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Dramatis Personae: An Anecdotal Account of Some Historical Figures

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Australian insect systematics began with the publication in 1775 of descriptions of insects collected in 1770. This was the result of the right people coming together in the right places at the right times, and the man largely responsible for that coming together was Carolus Linnaeus (1707–1778), who became Professor of Medicine and Botany at the University of Uppsala in 1741 (Blunt 1971). He was a superb teacher and a beloved friend to his students. He gave them a broad grounding in mineralogy, botany, and zoology, with plenty of field work, and instilled in them habits of order and accuracy.

Linnaeus established the binomial system of naming species which has been used ever since for plants and animals. The personal name that follows the name of the species or genus is that of the original describer, the author of the name. I want to introduce to you a few of the real people behind the authors’ names of Australian insects, and some of the collectors who provided specimens for description.

Although our modern zoological nomenclature dates from 1758 when the tenth edition of Linnaeus’ book Systema Naturae was published, the first edition was issued in 1735.

During the eighteenth century, the wealthy in Holland, France, and England were tremendously interested in growing new plants brought back from their countries’ colonies and voyages of exploration; some also owned private zoos and museums.
Linnaeus visited England in 1736, where he met Peter Collinson, a Quaker cloth-merchant who was a keen naturalist and had introduced many North American plants. Collinson did all he could to publicize the *Systema Naturae*. Twenty years later he asked Linnaeus to send one of his students to England to compile a catalogue of Collinson’s garden according to the Linnean system of plant classification. Linnaeus sent his favourite pupil and prospective son-in-law, Daniel Carl Solander (1733–1782) (Blunt 1971; Rauschenberg 1968), who arrived in London in June 1760.

Solander grew up in Pitea in the north of Swedish Lapland, where his father was rector and rural dean. In 1750, he entered the University of Uppsala to study law, but when he took Linnaeus’ course in Natural History, he became fascinated and switched to science subjects aiming for a doctorate in medicine. He helped Linnaeus classify the Swedish royal collections, which included ‘an unbelievable quantity of pinned insects’. But once he reached England he never returned, despite Linnaeus’ desire to nominate him as his successor, and he never presented a doctoral thesis, although after 1761 he was known as Dr Solander. The English thought he had a Doctor of Medicine degree from Uppsala and the Swedes thought he had one from Oxford. He received an Honorary Doctor of Civil Laws degree from Oxford in 1771, along with Joseph Banks.

Solander was short and stout, with a fair complexion and a jovial face, and wore bright waistcoats. He had agreeable, unassuming manners, was an interesting and amusing conversationalist and a gifted linguist, and he mixed easily. James Boswell said of him ‘Throw him where you will, he swims’. He was quickly accepted into London’s social and intellectual circles.

James Smith, first President of the Linnean Society, looking back in 1821, said of him ‘His instruction made everybody correct and systematic, and introduced Linnean learning and precision’ and his ‘talents and liberality proved the example and the spur of all that has been done for natural science, during half a century, in Britain’.

Starting in 1763, Solander spent five years cataloguing the natural history collections of the British Museum. He became Assistant Keeper in 1765 and Keeper in 1773. Concurrently he helped classify some important private collections. He was elected
a Fellow of the Royal Society in 1764. That was about the time he met Joseph Banks (1743–1820) (Beaglehole 1962).

Banks, as a boy at Eton, became interested in the local wild flowers and insects, and began reading botanical books. At Oxford, finding that the Professor of Botany did not lecture, he obtained permission to engage a Cambridge botanist as lecturer. When he inherited large estates in Lincolnshire, he decided to devote his leisure to natural history. He was elected to the Royal Society in 1766. That same year, Banks travelled in HMS Niger to Newfoundland and Labrador, where he collected rocks, plants, and animals. Solander gave him botanical advice before he left and helped him catalogue the plants on his return.

SIR JOSEPH BANKS
1743–1820

Banks was planning to become a pupil of Linnaeus when the Admiralty agreed to the Royal Society’s request for a ship to take scientists to Tahiti to observe the transit of Venus in 1769. He
offered to finance a team of naturalists, if allowed to join the ship, and the offer was accepted. Banks related that he and Solander were at a dinner party a few days later 'talking about how I had an unmatched opportunity to enrich science and to become famous, Solander all at once excitedly rose from his chair and asked me with intent eyes: would you like a fellow-traveller. I answered: Someone like you would give me untold pleasures and rewards. Then that is it, he said, I'll travel with you; and from that moment everything was settled and decided'. Banks was then aged 25 and Solander 35. The spring and summer of 1768 were spent in preparation for the voyage. When they returned in 1771, Solander became a member of Banks' household, as librarian and curator of his collections. This was in addition to his outside activities. He suffered a stroke on 8 May 1782, and died five days later.

