and also to be careful of ones drinking water, using it filtered whenever possible.*” Nevertheless, in July 1910 Rosenberg wrote to Longsdon to tell him that he now had 1 male and 2 female *Papilio coleus* (now *Parides c.*) available from a collector in French Guinea! Longsdon and Rosenberg continued to do business until Rosenberg’s death in 1911: the final correspondence was dated 7 June 1911.

iii) Correspondence with ‘Staudinger and Bang-Haas’

This insect trading company was founded by a German entomologist Otto Staudinger (1830–1900) in Dresden in 1859. In the 1880s, his son-in-law, Andreas Bang-Haas (1846–1925) became co-owner of the firm — now ‘Staudinger and Bang-Haas’ — of which he became fully in charge in 1900 after O. Staudinger passed away. In 1913, the firm passed to his son Otto Bang-Haas (1882–1948) who became its sole owner. The company was a relatively large organization and

specialized in providing natural history material for museums and academic institutions, as well as private collectors like David Longsdon. The letters from ‘Staudinger and Bang-Haas’ retained in the Longsdon archive were invariably written by Otto Bang-Haas.

The first letter from them was dated 26/1/1912. In it Bang-Haas acknowledged Longsdon’s cheque for £26 so a fairly large consignment of butterflies must have been bought. It is possible that the order placed by Longsdon was to make up for the loss of supply caused by the death of Rosenberg. As well as sending a cheque, Longsdon also sent the German dealers a list of his ‘desiderata’. Rather unusually, just over a year (3/1/1913) elapsed before the next piece of correspondence, see Table 9.

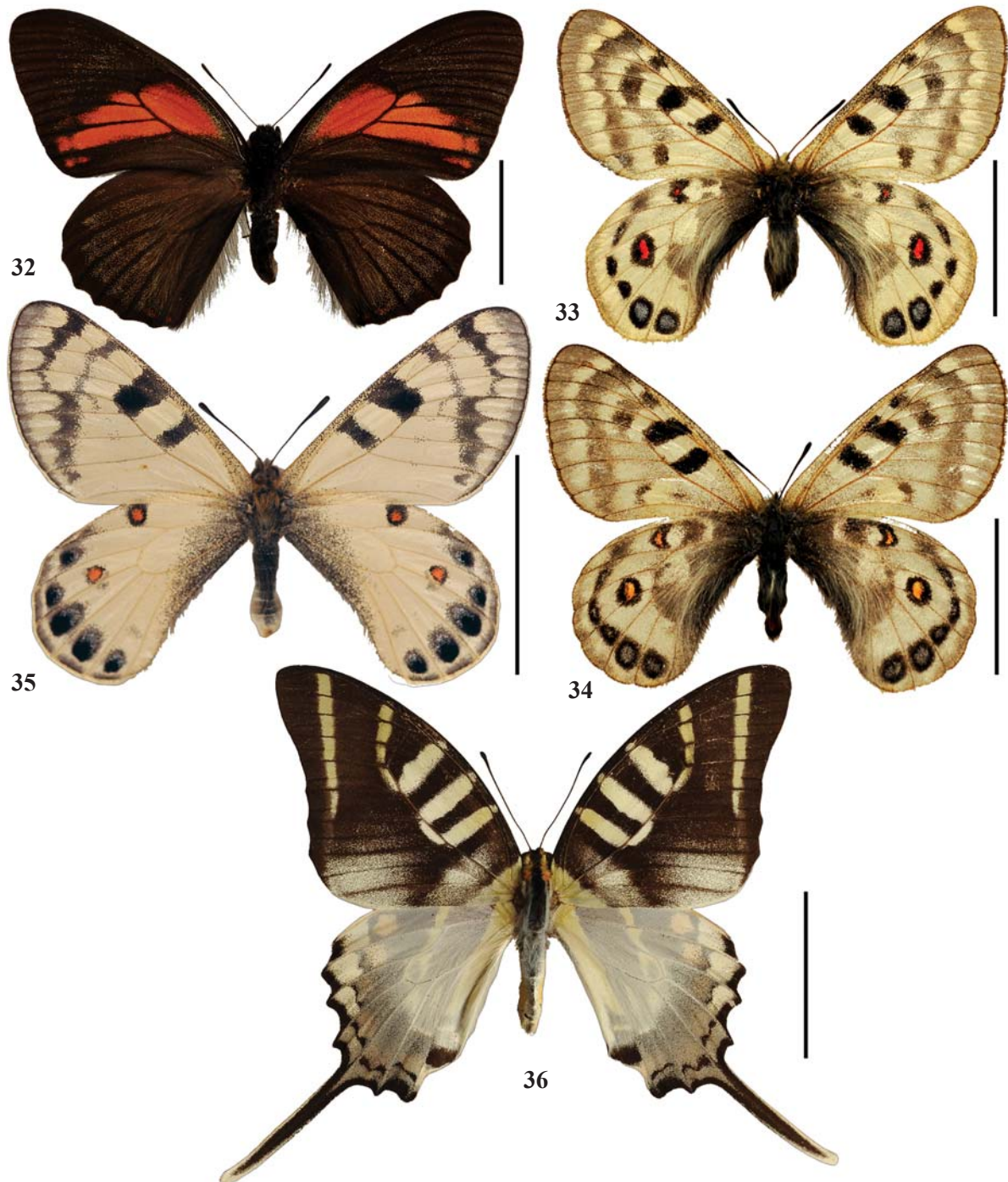
Table 9
Number of specimens that ‘Staudinger and Bang-Haas’ sent on approval to David Longsdon

