# NOTES ON THE IRISH ENTOMOLOGIST ALEXANDER HENRY HALIDAY (1806– 1870)

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#### Abstract

Alexander Henry Haliday (1806-1870) is the most famous of the Irish entomologists. Information is provided *inter alia* on his family, education, time in Dublin and Italy, membership of societies, the man, the collection, contacts, major achievements and important works. There are sections on Haliday and the Linnean Collection, and Charles Darwin. His entomological techniques and preferences are described. Haliday's contributions to the biology of insects, the type concept and synonymy are also discussed. Valid Haliday genera and species occurring in Ireland are listed along with the valid species named after him. A comprehensive bibliography of his published works is included.

**Key words**: Haliday, Linnean, Darwin, entomology, Ireland, collection, types, history, bibliography.

## Introduction

This paper is mainly based on Nash, O'Connor and Hughes (2005), Nash (1983, 2011), O'Connor (1997) and O'Connor and Nash (1982) with some additions, amendments and corrections. Further information will be found in those articles.

Alexander Henry Haliday, also known as Enrico Alessandro Haliday and Alexis Heinrich Haliday (1806–1870), was an Irish entomologist. He is primarily known for his work on the Hymenoptera, Diptera and Thysanoptera, but Haliday worked on all insect orders and on many aspects of entomology.

Haliday was born in Holywood, County Down, Ireland. A boyhood friend of Robert Templeton, he divided his time between Ireland and Lucca (now part of Italy) where he was a co-founder with Camillo Rondani and Adolfo Targioni Tozzetti of the Italian Entomological Society. He was also a Member of the Galileiana Academy of Arts and Sciences, Microscopical Society of London, Royal Irish Academy, Royal Dublin Society and the Belfast Natural History Society as well as a Fellow of the (now Royal) Entomological Society of London.

With Hermann Loew (1807–1879), Alexander Haliday was among the greatest dipterists and hymenopterists of the 19th century and one of the most renowned entomologists of his day. His achievements were in four main fields: description, higher taxonomy, synonymy and biology. Most of Haliday's correspondence with British and Continental entomologists is in the library of the Royal Entomological Society, other parts are in the Hope Library at the Oxford University Museum of Natural History. Haliday died in Lucca in 1870.

## The family

Alexander Henry Haliday was born at "Clifden" (also known as "Clifton"), Holywood, a small seaside town in County Down, Ireland, on 21 November 1806, the eldest child of Dr William Haliday and Marian Webster. He was the son of one of Belfast's best known physicians. The Haliday family was Protestant, although not religious, and clearly well-placed, holding 3,228 acres (13.06km<sup>2</sup>) of farmland in County Antrim valued at £3,054.00 in 1820. The family also owned property in Holywood and in Dublin and had a cloth merchant business. In addition, they had shipping interests. Haliday's brother, William Robert, was at sometime a Lieutenant-General in the 36th Regiment of Foot quartered at Windsor. Aside from a collection of parrots from Australia, Malacca and Malabar, collected in the 1840s, William Haliday, whose name on the army register is spelled Halliday, is not known as a naturalist. Interestingly, A. H. Haliday's surname is also sometimes given as Halliday on legal documents. Haliday's sister was named Hortense. She was interested in botany. Little is known of Hortense except that she suffered from tuberculosis as did the rest of the family. She is charmingly enshrined in

the text accompanying Curtis's plate 596 of *British Entomology; being illustrations and descriptions of the genera of insects found in Great Britain and Ireland May 1, 1836* which states "For the beautiful drawing of *Rosa hibernica* (the Belfast Rose), I am indebted to Miss Haliday" (Fig. 1). Alexander Haliday was a cousin of the historian Charles Halliday M.R.I.A. (also spelt Haliday) (1789-1866), who, despite antiquarian studies which resulted in the publication of a history of *The Scandinavian Kingdom of Dublin*, made a large fortune in business.

The Haliday family had relatives in Lucca, Italy - the Pisanis – "I have been a long time about writing to you but the return of my sister and some other relatives from Italy who had not been home for many years has filled our house and occupied my thoughts mostly ie my cousin Mme Pisani, her husband and three nieces with myself" he wrote. The Pisanis were a prominent Lucca family and Haliday a frequent visitor to "Campagna bella e chiamate di Tuscanys a Firenze, a Lucca, a Pisa ed al Cinque Terre che la campagna della Toscana allunga dall'aria croccante e libera del Apennines ad alcune delle linee costiere più belle dell'Italia". The frequent presence of the Pisani family led to, according to Camillo Rondani, "Alessandro's" learning Italian as a child "al suo ginocchio delle madri, come un nativo".

## Haliday's education

Haliday and his life-long friend Robert Templeton (though they were to see nothing of each other after 1833) began their education at the Belfast Academical Institution. Opened in 1814, the school had strong leanings towards Natural History. Haliday, aged twelve, studied Classics first, then two years later took up Arithmetic and then two years after that, Mathematics. Both boys were taught drawing by an Italian master whose talents evidently lay in teaching skill and as a result, became skilled illustrators. The Natural History lessons from George Crawford Hyndman, were not a part of the curriculum but formal. Hyndman was an avid insect collector and one of the founding members of the Belfast Natural History Society which had a Museum and Library. Haliday left the Belfast Academical Institution, and the family home in nearby Holywood, for Dublin where he entered Trinity College in 1822 at sixteen, graduating in 1827.

He was awarded a gold medal in Classics. He was called to the Irish Bar but soon retired from practice. Haliday went to Paris in late 1827 staying for most of a year. However by then, the young man had received the first impetus to his entomological career after meeting John Curtis, one of the foremost entomologists of his day (see Nash, 1983).

#### Haliday's time in metropolitan Dublin 1825-1840

Haliday in the years 1825-1840 spent most of his time in Dublin. From 1833, he lived at No. 3, North Cumberland Street (in later years his Dublin address was No. 8, Harcourt Street). However, he returned frequently to his home "Clifden" in Holywood and also spent much time in London. More than occasionally, he visited Lucca, staying with the Pisanis.

Aside from its modern, metropolitan pleasures, Dublin had competing attractions for Haliday: the Royal Dublin Society housing the Leske Collection, the Marsh Library and that of Trinity College, the Linnaean Garden (a garden presenting the 24 classes of Carolus Linnaeus' Systema), the Opera and the Theatre Royal. In 1835, John Curtis made an entomological tour of Ireland with Haliday. An account of this venture is given in Nash (1983).

## Italy 1841-1848

In 1842, Haliday was appointed High Sheriff of Antrim but between the years of 1841 and 1848, he seems to have spent most, if not all, of his time away from Ireland mainly in the Pisani family home in Lucca. During this period, the Great Famine had commenced in 1845. In these years, Europe was also riven by conflict culminating in the Revolutions of 1848.

# More settled times

In the 1850s, Haliday, once more resident in Dublin where from 1854-1860 he edited parts of the *Natural History Review*, gave lectures at meetings of the Dublin University Zoological Association (Trinity College) and curated the insect collections at the same University. Here he renewed his interest in Geology (Haliday, as did most educated people, had a well-read copy of Charles Lyell's three volume book, *Principles of Geology*, published between 1830 and 1833).

He became a member of the Dublin University Geological Society on its foundation, not only attending meetings but reading papers of geologists unable to attend in person. Presumably his language skills were also useful. A manuscript in the Royal Irish Academy proves that Haliday gave a series of talks on fossil insects to the Dublin geologists, illustrating this with specimens from his own and the University's collections. In these years, he made regular visits to London, usually staying with Henry Tibbats Stainton. The visits coincided with the more important meetings of the Entomological Society of London. Visits to the continent included two trips to Switzerland staying near Monte Rosa with entomological friends.

#### Italy 1862-1870 and his travels

In 1862 (February), Haliday took up residence in Villa San Cordeo in Lucca, staying in Paris *en route* to study the important Johann Wilhelm Meigen collection. Changes of address in Lucca became the rule in March, "Casa Pelosi", May, "Monte Bonelli" and in 1863 "Villa Buia". Then following a trip to Sicily, he moved into Villa Pisani, with his cousin Mme. Pisani and her family (husband and three nieces). Visits to see entomologists and expeditions became much more frequent. Haliday travelled widely in Italy, mainly in the North (Emilia-Romagna, Liguria, Lombardy, Piedmont, Trentino-Alto Adige/Südtirol, Aosta Valley and in Tuscany) although he made two trips to Sicily. Various trips to Switzerland, France and Bavaria followed and in 1865, with Edward Perceval Wright, he made an entomological expedition to Portugal. In May and June 1868, he toured Sicily also with Wright.