At the end of 1767, another pupil of Linnaeus arrived in London, a young Dane, Johann Christian Fabricius (1745–1808) (Hope 1845; Tuxen 1973), the son of a government physician. As a boy, he collected plants and insects and tried classifying plants from Linnaeus' texts. He wrote that in 1762, 'My good father granted me the fervent desire of my heart, and sent me ... to Upsal. I remained there two years; this was the most important period of my life'. Fabricius concentrated on the study of insects, and by the time he left Uppsala he was planning a new classification of them based on the mouthparts, rather than on the wings which Linnaeus had used. The following year he went to Leipzig to study economics and from 1775 was Professor of Natural History, Economy, and Finance at Kiel. Fabricius quite early developed a pattern of spending winters in Denmark teaching and summers travelling all over Europe visiting and revisiting entomologists and collections. Thus he got to know the world insect fauna better than any of his contemporaries. He must have been an engaging personality, for he seems to have been welcomed everywhere. He did some collecting himself, but mainly built up his collection from specimens given in return for his identifications.

When Fabricius met Solander, they immediately established a bond of friendship. Solander introduced him to the London scientific clubs and his own circle of friends. Fabricius was given access to many collections, in which he determined and described the specimens and arranged the species. He spent most of 1768
in London. Banks and Solander were busy fitting out their quarters on the *Endeavour*. Fabricius wrote ‘As long as the ship remained in the Thames, we visited it frequently, to arrange all things for the best, and in the most convenient manner’. John Ellis, a botanist, reported ‘they have all sorts of machines for catching and preserving insects’.

![Johann Christian Fabricius](image)

**Johann Christian Fabricius**

1745–1808

Fabricius spent the summers of 1772–1775 in London, working on Banks’ and other collections, and in 1775 his *Systema Entomologiae* was published. This included descriptions of 212 species (in 10 present-day orders) from New Holland. These were insects that Banks and Solander had collected in 1770, along the east coast of Australia, from Botany Bay north, and this, then, was the beginning of Australian systematic entomology. I suggest that the enthusiast Fabricius, helping Banks and Solander prepare for the voyage, and eager to describe any insects they might bring back and thereby test his new classification, stimulated them to
a special effort, and that very likely it was Solander, the more experienced all-round naturalist, who did most of the insect collecting.

Banks was 'good-humoured ... liberal ... a tolerable botanist, and generally acquainted with natural history'. His forte was administration. King George III appointed him Director of The Royal Botanic Gardens, Kew in 1773 and his personal friendship with the king was a factor in his election as President of the Royal Society in 1778, for the previous president had aroused the king's displeasure. He held this office until his death in 1820. Through his influence in high places, his great wealth and his abiding interest, he became the first great patron of Australian natural history, and gave support to many collectors.

In 1790, Fabricius went to Paris to examine new collections and have a look at the revolution. Among the scientists he met were Claude Antoine Gaspar Riche (1762–1797) and Jacques-Julien Houtou de la Billardiére (1755–1834). Riche (Maiden 1910), who had abandoned his university studies because of ill-health, was mainly interested in insects and was a correspondent of Fabricius. La Billardiére (Maiden 1910; Musgrave 1932) who held a doctorate in medicine from Paris, was a distinguished botanist. In 1791, these two sailed as naturalists on the expedition led by Bruny d'Entrecasteaux in search of La Perouse. They collected in Tasmania and Western Australia. In December 1792, near Esperance, Riche was lost in the bush for 54 hours, surviving on fruits of a Leucopogon which La Billardiére collected and subsequently named Leucopogon Richei. The two ships reached Java in February 1794, but before this both commanders had died. The officers who took over were royalists and when they heard that a republic had been proclaimed in France, they handed their ships to the Dutch. La Billardiére, who was a republican, was imprisoned in Batavia for 18 months. The collections were confiscated and sent to England as a prize of war.