Year	Number of specimens
1913	41
1914	135
1920	84
1921	70
1922	0
1923	232
1924	341
1925	207
1926	251
1927	101
1928	161
1929	90
1930	152
1931	6
1932	48
1933	232
1934	193
1935	54
	2,348

Bang-Haas, like Swinhoe and Rosenberg before him, soon informed Longsdon in a letter of 3/2/1913 that he could not give further reductions in price for specimens, though he was prepared to allow Longsdon to make payment in instalments for the £43-15-6 that was owing. However, Bang-Haas soon (15/2/1913) wrote to Longsdon to tell him that he could have a 7.5 % reduction in price on the consignment if he bought £25 of items and a 10 % reduction if he kept £35 of butterflies. This sliding scale of reductions became a familiar feature of the dealings between ‘Staudinger and Bang-Haas’ and Longsdon. The battle for supremacy between dealer and collector continued in early 1914. For example, in a letter dated 29/1/1914 Bang-Haas agreed to a reduction from £22-16-8 to £20-15-0 in the cost of specimens sent but steadfastly refused to budge on the purchase price (£2-10-0) for a specimen of *Papilio charopus*. Bang-Haas asked Longsdon to return it as soon as possible if he was not prepared to pay the price asked and further informed him it was a rarity and that

he could easily sell it to any one of six other clients for that price. Bang-Haas made a special reduction on another butterfly (*Parnassius nomion davidis*; now

P. nomion) from £8-4-0 to £6-10-0 and added that a Mr Philipps was happy to have paid £7-10-0 for it and Mr Oberthür even more! On 30/5/1914 Bang-Haas sent a



Figs 32–36. Some of the Papilionidae species acquired by D. Longsdon from 'Staudinger and Bang-Haas': 32 — female *Papilio euterpinus* Osbert Salvin et Godman, 1868 from Macas, Ecuador; 33–34 — male and female of *Parnassius cephalus* Grumm-Grshimailo, 1891 from Kansu, China; 35 — male *P. loxias* Püngeler, 1901 from Tian-Shan, Aksu river, Kyrgystan; 36 — male *Graphium antiphates* (Cramer, 1775) from Assam, India. Scale bars: 2 cm.

Рис. 32–36. Некоторые виды Papilionidae, приобретённые Д. Лонгедоном у 'Штаудингер и Банг-Хаас': 32 — самка *Papilio euterpinus* Osbert Salvin et Godman, 1868 из Макаса, Эквадор; 33–34 — самец и самка *Parnassius cephalus* Grumm-Grshimailo, 1891 из Кансю, Китай; 35 — самец *P. loxias* Püngeler, 1901 с р. Аксу, Тянь-Шань, Киргизия; 36 — самец *Graphium antiphates* (Cramer, 1775) из Ассам, Индия. Масштаб: 2 см.

letter to Longsdon thanking him for recent payment and asked him to finalise his account before the end of the year — World War One was looming.