This excerpt from a letter gives a flavour of these trips "I am back but a few days from an excursion in the Apennines cut short by unfavourable weather. I took a horse and man from baths of Lucca and found myself at Abetone the pass between Tuscany and Modena — ascending Gione the highest point of the central Apennines which lies a little detached from the chain so commanding a more extensive view including both seas Adriatic and Tyrrhenum but I saw on the top only fog, rain and rock. Rondinago (Monte Rondinaio) the next highest (in the main chain) was little better as to view and in the mist my guide who had never been at the summit took me up the most precipitous side really a perilous climb in fog — I had intended

going on to some of the Apuan Alps (or Carrara range) but this experience discouraged me — also I found that the season was too far advanced in respect to vegetation and consequently insects". The second tour of Sicily with Wright in 1870 was his last. He died in Lucca on 12 July 1870 after a short illness..

Some of his collection localities included Emilia-Romagna, Comacchio and Tuscany.

# Societies

Haliday was a Member of the Belfast Natural History Society, the Dublin University Geological Society, the Dublin University Zoological Association, the Entomological Society of London, the Italian Galileiana Academy of Arts and Sciences, the Linnean Society of London, the Microscopical Society of London, the Royal Dublin Society, the Royal Irish Academy and the Stettin Entomological Society. He was a Member and co-founder of La Società Entomologica Italiana (the Italian Entomological Society). Although a Member of the Irish Bar, he never practiced law.

Haliday joined the first Alpine Club in the year of its foundation in 1857. It was a club of English gentlemen devoted to mountaineering, first of all in the Alps, members of which have successfully addressed themselves to attempts of the kind on loftier mountains.

## Haliday the man

A cultured man, Haliday was quite at home at the opera and was an avid concert and theatregoer in both Dublin and Lucca and, occasionally Rome. Various literary references point to his liking of the novel, and naturally the classics and we know of family visits especially with Madame Pisani (of whom he appears to have been extraordinarily fond) "to view the paintings". He was, presumably, culturally no different to any other highly educated European gentleman. Invitations are to be found among his papers in the Royal Irish Academy:- to M. Gounod's "Sappho", first performed in Paris in 1851; Verdi's "Rigoletto", "Il trovatore", "La traviata" and "Les vêpres siciliennes"; Schumann's "Manfred"; Donizetti's "Lucia di Lammermoor" and Berlioz's "The Infant Christ". Such advanced musical tastes and opportunities usually come early in life and were presumably instilled in Hortense and Henry by the Pisanis rather than by Haliday's provincial and decidedly dour family. It is worth noting, but no more, that Giacomo Puccini, the Italian opera composer, was born in Lucca, Haliday's other home town in 1859. Business, or rather lack of it, did not occupy Haliday. There is no reference in his will to other than minor amounts. He died without leaving property or significant sums of money. As to personality, there is much humour in Haliday's writing - all of it good natured and he was very tolerant of failings although not always. Modesty was not a virtue; Haliday was by no means self-effacing. Far from it, as this quotation from a letter reveals:- "A seafog, beyond the headland of Piombino, obscured the Mediterranean with the islands Elba, Corsica etc. But on that side the wild serrated coast of the Apeninne Alps was distinctly drawn and before us, from the one extremity where it first rises out of the Lunigiana valley, to the other where it ends in the half detached group of the Pisan mountains whereby the Pisans cannot see Lucca". The quotation, which, in full is, in English, "Hunting the wolf and whelps upon the mountain for which the Pisans cannot see Lucca" is from Dante's Inferno Canto 23. No matter what the context, Haliday simply could not resist showing his literary and other prowess whenever the opportunity presented itself. Haliday was not a religious man. Religion did not interest him although a regular attender at the Protestant church in Lucca and an opponent of Transcendentalism. His political views were less progressive, at least in respect of the American Civil War and the Risorgimento. Despite the disordered nature of much of Haliday's life and suggestions that he suffered from nervous dyspepsia, this is belied by much of his writing and by and large he was in robust health.

# Major achievements

Contributions to the species concept through the designation of type specimens which would be suitably housed: this was suggested in a letter to *The Entomological Magazine* in 1833 and the idea was approved by the editor, Francis Walker.

Contributions to the concept of synonymy.

Establishing rules for systematics and nomenclature: Haliday's refined analysis of the

history of names and the natural groupings the names identified was a model of perfection and the rules that Haliday suggested were taken up by all important Continental and most British authors.

Haliday's description of the genus *Orphnephila* (Diptera: Thaumalaeidae) and his plate 2 (Haliday, 1856) set a new standard of descriptive taxonomy far in advance of anything of its time.

Haliday's "Essay on the classification of parasitic Hymenoptera" is a seminal work of higher taxonomy and he was one of the pioneers of the group. The higher classification of the parasitic Hymenoptera is unstable but many of Haliday's higher taxa have survived.

Haliday was a specialist, working full-time on Diptera in the families Sphaeroceridae and Dolichopodidae and, on the Hymenoptera and Thysanoptera (excepting the area of synonymy).

## **Important works**

The following are the more important works of Haliday. However a full bibliography is given further on in this article.

- **1832** The characters of two new dipterous genera with indications of some generic subdivisions and several species of Dolichopodidae. *Zoological Journal* **5**: 350-368, 1 plate.
- **1833** with Francis Walker, *Monographia Chalciditum*, London, 1833–1842. Much of this work was collaborative with Haliday who was the sole author of the sectional diagnoses.
- 1833-1838 An essay on the classification of the parasitic Hymenoptera of Britain which correspond with the Ichneumones minuti of Linnaeus. *The Entomological Magazine* 1: 259-276, 333-350, 480-491; 2: 93-106, 225-259; 4: 92-106, 203-221; 5: 209-248.
- 1836 British species of the dipterous tribe Sphaeroceridae. *The Entomological Magazine* 3: 315-336.
- 1836 An epitome of the British genera in the order Thysanoptera with indications of a few of the species. *The Entomological Magazine* 3: 439-451.
- **1837** with John Curtis, James Charles Dale and Francis Walker, Second edition of *A guide to the arrangement of British insects being a catalogue of all the named species hitherto*

discovered in Great Britain and Ireland.

- 1838 New British Insects indicated in Mr. Curtis's Guide. *Annals of Natural History* Series 1,2: 112-121.
- 1838 New British Insects indicated in Mr. Curtis's Guide. *Annals of Natural History* Series 1,2: 183-190.
- 1839 Hymenoptera Britannica: Oxyura. Fascicule 1. Hippolytus Balliére, London.
- **1839** *Hymenopterorum synopsis ad methodum clm. Fallenii utplurimum accommodata. Addendum to Hymenoptera Britannica: Alysia.* Hippolytus Balliére, London. 4pp.
- 1851-1856 *in* Walker, F. *Insecta Britannica Diptera* 3 volumes. Reeve and Benham, London. [the characters and synoptical tables of (a) the order (Volume I: 1-9); (b) the Empidae (Volume I: 85-88); (c) the Syrphidae (Volume I: 234-237)]; [chapters on (a) the Dolichopidae (Volume I: 144-221); (b) the Borborides (Volume II: 171-184); (c) the Hydromyzides (Volume II: 247-269)]; [the addenda and corrigenda (Volume III: xi-xvi)]; [contributions to the plates of J. O. Westwood]; [separates the "Britannic" Diptera into those from England, Scotland, Wales and Ireland e.g. (E.S.W.I.)].
- 1851 with C. A. Dohrn. Wissenschaftliche Mittheilungen Sendschreiben von Alexis H. Haliday an C. A. Dohrn über die Dipteren der in London befindlichen Linnéischen Sammlung. Aus dem Englischen überstezt von Anna Dohrn. *Stettiner Entomologische Zeitung* 12: 131-145.
- 1857 [Review] Zoonomische Briefe: Allgemeine Darstellung der thierischen Organisation Von Dr. Hermann Burmeister, Professor der Zoologie zu Halle. Erster und Zweiter Theil. 8vo. Otto Wigand: Leipzig. 1856. *Natural History Review* (including the Proceedings of the Irish Natural History Societies) 4: 69-77.