Riche died of consumption on his return to France. Banks arranged that the collections were returned intact to La Billardiére and did not even open the packages to look at them because, he said, he would have been afraid of stealing even one single botanical idea from a man who had collected them at the peril of his life. Fabricius described numerous Australian insects from these collections.
Australian cicindelid and carabid beetles were described by Count Pierre François Marie Auguste Dejean (1780–1845) (Howard 1930; Lindroth 1973), called 'the first great coleopterist' and said to have had the largest private insect collection of his time. He was one of Napoleon's generals and issued every soldier in his regiment with a vial of alcohol in which to collect beetles. At the battle of Alcanizas, Dejean was at the head of his troops and about to engage the enemy, when he saw on a flower a rare beetle that was not in his collection. He at once dismounted, captured it and pinned it inside his helmet which was lined with cork for this purpose, then remounted and gave the signal to charge. When he eventually won the battle, after a long, hard fight, his helmet had been horribly maltreated by a cannon ball, but the specimen was intact!

I will mention here two later European entomologists.

Wilhelm Ferdinand Erichson (1809–1849) (Fogg 1859; Musgrave 1932; Lindroth 1973), described as 'the real genius in staphylinid taxonomy', was a German doctor of medicine. In 1842 he published descriptions of 262 new insects from Tasmania. These were collected by Adolphus Schayer (Fogg 1859; Marks 1955), a Silesian sheep expert who was superintendent of the Vandiemensland Company's station at Woolnorth on the northwestern coast of Tasmania. Erichson was probably the first to discuss at length the zoogeography of Australian insects.

Auguste Henri Forel (1848–1931) (Musgrave 1932) was a very eminent psychiatrist in the early days of that science, and director of a large psychiatric hospital in Switzerland. About half the named species of Australian ants were described by Forel. He has achieved a distinction probably unequalled among entomologists, for he appears on the Swiss 1000 Franc banknote (equivalent to about $600). The ants on the obverse side of the note include at least one Australian species. Forel was a very advanced socialist, and his grandson in Geneva has engaged in a barrage of newspaper correspondence complaining that his socialist grandfather was featured on a banknote of denomination so high that few ordinary people would ever see it (R.W. Taylor, personal communication).

In England, contemporary with Erichson, but much longer lived was John Obadiah Westwood (1805–1893) (Howard 1930; Musgrave 1930; Lindroth 1973), a solicitor reputed to lack a sense of humour. His private means allowed him to devote himself to
entomology. His friend the Reverend Frederick William Hope (1797–1862) (Musgrave 1930, 1932) bought Westwood’s collection, and presented it to Oxford University together with his own very large collection in 1849. At the same time, he endowed the Hope Professorship of Invertebrate Zoology, with the stipulation that Westwood should be the first appointee, a position he held for the rest of his life.

Both Hope and Westwood published extensively on Australian insects, Hope on Coleoptera, Westwood on all the main orders. Westwood’s manuscripts were written on any available scraps of paper. He was an accomplished draughtsman and illustrated papers by other authors as well as his own. An example from an 1834 paper by Hope shows three beetles from New Holland (Hope 1834; Plate II, Figs 1, 3, 4) including two from Swan River collected by John Septimus Roe (1797–1878), surveyor general of Western Australia.

We come now to consider resident entomologists.

John White (1756?–1832) (Rienits 1967), Chief Surgeon of the First Fleet, was a keen naturalist who resided in Sydney from 1788 to 1794. He collected insects which he gave to John Francillon, a London doctor, who had a celebrated collection, almost half of which was purchased by Alexander Macleay in 1818. John White is well known for his illustrated book Journal of a voyage to New South Wales, published in London in 1790. In 1792, White had assigned to him as a servant Thomas Watling (1762–circa 1810), a newly arrived convict. Watling (Rienits 1967) was a well-educated Scottish artist transported for forgery. He made many drawings for White, and was given an unconditional pardon in 1797, later returning to Scotland.

The ‘Watling Collection’ in the Zoological Library of the British Museum (Natural History) comprises 512 drawings by various artists, of which 123 are signed by Watling. These were apparently made around Port Jackson between 1788 and 1794 and many bear annotations by John White. It is possible that some drawings are by White himself and they may have been assembled by him for a projected second book which did not eventuate. This collection includes some of the oldest known illustrations of Australian insects in their natural habitat.