Dealings between the two ceased until Longsdon wrote to Dresden on 29/12/1919. A few days later (10/1/1920) Bang-Haas replied asking him to settle his outstanding debt of £32-4-0 and offered to send him some specimens he had received from his collector in Peru. In March (11/3/1920) Bang-Haas wrote to Longsdon to thank him for an order of Ecuadorian butterflies and added that he had only got one specimen of *Papilio euterpinus* (see Fig. 32), hence the price of £15!! He also informed Longsdon that he could not sell it for £12. Later that month Staudinger wrote to Longsdon and told him that “*it is very costly now to fit out an expedition, plus there is the added danger of robbers*”. Collecting butterflies was a potentially dangerous business!

Over the next couple of years there was a steady stream of correspondence between Longsdon and Bang-Haas, with Longsdon, as ever, trying to trim prices and Bang-Haas very reluctant to lower them, but happy to take money in instalments. On 7/05/1923 Bang-Haas wrote to Longsdon thanking him for his latest ‘desiderata’ list and added that “*I am astonished by how many species you still want*”. However, Bang-Haas did go on to suggest to Longsdon that he might consider making him the sole dealer for all his lepidopteral needs. This seems to have been the case, judging from Table 9. On 6 July 1923 Bang-Haas sent a list to Longsdon of some species he had received and asked him to let him know as soon as possible which specimens he wanted as he had collectors in Sweden and Switzerland keen to receive them. A later letter that month from Bang-Haas made it clear that he had recently sent “*some butterflies from my own private collection in order to favour you*”. This suggests an important, but informal, symbiotic relationship had been established between the two men. Bang-Haas finished by saying that he would like payment in UK bank notes as foreign currency was wanted in Germany.

Later that year (8/10/1923) Bang-Haas wrote that things were financially difficult for the firm in what he termed “*communistic Saxony*” and he asked Longsdon to send him monies owed as soon as possible. A few months later (24/03/1924) he told Longsdon that the financial situation in Germany meant that they would need to ask for payment in advance as money from UK often takes two months to arrive. To sweeten the pill Bang-Haas told Longsdon that one of his collectors had recently returned from South America and that he was now prepared to reserve these specimens for Longsdon but that credit would not be available.

For the remainder of 1925 and 1926 business dealings between the two continued with Longsdon, as ever, seeking price reductions. Bang-Haas’ patience seemed to finally snap in a letter dated 9/1/1925 when he wrote “*Please return as soon as possible the specimens you do not want to keep. All prices are net and therefore we cannot give any reduction and it is useless to demand cheaper prices*”. However, in 1926 Bang-Haas offered

him discounts (10%, 8% or 6%) depending on the quantity bought. The sliding scales did not, however, include particularly rare or very fine specimens. Bang-Haas also offered Longsdon payment by instalments once again. On 15/11/1927 Bang-Haas wrote to Longsdon saying that he was sending him four rarities. He added the rather telling phrase that they were not “*even in the most notorious collection, Rothschild’s!*” There were no price reductions for these specimens. Only two of these rarities were purchased by Longsdon, a male and a female *Parnassius cephalus* (see Fig. 33–34). In 1928, in letters on 7/2/1928, 25/2/1928 and 15/3/1928 the spiralling increase in costs of rare butterflies was evident when Bang-Haas sent Longsdon, on approval, 22 specimens for 575 shillings, 28 specimens for 936 shillings and 29 specimens for 872 shillings and sixpence. In January 1929 Bang-Haas sent him one specimen of *Parnassius loxias* for £12 (see Fig. 35). It was quite clear that Longsdon was still assembling his collection at a prodigious rate during the year, with consignments to him of over 40 butterflies in some cases.

Longsdon sent his final list of ‘desiderata’ to ‘Staudinger and Bang-Haas’ in January in 1933. It consisted of 121 (sub) species of butterflies and he asked for either 3 males and 2 females or 2 males and 1 female of each. The final letter from Bang-Haas was sent on 3/08/1935. It related to a list of specimens sent in 1935, including *Papilio pompilius* ab. *nebulosus* (now *Graphium antiphates*; see Fig. 36). The files do not indicate whether the cessation of dealings was triggered by Longsdon or Bang-Haas, though David Longsdon died just over two years later in October 1937.

iv) *What of Longsdon’s other suppliers?*

It is interesting to note that the number of specimens sent to Longsdon by Swinhoe, Rosenberg and ‘Staudinger and Bang-Haas’ is only 3,158 butterflies (or 34 %) out of the total of 9,301 in the collection. Since Longsdon frequently returned items to each of the three dealers it means that more than 2/3 of the collection must have been sourced elsewhere — most probably from less well-established butterfly dealers and collectors. Unfortunately, the Longsdon archive contains very limited information about them.