## Haliday and the Linnean Collection

In the winter of 1847-1848, Carl August Dohrn joined Haliday in London for a study of the Linnean collection later to be published in the *Stettiner Entomologische Zeitung* for 1851 (Volume **12**: 131-145) under the German title "Wissenschaftliche Mittheilungen Sendschreiben

von Alexis H. Haliday an C. A. Dohrn über die Dipteren der in London befindlichen Linnéischen Sammlung. Aus dem Englischen überstezt von Anna Dohrn". Dohrn, with his daughter Anna was staying with Henry Tibbats Stainton in Lewisham at the time. It was she, on a later visit to London, who translated the account. This is the only known early account of the Diptera collection of Carl von Linné, examined 64 years after its acquisition by the Linnean Society.

# Haliday, Charles Darwin and the National Museum of Ireland

Charles Darwin's interest in Entomology began in his childhood and he spent much of his spare time at Cambridge (1828-1831) collecting beetles. Subsequently, while Entomology was not the major preoccupation of the Beagle voyage, he collected insects in many localities. Indeed, some of his captures were important and played their part in the formulation of his later theories.

After Darwin's return to England, he was faced with the problem of getting his material identified, lamenting in 1836 that "I have scarcely met anyone who seems to wish to possess any of my specimens". In March 1837, Francis Walker wrote to Haliday "Mr Darwin...has lately returned to England with his collections...He is at a loss what to do with the *Muscidae*, *Ichneum adscits* [probaby adsciti,] *Thrips* (of which there are some Titans half an inch long) etc –and wishes me to offer them to you to describe in whatever Ent work you please, he would like to have an answer soon. I think you will find them very interesting and we can easily send them to you." Specimens were sent in 1837 and 1838 and consisted mainly of small Diptera and Hymenoptera taken by general sweeping in Bahia, Brazil; Chiloe Island, Chile; the Galapagos Islands; Hobart; Tasmania; King George's Sound and Sydney, Australia; New Zealand and St Helena.

Haliday never managed to do much with the material. However in July 1839, Walker wrote to him:- "My descriptions of Darwins Chalcides are printed and will be published immediately. I have all the specimens in my possession and I will forward them to you together with all my own collection and they will be speedily followed by the few remnants that I have left. You are quite welcome to retain mine as long as you feel inclined and what I ask of you is in plain words that you will point out my errors, supply my omissions, reunite the species that I have cut up and divide into groups the overpopulous and disordered genera. Your drawings of the genera would be most suitably accompanied by such an essay". As a result, Haliday supplied drawings of some of the Darwin insects which appeared as Plate P in *The Entomologist* **1** (see Haliday 1840-1844 in the bibliography). Haliday's authorship is indicated by a shamrock.

The Darwin insects retained by Haliday were acquired by the National Museum of Ireland in 1882 when the Haliday Collection was donated by Trinity College, Dublin. They remained scattered in various store-boxes until 1977-1982. Ken Smith was then working on his classic work *Darwin's Insects* and expressed his wish to examine the material. As a result J. P. O'Connor had the specimens photographed in their original store-boxes. They were then extracted, staged, labelled and carried in batches by hand to the Natural History Museum, London, where they were examined by Ken Smith and other experts. After their return to the National Museum of Ireland, they were housed in a new entomological cabinet and now occupy three drawers. Further information concerning the specimens will be found in Smith (1987, 1996) and in a bound ms (O'Connor, 1988) which accompanies the specimens and is entitled "Darwin's insects".

## Haliday's techniques of studying insects (Figs 2-4)

"The minute Hymenoptera are best collected by beating into, and sweeping with, a net made of fine gauze, and Mr. Haliday recommends me to collect them into quills (shaft of a bird feather with the ends sealed by tiny corks), and afterwards to empty their contents into hot water, by which means their wings are naturally expanded; then by introducing a card under them to take them out of the water, arranging the legs and wings when necessary with a camel's hair pencil, and leaving them upon the card till they are dry, they may afterwards be taken off with a penknife, and gummed upon the points of small pieces of drawing - or card-paper of a long triangular form" - Curtis *British Entomology* July 1st 1830.

Haliday worked mainly with very small insects. Study of the tiny parts required dissection,

glass slide mounting and a very high quality microscope. The equipment was obtained from the London microscopist Andrew Pritchard. Whole specimens were mounted on card using gum, the card being transfixed by an entomological pin of German manufacture (Figs 2-4). Since the descriptions were necessarily based on more than one specimen, they may sometimes be ambiguous (based on more than one species). Collecting and general methodology followed the instructions given by George Samouelle in *The entomologist's useful compendium; or, An introduction to the knowledge of British insects, comprising the best means of obtaining and preserving them, and a description of the apparatus generally used.* He also used Abel Ingpen's (1839) manual *Instructions for collecting, rearing, and preserving British & foreign insects: also for collecting and preserving crustacea and shells.* On collecting trips, he used a Coddington lens. He was also an excellent artist (Figs 5-7).

## Coleoptera and Lepidoptera versus Hymenoptera and Diptera

The standard works on the Coleoptera of the northern parts of Europe were in Haliday's time mostly in French, Latin and German, and these were indispensable for monographic study. Haliday possessed copies of Gyllenhal's *Insecta Suecica: Coleoptera sive Eleuterata* (1808-27), Erichson's *Die Kafer der Mark Brandenburg* (1837) and later works by Schaum, Kraatz, von Kiesenwetter, Redtenbacher, Fairmaire and Laboulbène. He had a comprehensive collection of Coleoptera and sought authoritatively named specimens from English and Continental authorities. However he wrote very little on this group. In Lepidoptera, he lacked the essential Continental literature. In Ireland, the microscopic Hymenoptera and Diptera were not only very little known and therefore offering more scope for taxonomic study, especially of higher taxa, but were more diverse and more readily collected in the often wet and windy weather.

## Haliday and the biology of insects

The term Biology was coined (independently by Lamarck and Treviranus) in 1802 as the science of life. There is no better description for Haliday's studies of insect life histories and behaviour. Excepting the phraseology, the observations that Haliday details could easily come

from a modern pen. The acuteness of observation and style are reminiscent of the celebrated French behavioural entomologist Jean Henri Fabre (1823-1915).

"Bethylus.- The insects of this genus seem fond of the flowers of Sygenesia, but their principal haunts are in dry sandy districts near the sea. The low tufts of *Rosa spinosissima*, flourishing among the sand-cliffs, support numerous larvae of *Tineidae*, which when full fed, often fall into the little pits of loose sand formed at the foot of the cliffs, by the gradual scaling of the bank and the eddies of wind. These pits are complete traps for various insects, to which Myrmica rubra and other predaceous species resort, and among these our Bethyli will be seen prowling. On the fifth of last June, I observed a female of the largest size occupied with one of those larvae which was full fed, and, I should think, about six times its own weight. It had seized this by the mouth, and was with great perseverance endeavouring to transport it up the sliding sides of the pit. Perceiving that though apparently not discouraged after ten minutes' ineffectual exertion, it had no chance of succeeding, and wishing to trace its proceedings, I placed a fragment of straw in the hollow within its reach. The moment it had touched this railway the state of affairs was changed — taking a firm hold with its hind feet, it swung its prey round, and set off with it at a smart pace, walking backwards and dragging the body after it. From this time it was constantly endeavouring to ascend the face of the sand cliff, availing itself with admirable adroitness of the morsels of grass, twigs, &c., imbedded in it, not seeming to care how obliquely they lay, if they enabled it to gain a little elevation; so that its track was a zigzag. Frequently it chose stems which, rising nearly erect, receded from the bank above: I at first thought it was losing its labour, but it was at no loss how to act: after ascending a few inches with the whole weight suspended in the air from its mandibles, it would poise itself and its burden across the stem, with its head towards the bank, then throw itself off, at the same time extending its wings, which though incapable of raising it from the ground, were able to give it some impulse towards the bank, on which it thus alighted, at a spot someway above the springing of the stem. If, on ascending one of these twigs, it discovered that it was bent the wrong way, or receded too far from the cliff, it lost no time in hesitation, but stopping short of a sudden, commenced the descent again. It may be guessed that, dragging a gross, slimy body