Another artist-naturalist arrived in Sydney in 1800. This was John William Lewin (1770–1819) (Mander-Jones 1967), an
engaging character, who had helped his father compile and illustrate books on *The Birds of Great Britain*. Patrons in England, including Alexander Macleay, helped to support him in return for natural history specimens. His first book was published in London in 1805: *Prodromus Entomology. Natural History of Lepidopterous Insects of New South Wales. Collected, Engraved and Faithfully painted from Nature*, by John William Lewin, A.L.S. of Parramatta, New South Wales. The 18 plates were engraved and coloured by Lewin in Parramatta, the copper plates and paper having been provided by the English entomologist, Dru Drury; they were the earliest engravings produced in Australia. Lewin sent them to his brother Thomas in London together with notes for the text. Thomas went to the Linnean Society for advice. The President, James Smith, identified the food plants as far as possible, and the Secretary, Alexander Macleay, drew up scientific descriptions of the insects.

This brings me to a family that, during the nineteenth century, collectively played in Australia a similar role to that of Banks in England during our first 50 years: Alexander Macleay and his son William Sharp Macleay, and nephew William John Macleay.

Alexander Macleay (1767–1848) (Fletcher 1921) was a highlander from Caithness, whose father was provost of Wick. He joined the British civil service and by 1806 was Secretary of the Transport Board. When the Board was abolished in 1815 he retired on a pension, but in 1825 was persuaded to accept appointment as Colonial Secretary of New South Wales, a post he held until 1836. His friend Robert Brown (1773–1858) the botanist (who was also an insect collector) described him as a general naturalist, a profound entomologist, and a practical botanist. Alexander became a Fellow of the Linnean Society in 1794 and was its Secretary for 27 years, from 1798. He was elected to the Royal Society in 1809. He never published on entomology, but by 1825 he had ‘The finest and most extensive collection then existing in the possession of a private individual’. This was built up by his own and his son’s collecting, by exchange, and by purchase from at least six famous collections.

After he reached Sydney with his family and collection in 1826, the little spare time he had was spent in developing what was, in effect, a botanic garden on the 54 acres he was granted at Elizabeth Bay. However, he sent natural history specimens, including insects,
to the Linnean Society and was instrumental in founding the Australian Museum. His house at Elizabeth Bay was completed in 1837.

William Sharp Macleay (1792–1865) (Fletcher 1921), who inherited the house and collection, was educated at Westminster and Cambridge and was attached to the British Embassy in Paris for about 10 years where he became a friend of some of the leading French zoologists. He served in Cuba from 1825 to 1836 on the Mixed British and Spanish Court of Commission for the Abolition of the Slave Trade. Retiring with a pension, he came to Australia in 1839 and lived for the rest of his life at Elizabeth Bay House. W.S. Macleay was a zoologist with an international reputation and brought out his own collection. He had described many insects, including those collected by Captain Phillip Parker King (1791–1856) on his surveys of the Australian coast, but he was more interested in the philosophical aspects of animal classification and had proposed a circular and quinary system. In Australia, he published nothing further on entomology, but continued to
build up the collection and the garden. His home was the mecca for local and visiting naturalists, including Thomas Henry Huxley. Robert Lowe described him thus: 'He was an excellent classical scholar, he knew more of modern history and biography than anyone with whom I was ever acquainted, and in addition to all this he was a profoundly scientific man, thoroughly conversant with Zoology and entomology. An excellent companion with a store of caustic wit'.
1864, returning from Wagga in his buggy, he came on the bushrangers Gilbert, Hall, and Dunn 'sticking up' several teams and travellers. With rifle in hand he raised the siege. This earned him a gold medal for gallant and faithful services.

From 1857, William lived permanently in Sydney. He re-established a close association with W.S. Macleay and began to build up his own collection of Australian insects. In 1862, he and his friends founded the Entomological Society of New South Wales and in 1863 he published in its Transactions the first of a series of taxonomic papers, mainly on beetles.

It was at this time that he met George Masters (1837–1912) (Froggatt 1913; Fletcher 1929; Carter 1933). Masters, who was born in Kent, came to Australia about 1856 and worked as a gardener for Dr Godfrey Howitt (1800–1873) of Melbourne, a keen botanist and entomologist, who possibly instructed him in
entomology. Coming to Sydney about 1859, his interest in insects resulted in an introduction to William Macleay, who sent him on a collecting trip to Port Denison. In 1864, Masters was appointed Assistant Curator at the Australian Museum, on condition that he sold his private collection and made no new one, an agreement he ignored. He was a fearless bushman and made large zoological collections in many parts of Australia. He published a catalogue of Australian Coleoptera, but most of his great knowledge of habits and life histories was never recorded.