On 20/05/1919 he compiled a list for a W.R. McMullen Esq. detailing the species of *Papilio* he wanted from India. Longsdon’s wish list included the species he was seeking, the geographic location of the species, the prices he was prepared to pay for specimens and the numbers of males and females he wanted. The number of species, sub-species or aberrations, he wanted totalled 68.

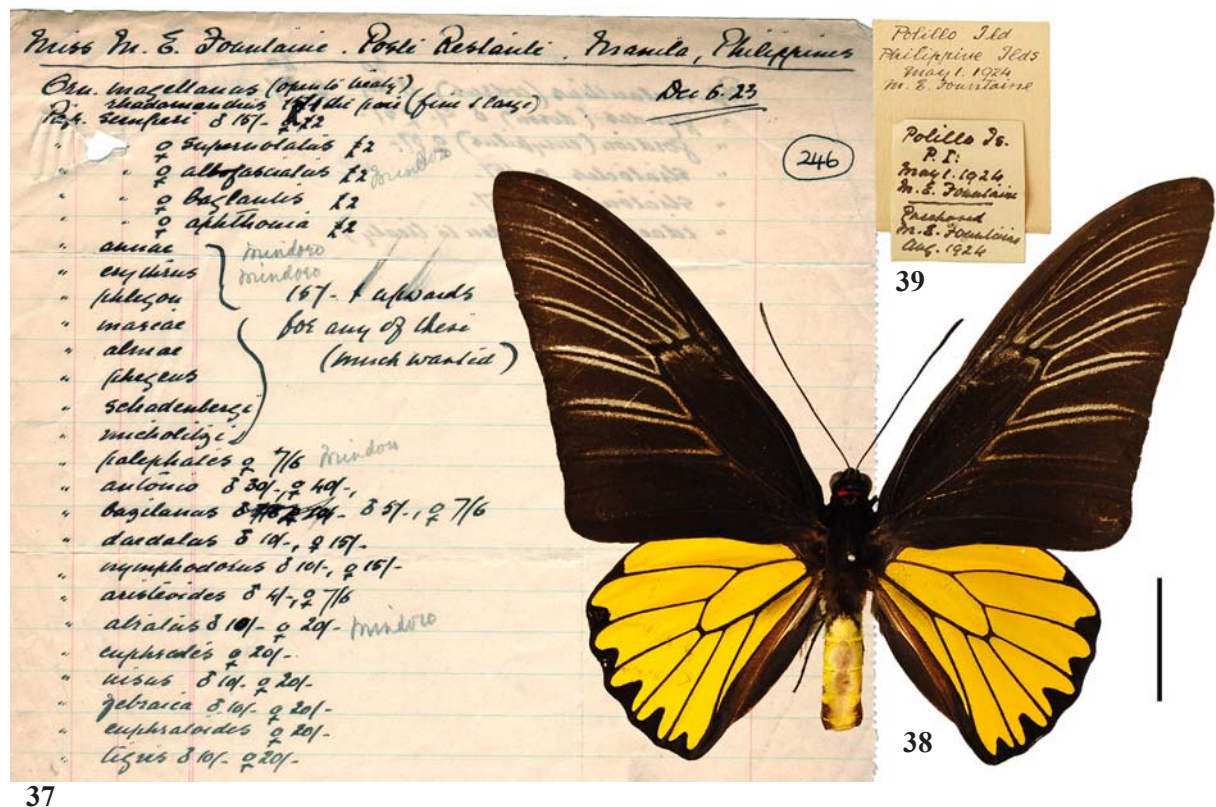
Miss Margaret E. Fountaine (1862–1940), one of the most famous butterfly collectors and travellers of her generation (see Scott-Stokes [2006] for some amazing details of her biography), also supplied specimens to Longsdon (Fig. 14, 39). In the Longsdon file, we found a price list of Philippine butterflies originated from Miss Fountaine (Fig. 37), and her name is also mentioned on a number of data labels attached to specimens

(e.g., Figs 12, 39). Her diaries reveal that Longsdon commissioned her to collect butterflies for him in the West Indies (and apparently from other places as well), "which was an opportunity for earning money too good to be missed" [Scott-Stokes, 2006: 238].