over twigs, &c., close to or half buried in the sand, frequent impediments would occur, which its extreme activity in walking indifferently, sideways or backwards, and main exertion of muscular force, generally enabled it to overcome; but sometimes it had drawn its burden under or between two twigs, which arrested its course: after a violent tug or two without effect, it would retrace its steps, dragging the *larva* in the opposite direction, till it was extricated, then disposing it so as to keep clear of the obstacles, start again. On every occasion when it had left its hold, it made for the same part, and spent some time fastening its mandibles on the mouth of the prey beneath, so that the *larva* should be dragged on its back: once where this was not the case, it was impeded by the latter grappling with its feet the twigs over which it was drawn, and its captor quickly finding the error, let go and took a new hold in the usual position. When it had ascended about two feet, it came upon a fragment of reed partly imbedded in the sand, the stem of which was broken off and open below, a few dry elastic shreds of the leaf only remaining. Having reached the part where these grew, it by a strong pull drew its burden about half through, till its body was grasped between two of these as in a vice: then letting go, it began to explore the bank on each side to some distance, tapping with its antennae the conspicuous objects: in a few minutes seeming to be satisfied, it hastily descended the reed, and entered its stem at the lower end; it did not remain long in the interior, and on its reappearance, set off for the spot where it had left the larva, which, after pulling it out of the holdfast, it seized by the mouth as usual, and began to descend the reed again: it did not complete the journey this time, but taking advantage of the same kind of security to detain its prey, it repeated the reconnaissance, then returning, dragged it to the opening, and leaving it there, plunged in itself, but immediately reappearing, drew in the *larva* head foremost, speedily disappering in the interior; so that I could not observe its subsequent proceedings, and being obliged to turn homewards, I left them undisturbed. I think, however, it will seem probable that the bore of the reed was employed instead of an artificial funnel, for the cells which should contain the progeny of the Bethylus, with its store of provision. If these insects select only full grown caterpillars, I can scarcely imagine one of the smaller individuals managing these unwieldy bodies" (Haliday, 1834).

# Haliday and the type concept

Today, the concept of species descriptions being supported by type specimens is a familiar one to taxonomic zoologists. The idea is that descriptions and illustrations alone are insufficient to unequivocally characterise a species and that the descriptor must choose a specimen to carry the species name - a holotype. In the event of confusion over the way in which a name should be applied, for instance, following the discovery of closely similar species the separation of which is based on characters not mentioned in the species description, the type is called into play to settle the issue. Whilst this is not specifically stated in Haliday's paper in The *Entomological Magazine* for 1833 the implication is obvious and would have been so to those familiar with the problem (note the editor's response). It reads:- "57. Public Entomological *Collection.* - SIR, May I venture a suggestion, which perhaps may appear futile or impracticable? In justice to those who undertake the elucidation of some extensive branch of entomology, or the more arduous labour of a *Fauna*, as one of the irregulars of the camp, I feel it imperative on us, if we do nothing in clearing, at least not to contribute towards encumbering the Augean stable. [the task of clearing this immensely dung-ridden stable was one of the seven labours of Hercules - child's play compared with the problems of name application confronting entomologists then as now]. Were there any public collection in which the describers of new genera and species might deposit examples, labelled with the names, adding to their lucubrations a reference to such cabinet, or enumerating in the Entomological Magazine the deposits made; it would, I imagine, prove a facility to future enquirers, at least with regard to such species as are not rare, and therefore of most importance. [Haliday does not say why but name problems particularly afflict the most common species which were in the Eighteenth and Nineteenth centuries described and given different names in a multiplicity of publications - see Haliday and synonomy]. I doubt not that the possessors, even of unique specimens, although they may be unwilling to transfer them to other private collections with equal risk of dispersion, would in many cases cheerfully yield them for the sake of more permanent utility. In order to put this idea into practice, it would be necessary to find some depôt where such would obtain room, and be generally accessible; and being unacquainted with the state and economy of the

musea of the metropolis [London], I do not know if these requisites could be fulfilled."

"[The establishment of the Entomological Society exactly supplies the *desideratum*; if it will be any convenience to our correspondents to transmit through our hands any contributions to the general collection now forming by the Society, we shall feel gratified in obliging both the donors and the Society.—ED.]" [Francis Walker]

So far as we are aware, this is the first mention of such a practice in entomological or other zoological literature and Haliday may be said to be the first proponent of type practice.

## Haliday and synonymy

The explosion of species descriptions in the first three-quarters of the nineteenth century had an unfortunate consequence. The difficulties of language, delays in publication, small runs, an ever increasing number of journals, inadequate descriptions not to mention occasional rivalries were compounded by sheer quantity. To add to this, the disruption caused by warfare, for instance the War of Liberation in Italy which eventually led to unity, the Prusso-Danish War and political turmoil in the Germanic States, caused endless problems. Travel became difficult and indeed dangerous while outbreaks of cholera and typhoid precluded it all together from time to time. Visits to foreign capitals such as Vienna, Copenhagen, Berlin and Paris where important collections were housed were often unwise and, of course, the combatants did not welcome each other's nationals.

Thus, it is hardly surprising that many species, especially common ones, were described more than once. The staphylinid beetle, *Staphylinus maxillosus* Linnaeus, 1758, constitutes something of a record, including generic transfers, this beetle had received 35 names by 1874. The reasons for insect species coming to possess more than one name are various and it is sometimes the case that there is genuine confusion about the biological species. However, overlooked or unobtainable literature is by far the commonest cause especially in the nineteenth century.

Haliday's expertise in the complex arena of synonymy was such that he was consulted by most leading authorities of the day especially Loew. One can see why in this excerpt from Haliday's (1855) reviews of "1. Zetterstedt, Insecta Lapponica, etc. I Tom. Foliae; Lipsiae, 1840" and "2. Zetterstedt, Diptera Scandinavae, etc. II Tomi, 8vo. Lundae, 1842-1852": "Zetterstedt is not one of the writers who are content to make a parade of erudition, by transcribing synonyms one after the other, without the pains of critical discrimination. The authorities he cites have evidently been collated with scrupulous care, while he has not thought it necessary, in general, to go back to the older authorities, with the exception of Linnaeus, Fabricius, and Degeer. But he has not had access to all the recent sources, especially those of the English literature, so that some portions of his matter will turn out to have been anticipated. The admirable BRITISH ENTOMOLOGY, of Curtis, is not once referred to, and thus, amongst other things, the genus *Dolichopeza* is attributed, without remark, to Meigen, who had omitted to cite from Curtis, the original author. Hence, also, the representatives of other modern genera, in the Swedish fauna lie disguised under alias names-Diadocidia ferruginosa as Sciara testacea—Catocha under Lestremia—Corynoneura among the Chironomi of Zetterstedt. Having inserted, for completeness' sake, the descriptions from other pens of some species, the originals of which he had not an opportunity of collating, he has, consequently, been led, in one or two instances, to give the same insect twice over; thus, the genus Cordyla appears among the Rhyphii, and again, as Pachypalpus (Macquart), amongst the Mycetophilinae, and Ditomyia annulata is twice described as Ceroplatus flavus, and as Mycetobia annulata. He has not constantly regarded the strict law of priority to which we have been accustomed to defer, in the application of generic and trivial names. Fallen and Fabricius seem to weigh more with him sometimes than age or usage, and rules are made to yield to predilection. We will let the dates stand, instead of statements of detail, for judgement of the principal instances of this sort, which affect the generic nomenclature. Zetterstedt has adopted (1) Hirtea Fb. (1798) for Bibio Geoffroy (1764); Hirtea Scopoli (1763) being a different genus.—(2) Chenesia Macq. (1834) for Orphnephila Haliday (1831), or Thamalea Ruthe (same year).-(3) Sicus Fb. (1798) for Coenomyia Latr. (1797); Sicus of Scopoli (1763) being Myopa.-(4) Eristalis Fallen (1810) for Chilosia Mg.; whereas Eristalis was first named and characterized by Latreille in 1804, while Eristalis of Fb. Antl. (1805) is made up of species of the genera Chilosia, Eristalis, Helophilus,

Merodon, Mallota, Milesia, Eumerus, Pipiza and Chrysogaster.—(5) Syrphus Fallen, for Eristalis Latr.; Meigen having defined the genus Syrphus otherwise in 1803, and Syrphus of Fb. Antl. including Volucella and Sericomyia along with part of Eristalis.—(6) Scaeva Fb. (1805) for Syrphus, previously applied by Meigen as above.—(7) Scatomyza Fallen (1810) for <u>Scatophaga Mg</u>. (1803)—and (8) Scatophaga Fallen for Psila Mg. (1803), being four years before Jurine applied the name of Psilus to the Hymenopterous genus Diapria Latr. (1797).—(9) Oxyrhina Mg. (1838) for Trigonometopus Macq. (1835).—(10) Ulidia Mg. (1826) for Mosillus Latr. (1804), or Chrysomyza Fallen (1817). But Ulidia also may be retained, being limited, according to Loew's suggestion (Beytr.i. 27), to U. erythrophthalma and the allied species."

### The Haliday collection

Most of the Haliday collection is housed in the National Museum of Ireland, Dublin, Ireland and it is described in O'Connor and Nash (1982). After Haliday's death, seventy-eight boxes were donated in 1882 to the Museum by Trinity College, Dublin. The contents of some of the boxes were by then completely destroyed for the material had suffered greatly during Haliday's travels: "During the last three years I was not able to give any attention to the preservation of my collection which had to undergo two removals of domicile without my superintendence to the packing and transport and I find that they have suffered largely by mould and Anthreni". The material is in the main Irish but insects from England, France, Italy, Norway, Scotland and Sicily are also present. There are specimens from Curtis, Darwin, Rondani, Walker and other collectors. Most of the Haliday Collection has now been incorporated into the Museum's main collection but many boxes remain as Haliday left them (Fig. 2).

Additional Haliday material is in the John Curtis Collection of Insects, Museum Victoria, Australia; the Oxford University Museum of Natural History, England; Museo di Storia Naturale "La Specola", Florence (Firenze), Italy (Rondani Collection); Museo Museo Regionale di Scienze Naturali di Torino, Turin, Italy (Spinola Collection); Nationaal Natuurhistorische Museum Naturalis, Leiden, The Netherlands (eg. types of species described later by Gustav Mayer) (1830-1908)); The Natural History Museum, London and the Museum für Naturkunde

# (Humboldt Museum), Berlin, Germany (Loew).

After Haliday's death, his surviving library was donated to the Royal Irish Academy by his friend Edward Percival Wright in March 1871. This is the finest collection of early entomological books (1634-1864) and reprints in Ireland, containing numerous rare items. Since Haliday was an adept linguist, many works are in French, German, Italian or Latin. The book bequest can be searched on line using the main catalogue (O'Connor, 2009).

## Contacts

Haliday was a very influential figure in Entomology as his contacts and correspondence show. They included: Jacques-Marie-Frangile Bigot (1818–1893) France; Émile Blanchard (1819–1900) France; Carl Gustav Alexander Brischke (1814–1897) Germany; Emil von Brück (1807–1884) Germany; Jean Baptiste Lucien Buquet (1807–1889) France; Carl Herman Conrad Burmeister (1807–1892) Germany; Achille Costa (1823-1899) Italy; George Robert Crotch (1842–1874) England; John Curtis (1791–1862) England; James Charles Dale (1792–1872) England; Sylvain Auguste de Marseul (1812–1890) France; Henri de Saussure (1829–1905) Switzerland; Michel Edmond de Selvs-Longchamps (1813–1900) Belgium; Achille Deyrolle (1813–1865) France; Carl August Dohrn (1806–1892) Germany; John William Douglas (1814–1905) England; Jean Antoine Dours (1824–1874) France; Henri Milne-Edwards (1800–1885) France; Alexei Pavlovich Fedchenko (1844–1873) Italy and Russia; Johann Angelo Ferrari (1806–1876) Italy; Arnold Förster (1810–1884) Germany; Heinrich Frey (1822–1890) Switzerland; Vittore Ghiliani (1812–1878) Italy; F. Giraud for Joseph-Étienne Giraud (1788–1859) France; Hermann August Hagen (1817– 1893) Germany; August Emil Holmgren (1829–1888) Sweden; Johann Friedrich Jaennicke (1831–1907) Germany; Giorgio Jan (1791–1866) Italy; Charles Georges Javet (1802–1882) France; Johann Heinrich Kaltenbach (1807–1876) Germany; Friedrich Kipp (1814–1869) England; Leopold Anton Kirchner (?–1879) Germany; Ernst Gustav Kraatz (1831–1909) Germany; Hermann Loew (1807–1879) Germany; Edmond de Sélys Longchamps (1813– 1900) Belgium; Hippolyte Lucas (1814–1899) France; Thomas Ansell Marshall (1827–1903) England; Gustav Mayr (1830–1908) Austria; Robert McLachlan (1837–1904) England; Francois Jean-Paul Gervais (1816–1879) France; Étienne Mulsant (1797–1880) France; Andrew Murray (1812-1878) Scotland; Edward Newman (1801-1876) England; Karl Robert Osten-Sacken (1828–1906) U.S.A.; Giovanni Passerini (1816 or 1819–1893) Italy; Fernandino Maria Piccioli (1821–1900) Italy; Odorado Pirazzoli (1815–1884) Italy; Oktavij Ivanovitsch Bourmeister Radoszkowski (1820-1895) Poland and Russia; Hermann Reinhard (1860–1869) Germany; Camillo Rondani (1807–1879) Italy; G. T. Rudd (?-?) London; Otho Ruthe enclosures for Johann Friedrich Ruthe (1788–1859) Germany; William Wilson Saunders (1809–1879) England; Hermann Rudolph Schaum (1819–1865) Germany; Ignaz **Rudolph Schiner** (1813–1873) Austria: **Frédéric Jules Sichel** (1802–1868) France: **Frederick** Smith (1805–1879) England; Maximilian Spinola (1780–1857) Italy; Henry Tibbats Stainton (1822–1892) England; Rasmus Carl Staeger (1800–1875) Denmark; Pietro Stefanelli (1834–1919) Italy; Adolfo Targioni Tozzetti (1823–1902) Italy; Samuel Constantinus Snellen van Vollenhoven (1816–1880) The Netherlands; Georg Ritter von Frauenfeld (1807–1873) Austria and Germany; Ernest August Hellmuth von Kiesenwetter (1820–1880) Germany; Peter Fredrik Wahlberg (1800–1877) Sweden; Francis Walker (1809–1874) England; John Obadiah Westwood (1804–1893) England; Thomas Vernon Wollaston (1822–1878) England; Philipp Christoph Zeller (1808–1883) Germany.

# Valid Haliday genera occurring in Ireland

## DIPTERA

Anarete Haliday, 1833 (Cecidomyiidae); Antichaeta Haliday, 1838 (Sciomyzidae); Aphrosylus
Haliday in Walker, 1851 (Dolichopodidae); Atissa Haliday, 1839 (Ephydridae); Axysta
Haliday, 1839 (Ephydridae); Camilla Haliday, 1838 (Camillidae); Campsicnemus Haliday in
Walker, 1851 (Dolichopodidae); Canace Haliday, 1839 (Canacidae); Catocha Haliday, 1833
(Cecidomyiidae); Chersodromia Haliday in Walker, 1851 (Hybotidae); Clunio Haliday, 1855
(Chironomidae); Clusia Haliday, 1838 (Clusiidae); Epidapus Haliday in Walker, 1851
(Sciaridae); Geranomyia Haliday, 1833 (Limoniidae); Glenanthe Haliday, 1839 (Ephydridae);

Hecamede Haliday, 1839 (Ephydridae); Heleodromia Haliday, 1833 (Brachystomatidae);
Hyadina Haliday, 1839 (Ephydridae); Ilythea Haliday, 1839 (Ephydridae); Machaerium
Haliday, 1832 (Dolichopodidae); Malacomyia Haliday in Westwood, 1840 (Coelopidae);
Oecothea Haliday in Curtis, 1837 (Heleomyzidae); Pelina Haliday, 1839 (Ephydridae);
Peplomyza Haliday in Curtis, 1837 (Lauxaniidae); Pericoma Haliday in Walker, 1856
(Psychodidae); Schoenomyza Haliday, 1833 (Muscidae); Sycorax Haliday in Curtis, 1839
(Psychodidae); Tachytrechus Haliday in Walker, 1851 (Dolichopodidae); Tethina Haliday, 1833
(Pediciidae); Ula Haliday, 1833

#### HEMIPTERA

Atheroides Haliday, 1838 (Aphididae).