David Longsdon was so meticulous a collector that many individual data labels in his collection contain a reference to the name of the dealer/collector who supplied the specimen and the date of its purchase (e.g., Figs 14, 16, 39). Even a quick search through some data labels has revealed that although David Longsdon was not a taxonomist and researcher he was acquainted with many of the distinguished entomologists of his time, apparently as a member of the RES. For instance, a number of specimens, including the syntype of *Papilio antinorii* (now *P. dardanus*; Table 4), were purchased from Charles Oberthür (1845–1924), a well-known French lepidopterist and "the owner of the second largest private collection of butterflies in existence" [McDunnough, 1916: 874] (about 5 million specimens at the beginning of the 20th century) who described numerous new species and genera of Lepidoptera [Champion, 1924; Riley, 1924]. The name of another famous British entomologist was revealed from the labels at-

tached to *Papilio homerus* (Fig. 12; Table 5): Oliver E. Janson (1850–1926), a distinguished coleopterist and a specialist in Economic Entomology, whose small business as a dealer in Entomology "was no mere means to him of livelihood, but a source of pure personal delight by reason of close touch it brought him into with Nature" [Poulton, 1927: 74]. Some rarities were acquired by Longsdon from a German entomologist and recognized dealer of exotic insects, Friedrich Wilhelm Niepelt (1862–1936), including the so-called *Papilio 'nandina'* (Fig. 15), a natural *P. dardanus* x *P. phorcas* hybrid [see Vane-Wright & Smith, 1992], which, as stated on the data label, was purchased in 1925. Of the less known collectors whose specimens are in the Longsdon collection some labels (e.g., Fig. 16) revealed the names of A. Kruck and A.L. Darrah; we failed to find any information about these persons.

Many specimens were purchased by Longsdon from auction-rooms, as evidenced by the data labels attached to the specimens of *Papilio hospiton* (see Table 5). The labels indicate that the specimens were purchased from 'Stevens Rooms' that is the famous Stevens' Auction Rooms at Covent Garden specializing in natural history items. This dealership was founded



Figs 37–39. Some of the *Papilio* species acquired by D. Longsdon from Miss Margaret E. Fountaine: 37 — price list of Papilionidae species from the Philippines to be ordered from Miss Fountaine, December 1923; from the Manchester Museum's entomological archive; 38 — male *Troides magellanus* (Felder et Felder, 1862) from the Philippines mentioned in the price list and then purchased from Miss Fountaine in 1924; 39 — the original data labels of the photographed specimen. Scale bar: 2 cm.

Рис. 37–39. Некоторые виды Papilionidae, приобретённые Д. Лонгсдоном у мисс Маргарет Фонтейн: 37 — ценник на виды Papilionidae с Филиппин для заказа у мисс Фонтейн, декабрь 1923 г.; из энтомологического архива Манчестерского музея; 38 — самец *Troides magellanus* (Felder et Felder, 1862) с Филиппин, упомянутый в ценнике, который затем был куплен у мисс Фонтейн в 1924 г.; 39 — этикетки сфотографированного экземпляра. Масштаб: 2 см.

by John C. Stevens (1809–1859) in 1831 and existed until the 1940s. A lot of very large historic collections have been sold through ‘Stevens Rooms’ including the Rev Henry Lang collection, of which some specimens are available in the Longsdon collection (Table 5). Henry Charles Lang (–1909) was vicar of All Saints in Southend and the author of “Butterflies of Europe” (1880–1884) (see Anon. [1910] for further details). Incidentally, Southend is a district of Lewisham in London where Longsdon’s father was born (see above; p. 146) and where Longsdon lived from 1926 to 1937 when he died. A coincidence!

There is no doubt that data labels retain a wealth of information on Longsdon’s smaller suppliers and are of great potential for future research. For instance, their examination would help one to learn more about the networking that existed between Victorian and Edwardian Aurelians. Such a project would require extraction and analysis of information from the data labels of all 9,301 specimens in the collection, which has not been done yet. This enormous but rewarding task was outside the scope of the present study but will, hopefully, be pursued by someone else in the future. In doing so, we should then be able to present a much fuller picture of one of Britain’s most significant butterfly collectors of the late 19th century and the first half of the 20th century.

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