#### HYMENOPTERA

Acrodactyla Haliday, 1839 (Ichneumonidae); Adelius Haliday, 1833 (Braconidae); Ademon Haliday, 1833 (Braconidae); Aegilips Haliday, 1835 (Figitidae); Alloea Haliday, 1833 (Braconidae); *Anagrus* Haliday, 1833 (Mymaridae); *Anaphes* Haliday, 1833 (Mymaridae); Baeus Haliday, 1833 (Scelionidae): Brachythops Haliday, 1839 (Tenthredinidae): Centistes Haliday, 1835 (Braconidae); Chaenusa Haliday, 1839 (Braconidae); Charmon Haliday, 1833 (Braconidae); Chasmodon Haliday, 1838 (Braconidae); Chorebus Haliday, 1833 (Braconidae); Chremvlus Haliday, 1833 (Braconidae); Clinocentrus Haliday, 1833 (Braconidae); Colastes Haliday, 1833 (Braconidae); Cteniscus Haliday, 1832 (Ichneumonidae); Dacnusa Haliday, 1833 (Braconidae); Diospilus Haliday, 1833 (Braconidae); *Ephedrus* Haliday, 1833 (Braconidae); *Epiclerus* Haliday, 1844 (Tetracampidae); *Ericydnus* Haliday, 1832 (Encyrtidae); *Euderus* Haliday, 1844 (Eulophidae); Eustochus Haliday, 1833 (Mymaridae); Gnamptodon Haliday, 1833 (Braconidae); Gyron Haliday, 1833 (Scelionidae); Helictes Haliday, 1837 (Ichneumonidae); Heptamelus Haliday, 1855 (Tenthredinidae); Inostemma Haliday, 1833 (Platygastridae); *Iphitrachelus* Haliday, 1835 (Platygastridae); *Ismarus* Haliday, 1835 (Diapriidae); *Melanips* Haliday, 1835 (Figitidae); *Meteorus* Haliday, 1835 (Braconidae); *Mirax* Haliday, 1833 (Braconidae); *Omphale* Haliday, 1833 (Eulophidae); *Ooctonus* Haliday, 1833 (Mymaridae); *Opazon* Haliday, 1857 (Diapriidae); *Orgilus* Haliday, 1833 (Braconidae); *Periope* Haliday, 1839 (Ichneumonidae); *Polynema* Haliday, 1833 (Mymaridae); *Praon* Haliday, 1833 (Braconidae); *Pigostolus* Haliday, 1833 (Braconidae); *Telenomus* Haliday, 1833 (Scelionidae); *Toxares* Haliday, 1840 (Braconidae); *Trachionus* Haliday, 1833 (Braconidae); *Triaspis* Haliday, 1838 (Braconidae); *Trioxys* Haliday, 1833 (Braconidae).

## THYSANOPTERA

*Aptinothrips* Haliday, 1836 (Thripidae); *Belothrips* Haliday, 1836 (Thripidae); *Chirothrips* Haliday, 1836 (Thripidae); *Heliothrips* Haliday, 1836 (Thripidae); *Limothrips* Haliday, 1836 (Thripidae); *Phlaeothrips* Haliday, 1836 (Phlaeothripidae); *Sericothrips* Haliday, 1836 (Thripidae).

# Valid Haliday species occurring in Ireland COLEOPTERA

Actidium coarctatum (Haliday, 1855).

# DIPTERA

Achalcus cinereus (Haliday in Walker, 1851); Allopiophila luteata (Haliday, 1833); Anarete candidata Haliday, 1833; Anopheles plumbeus Haliday in Stephens, 1828; Aphrosylus celtiber Haliday, 1855; Aphrosylus ferox Haliday in Walker, 1851; Aphrosylus raptor Haliday in Walker, 1851; Apiloscatopse bifilata (Haliday in Walker, 1856); Atissa pygmaea (Haliday, 1833); Aulagromyza populicola (Haliday in Walker, 1853); Axysta cesta (Haliday, 1833); Azelia cilipes (Haliday, 1838); Beris geniculata Haliday in Curtis, 1830; Bezzia calceata (Haliday in Walker, 1856); Bibio nigriventris

Haliday, 1833; Boletina nasuta (Haliday, 1839); Campiglossa plantaginis (Haliday, 1833); Campsicnemus alpinus (Haliday, 1833); Campsicnemus loripes (Haliday, 1832); Canace nasica (Haliday, 1839); Catocha latipes Haliday, 1833; Ceratinostoma ostiorum (Haliday in Curtis, 1832); Chaetopodella scutellaris (Haliday, 1836); Chalarus exiguus (Haliday, 1833); Chamaemvia flavipalpis (Haliday, 1838); Chersodromia arenaria (Haliday, 1833); Chersodromia incana Haliday in Walker, 1851; Chersodromia speculifera Haliday in Walker, 1851; Clanoneurum cimiciforme (Haliday, 1855); Clinocera fontinalis (Haliday, 1833); Clinocera stagnalis (Haliday, 1833); Clunio marinus Haliday, 1855; Coelopa pilipes Haliday, 1838; Colobostema infumatum (Haliday, 1833); Conicera similis (Haliday, 1833); Conisternum decipiens (Haliday in Curtis, 1832); Coproica lugubris (Haliday, 1836); Coproica vagans (Haliday, 1833); *Diamesa tonsa* (Haliday *in* Walker, 1856); *Dicraeus raptus* (Haliday, 1838); Dicranota pavida (Haliday, 1833); Docosia gilvipes (Haliday in Walker, 1856); Dolichocephala guttata (Haliday, 1833); Dolichopus clavipes Haliday, 1832; Dolichopus diadema Haliday, 1832; Dolichopus festivus Haliday, 1832; Dolichopus phaeopus Haliday in Walker, 1851; Dolichopus rupestris Haliday, 1833; Dolichopus sabinus Haliday, 1838; Dolichopus signifer Haliday, 1838; Dolichopus trivialis Haliday, 1832; Drosophila cameraria Haliday, 1833; Elachisoma aterrimum (Haliday, 1833); Euthyneura myricae Haliday in Walker, 1851; Eutropha fulvifrons (Haliday, 1833); Fannia mollissima (Haliday in Westwood, 1840); Fannia monilis (Haliday, 1838); Fucellia maritima (Haliday, 1838); Geranomyia unicolor Haliday, 1833; Glenanthe ripicola (Haliday, 1839); Gonioneura spinipennis (Haliday, 1836); Heleodromia immaculata Haliday, 1833; Hyadina scutellata (Haliday, 1839); Hydrellia cardamines Haliday, 1839; Hydrellia cochleariae Haliday, 1839; Hydrellia porphyrops Haliday, 1839; Hydrellia ranunculi Haliday, 1839; Hydrellia tarsata Haliday, 1839; Hydrellia thoracica Haliday, 1839; Ilythea spilota (Haliday in Curtis, 1832); Kowarzia bipunctata (Haliday, 1833); Lamproscatella sibilans (Haliday, 1833); Machaerium maritimae Haliday, 1832; Malacomyia sciomyzina (Haliday, 1833); Melanum laterale (Haliday, 1833); Metopina galeata (Haliday, 1833); Metopomyza flavonotata (Haliday, 1833); Minilimosina fungicola (Haliday, 1836); Muscidideicus praetextatus (Haliday, 1855); Neoempheria pictipennis (Haliday,

1833); Neoleucopis obscura Haliday, 1833; Notiphila uliginosa Haliday, 1839; Ochlerotatus detritus (Haliday, 1833); Opomyza punctata Haliday, 1833; Palpomyia distincta (Haliday, 1833); Paradelphomyia senilis (Haliday, 1833); Paramormia ustulata (Haliday in Walker, 1856); Parydra fossarum (Haliday, 1833); Parydra hecate (Haliday, 1833); Pelomyiella cinerella (Haliday, 1837); Peripsychoda auriculata (Haliday in Curtis, 1839); Philygria interrupta (Haliday, 1833); *Pseudocollinella humida* (Haliday, 1836); *Psilopa pulicaria* (Haliday, 1839); Pullimosina heteroneura (Haliday, 1836); Rachispoda fuscipennis (Haliday, 1833); Scatella lutosa (Haliday, 1833); Scathophaga calida Haliday in Curtis, 1832; Scatophila despecta (Haliday, 1839); Schoenophilus versutus (Haliday in Walker, 1851); Sepsis duplicata Haliday, 1838; Setacera micans (Haliday, 1833); Sphaerocera monilis Haliday, 1836; Stilobezzia gracilis (Haliday, 1833); Stilpon lunatus (Haliday in Walker, 1851); Stiphrosoma cingulatum (Haliday, 1855); Stiphrosoma sabulosum (Haliday, 1837); Sycorax silacea Haliday in Curtis, 1839; Sympycnus cirripes (Haliday in Walker, 1851); Syntormon monile (Haliday in Walker, 1851); Tachydromia umbrarum Haliday, 1833; Tachytrechus consobrinus (Haliday in Walker, 1851); Tethina illota Haliday, 1838; Themira minor (Haliday, 1833); Themira superba (Haliday, 1833); Thinophilus ruficornis (Haliday, 1838); Thoracochaeta zosterae (Haliday, 1833); Trachyopella leucoptera (Haliday, 1836); Trachyopella melania (Haliday, 1836); Threticus lucifugus (Haliday in Walker, 1856); Trichina elongata Haliday, 1833; Trichomyia urbica Haliday in Curtis, 1839; Ula mollissima Haliday, 1833; Xanthochlorus ornatus (Haliday, 1832).

## HEMIPTERA

Atheroides hirtellus Haliday, 1838; Atheroides serrulatus Haliday, 1838; Kaltenbachiella pallida (Haliday, 1838); Siphoninus phillyreae (Haliday, 1835).

## HYMENOPTERA

Acanopsilus heterocerus (Haliday, 1857); Acrodactyla degener (Haliday, 1839); Adelius germanus Haliday, 1834; Adelius subfasciatus Haliday, 1833; Adelurola florimela (Haliday, 1838); Aleiodes nobilis (Haliday, 1834); Alloea contracta Haliday, 1838; Allurus lituratus

(Haliday, 1835); Allurus muricatus (Haliday, 1833); Alysia atra Haliday, 1838; Alysia fuscipennis Haliday, 1838; Alysia lucicola Haliday, 1838; Alysia sophia Haliday, 1838; Amblyaspis roboris (Haliday, 1835); Amblyaspis scelionoides (Haliday, 1835); Amyras clandestina (Haliday, 1839); Anaphes fuscipennis Haliday, 1833; Anteon fulviventre (Haliday, 1828); Anteon infectum (Haliday, 1837); Apanteles contaminatus (Haliday, 1834); Apanteles infimus (Haliday, 1834); Apanteles sodalis (Haliday, 1834); Apanteles xanthostigma (Haliday, 1834); Aphidius avenae Haliday, 1834; Aphidius ervi Haliday, 1834; Aphidius matricariae Haliday, 1834; Aphidius rosae Haliday, 1834; Apodesmia aemula (Haliday, 1836); Aristelix phoenicura (Haliday, 1839); Aspilota fuscicornis (Haliday, 1838); Atormus victus (Haliday, 1836); Atractodes albovinctus Haliday, 1839; Atractodes arator Haliday, 1839; Atractodes citator Haliday, 1839; Atractodes croceicornis Haliday, 1839; Atractodes cultellator Haliday, 1839; Atractodes exilis Haliday, 1839; Atractodes fumatus Haliday, 1839; Atractodes piceicornis Haliday, 1839; Baeus seminulum Haliday, 1833; Biosteres haemorrhoeus (Haliday, 1837); Biosteres placidus Haliday, 1837; Biosteres rusticus (Haliday, 1837); Biosteres sylvaticus (Haliday, 1837); Biosteres wesmaelii (Haliday, 1837); Blacus ambulans Haliday, 1835; Blacus hastatus Haliday, 1835; Blacus paganus Haliday, 1835; Blacus pallipes Haliday, 1835; Blacus tripudians Haliday, 1835; Bracon delibator Haliday, 1833; Centistes cuspidatus (Haliday, 1833); Centistes edentatus (Haliday, 1835); Chaenusa lymphata (Haliday, 1839); Chaenusa naiadum (Haliday, 1839); Chaenusa nereidum (Haliday, 1839); Charmon cruentatus Haliday, 1833; Chilotrichia blanda (Haliday, 1837); Chorebus albipes (Haliday, 1839); Chorebus cinctus (Haliday, 1839); Chorebus foveolus (Haliday, 1839); Chorebus lateralis (Haliday, 1839); Chorebus leptogaster (Haliday, 1839); Chorebus posticus (Haliday, 1839); Chorebus pulverosus (Haliday, 1839); Chorebus talaris (Haliday, 1839); Chorebus uliginosus (Haliday, 1839); Chorinaeus talpa (Haliday, 1839); Chremylus elaphus Haliday, 1833; Clinocentrus cunctator (Haliday, 1836); Clinocentrus excubitor (Haliday, 1836); Clinocentrus umbratilis Haliday, 1833; Clinocentrus vestigator (Haliday, 1836); Coelinidea podagrica (Haliday, 1839); Colastes braconius Haliday, 1833; Cotesia praepotens (Haliday, 1834); Cotesia ruficrus (Haliday, 1834); Cotesia vestalis (Haliday, 1834); Cratospila circe (Haliday,

1838); Cryptoserphus aculeator (Haliday, 1839); Ctenochira haemosterna (Haliday, 1839); Dacnusa abdita (Haliday, 1839); Dacnusa adducta (Haliday, 1839); Dacnusa lugens (Haliday, 1839); Dacnusa macrospila (Haliday, 1839); Dacnusa stramineipes (Haliday, 1839); Dacnusa temula (Haliday, 1839); Dapsilarthra sylvia (Haliday, 1839); Diachasma fulgidum (Haliday, 1837); Diaeretellus ephippium (Haliday, 1834); Dicladocerus eurvalus (Haliday, 1844); Dinotrema concinnum (Haliday, 1838); Dinotrema nervosum (Haliday, 1838); Dinotrema speculum (Haliday, 1838); Diolcogaster flavipes (Haliday, 1834); Diospilus oleraceus Haliday, 1833; Disogmus areolator (Haliday, 1839); Dolichogenidea annularis (Haliday, 1834); Dolichogenidea candidata (Haliday, 1834); Dolichogenidea decora (Haliday, 1834); Dolichogenidea dilecta (Haliday, 1834); Dolichogenidea exilis (Haliday, 1834); Dolichogenidea hilaris (Haliday, 1834); Dolopsidea indagator (Haliday, 1836); Entomacis perplexa (Haliday, 1857); Entomacis platyptera (Haliday, 1857); Ephedrus lacertosus (Haliday, 1833); Eridolius aurifluus (Haliday, 1839); Eridolius curtisii (Haliday, 1839); Eubazus flavipes (Haliday, 1835); Eubazus tibialis (Haliday, 1835); Euceros serricornis (Haliday, 1839); Eurytenes caelatus (Haliday, 1837); Exallonyx brevicornis (Haliday, 1839); Exochus lictor Haliday, 1839; Exotela gilvipes (Haliday, 1839); Foersteria puber (Haliday, 1835); Glyptapanteles callidus (Haliday, 1834); Glyptapanteles fulvipes (Haliday, 1834); Glyptapanteles lateralis (Haliday, 1834); Gonatocerus litoralis (Haliday, 1833); Gonatopus bicolor (Haliday, 1828); Gyron misellum Haliday, 1833; Helictes varius (Haliday, 1839); Heterocola linguaria (Haliday, 1839); Heterogamus dispar (Haliday, 1833); Hygroplitis russata (Haliday, 1834); Idiasta maritima (Haliday, 1838); Idiotypa maritima (Haliday, 1833); Iphitrachelus lar Haliday, 1835; Ismarus dorsiger (Haliday, 1831); Labolips innupta Haliday, 1857; Laotris striatula (Haliday, 1839); Leiophron apicalis Haliday, 1833; Lysephedrus validus (Haliday, 1833); Macroglenes chalybeus (Haliday, 1833); Macroglenes eximius (Haliday, 1833); Macroglenes gramineus (Haliday, 1833); Macroglenes microcerus Haliday, 1844; Macroglenes varicornis (Haliday, 1833); Megaetaira madida (Haliday, 1839); Mesochorus arenarius (Haliday, 1839); Mesoleptus incessor (Haliday, 1839); Metaclisis areolatus (Haliday, 1835); Meteorus colon (Haliday, 1835); Meteorus filator (Haliday, 1835); Meteorus jaculator

(Haliday, 1835); Meteorus micropterus (Haliday, 1835); Meteorus vexator (Haliday, 1835); Microgaster meridiana (Haliday, 1834); Microgaster messoria Haliday, 1834; Microplitis mediator (Haliday, 1834); Microplitis spectabilis (Haliday, 1834); Mirax rufilabris Haliday, 1833; Misaphidus brevicornis (Haliday, 1833); Misaphidus centaureae (Haliday, 1833); Misaphidus letifer (Haliday, 1833); Monelata cincta (Haliday, 1857); Omphale salicis (Haliday, 1833); Ontsira imperator (Haliday, 1836); Ooctonus hemipterus Haliday, 1833; Ooctonus insignis Haliday, 1833; Ooctonus vulgatus Haliday, 1833; Opazon parvulum (Haliday, 1857); Opius lugens Haliday, 1837; Opius pendulus Haliday, 1837; Orthostigma maculipes (Haliday, 1838); Oxylabis armata (Haliday, 1831); Panerema fulvicornis (Haliday, 1838); Paracodrus apterogynus (Haliday, 1839); Parthenocodrus elongatus (Haliday, 1839); Pentapleura angustula (Haliday, 1838); Pentapleura fuliginosa (Haliday, 1838); Perilitus brevicollis Haliday, 1835; Perilitus cerealium Haliday, 1835; Periope auscultator Haliday, 1839; Phaedrotoma aethiops (Haliday, 1837); Phaedrotoma caesa (Haliday, 1837); Phaedrotoma pacta (Haliday, 1837); Phaedrotoma tacita (Haliday, 1836); Phaneroserphus calcar (Haliday, 1839); Phaenoserphus fuscipes (Haliday, 1839); Phaenocarpa conspurcator (Haliday, 1838); Phaenocarpa eugenia (Haliday, 1838); Phaenocarpa eunice (Haliday, 1838); Phaenocarpa flavipes (Haliday, 1838); Phaenocarpa galatea (Haliday, 1838); Phaenocarpa livida (Haliday, 1838); Phaenocarpa maria (Haliday, 1838); Phaenocarpa nina (Haliday, 1838); Phaenocarpa picinervis (Haliday, 1838); Phaenocarpa pullata (Haliday, 1838); Phaenoserphus viator (Haliday, 1839); Platygaster elongata Haliday, 1830; Platygaster laricis Haliday, 1835; Polynema atratum Haliday, 1833; Praon abjectum (Haliday, 1833); Praon dorsale (Haliday, 1833); Praon volucre (Haliday, 1833); Proclitus comes (Haliday, 1839); Proclitus paganus (Haliday, 1839); Proclitus praetor (Haliday, 1839); Proclitus socius (Haliday, 1839); Protapanteles immunis (Haliday, 1834); Protapanteles popularis (Haliday, 1834); Rasivalva calceata (Haliday, 1834); Rhysipolis meditator (Haliday, 1836); Rhyssalus clavator Haliday, 1833; Shawiana catenator (Haliday, 1836); Stenomacrus laricis (Haliday, 1839); Syncrasis fucicola (Haliday, 1838); Synelix semirugosa (Haliday, 1839); Syntretus idalius (Haliday, 1833); Tanycarpa rufinotata (Haliday, 1838); Telenomus brachialis Haliday, 1833; Telenomus heteropterus Haliday, 1833; Telenomus othus Haliday, 1833; Thoron metallicus Haliday, 1833; Toxares deltiger (Haliday, 1833); Trachionus ringens (Haliday, 1839); Trachyusa aurora (Haliday, 1838); Tretoserphus laricis (Haliday, 1839); Trioxys auctus (Haliday, 1833); Xenarcha lustrator (Haliday, 1836); Zele caligatus (Haliday, 1835).

## THYSANOPTERA

Aptinothrips rufus Haliday, 1836; Baliothrips dispar (Haliday, 1836); Belothrips acuminatus Haliday, 1836; Ceratothrips ericae (Haliday, 1836); Chirothrips manicatus Haliday, 1836; Haplothrips statices statices (Haliday, 1836); Hoplothrips pedicularius (Haliday, 1836); Limothrips cerealium Haliday, 1836; Limothrips denticornis Haliday, 1836; Odontothrips loti (Haliday, 1852); Odontothrips phaleratus (Haliday, 1836); Odontothrips ulicis (Haliday, 1836); Oxythrips ulmifoliorum (Haliday, 1836); Sericothrips staphylinus Haliday, 1836; Thrips atratus Haliday, 1836; Thrips corymbiferarum Haliday, 1836; Thrips discolor Haliday, 1836; Thrips fuscipennis Haliday, 1836; Thrips vulgatissimus Haliday, 1836.

# Orders and families erected by Haliday

Aphidiidae Haliday, 1833 (Hymenoptera); Bethylidae Haliday, 1839 (Hymenoptera);
Ceraphronidae Haliday, 1833 (Hymenoptera); Diapriidae Haliday, 1833 (Hymenoptera);
Dryinidae Haliday, 1833 (Hymenoptera); Mymaridae Haliday, 1833 (Hymenoptera);
Pelecinidae Haliday, 1840 (Hymenoptera); Thysanoptera Haliday, 1836; Scelionidae Haliday, 1839 (Hymenoptera).

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#### Examples of valid insect species named after Haliday

Antlemon (Antlemon) halidayi (Loew, 1871) (Diptera: Keroplatidae); Apanteles halidayi
Marshall, 1872 (Hymenoptera: Braconidae); Campsicnemus halidayi Dyte, 1975 (Diptera: Dolichopodidae); Dendrocerus halidayi (Curtis, 1829) (Hymenoptera: Megaspilidae); Euthyneura halidayi Collin, 1926 (Diptera: Hybotidae); Gigantothrips halidayi (Newman, 1856) (Thysanoptera: Phlaeothripidae); Ismarus halidayi Foerster, 1850 (Hymenoptera: Diapriidae); Lelaps halidayi Ashmead, 1804 (Hymenoptera: Pteromalidae); Lissonota (Lissonota) halidayi Holmgren, 1860 (Hymenoptera: Ichneumonidae); Oxythrips halidayi
Bagnall, 1924 (Thysanoptera: Thripidae); Polynema halidayi Debauche, 1948 (Hymenoptera: Mymaridae); Psyttalia halidayi Wharton, 2009 (Hymenoptera: Braconidae); Sapromyza halidayi Shatalkin, 2000 (Diptera: Lauxaniidae); Syncrasis halidayi (Foerster, 1862) (Hymenoptera: Braconidae); Tachydromia halidayi (Collin, 1926) (Diptera: Hybotidae); Tetrastichus halidayi (Graham, 1961) (Hymenoptera: Eulophidae); Triaspis halidayi Martin, 1956 (Hymenoptera: Braconidae); Heterocoelia halidaii (Westwood, 1874) (Hymenoptera: Bethylidae); Micridium halidaii (Matthews, 1868) (Coleoptera: Ptiliidae).

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FIGURE 1. Plate 596 from Curtis (1824-1840) showing the Belfast Rose, published 1836.



FIGURE 2. Haliday specimens in a store-box in the National Museum of Ireland.

![](_page_44_Picture_1.jpeg)

FIGURE 3. Detail from a Haliday store-box showing different shapes of card mounts.

![](_page_45_Picture_1.jpeg)

FIGURE 4. Examples of card from which Haliday specimens have been cut.

**FIGURE 5.** Examples of figures by Haliday. These are taken from Plate V *in* Walker, F. (1852) *List of the specimens of homopterous insects in the collection of the British Museum*. Part IV and show the larvae of *Thrips ulmi*. 1 = the young larva; 1a = its antenna; 1b = the end of its abdomen; 2 = the larva; 2a = its head; 2b = its mouth. Certain lines have been enhanced to faciltate reproduction of the figures.

![](_page_46_Figure_2.jpeg)

![](_page_47_Figure_1.jpeg)

**FIGURE 6.** Examples of figures by Haliday. Detail from Plate VI *in* Walker, F. (1852) *List of the specimens of homopterous insects in the collection of the British Museum*. Part IV.

**FIGURE 7.** Examples of figures by Haliday. Plate VII *in* Walker, F. (1852) *List of the specimens of homopterous insects in the collection of the British Museum.* Part IV showing drawings of dissections.

![](_page_48_Figure_2.jpeg)