WALTER WILSON FROGGATT
1858–1937

William Macleay was a great benefactor of natural science in a most unostentatious way. He inherited Alexander and W.S. Macleay’s collections with the proviso (according to Froggatt) that they were ultimately to be given either to the University of Sydney or to an English university. In 1874, Sydney University accepted William’s offer to bequeath to it the Macleay collection and his
library. Thereupon he resolved to devote himself entirely to natural history and improvement of the museum. He appointed George Masters Curator and made provision for him to continue in that post, which he did until his death in 1912. They collected and worked on the collection assiduously in the years that followed.

When, about 1886, a young English entomologist arrived seeking a job, Macleay employed him to study Australian Diptera, which he felt had been unduly neglected. This was Frederick Arthur Askew Skuse (1864–1896) (Alexander 1932), son of a Church of England parson, well educated, handsome, and charming. He worked hard, went collecting with W.W. Froggatt, and between 1888 and 1890 published a magnificent series of papers. Then things went wrong. Macleay was suddenly completely prostrated by illness and Skuse’s financial support was withdrawn. He was appointed Scientific Assistant at the Australian Museum in 1890. There he got into bad company and personally ‘went to the dogs’, reputedly the result of consuming the museum’s alcohol.

Walter Wilson Froggatt (1858–1937) (Musgrave 1932; Froggatt 1934; W[alkom] 1942; Perkins 1964), another of Macleay’s collectors, was born in Victoria and grew up in Bendigo. His father was an architect from Yorkshire who became interested in mining. His maternal grandfather was an adventurous Italian nobleman. Walter was a delicate child and was encouraged to develop an interest in natural history. He received his first insect collection box on his sixth birthday. As a young man, he spent a period wandering to new mineral fields in northern Queensland. He sent plant specimens to Baron Ferdinand von Mueller on whose recommendation he was appointed assistant zoologist to the Royal Geographical Society of New South Wales’ New Guinea expedition in 1885. On his return, he collected for William Macleay in north Queensland and for almost a year in north-western Western Australia. He went to England in 1888 and visited many museums. In 1889, he was appointed assistant and collector at the Sydney Technological Museum where he began his important studies of termites. He was Government Entomologist of New South Wales from 1896 to 1923.

Froggatt was a very observant all-round naturalist and a tough bushman. In Western Australia, he travelled with a horse and spring cart and slept in a combined tent cum mosquito net. On
one occasion he suffered with sun fever and lay alone in the tent for eight days. He was a prolific writer and in 1932 Musgrave reported 'He has produced more papers on Australian insects than any other worker'.

Athol Perkins, who joined Foggatt's Department in 1921, recalled that he was a most energetic worker and whenever a report came in from the country about the exceptional occurrence of some insect pest, it was Foggatt himself who went out to make the examination.

George Masters' kindness and encouragement, as well as his yarns of the bush, were appreciated by Herbert James Carter (1858–1940) (Carter 1933; W[alcon] 1942; Mackerras 1949) and his sons. Carter, an English school teacher, came to Australia in 1881 and taught at Sydney Grammar School till 1901. He was Principal of Ascham Girls School 1902–1914, and later an Editor of *The Australian Encyclopaedia*. His interest in entomology was kindled by his schoolboy sons and their friends. The first of his

**HERBERT JAMES CARTER**
1858–1940

**ARTHUR MILLS LEA**
1868–1932
65 papers was published when he was 47. Ian Mackerras described him thus: 'Tall, grey, bearded, he was an indefatigable collector with umbrella and net, and a sheer delight to all who accompanied him'. He frequently used these collecting methods on horseback in Kuringai Chase. He wrote: 'Gradually my horses became adapted to the collecting methods, learning to force their way through the scrub, and stand at ease when I reached over the higher branches — even after some time learned to stop at a flowering bush — like some bushmen's horses do at the pubs'.

One of his great friends, and likewise a prolific describer of beetles, was Arthur Mills Lea (1868–1932) (Musgrave 1932) who was born in Sydney and was Government Entomologist in Western Australia and then Tasmania before becoming entomologist at the South Australian Museum 1911–32. John Evans told me that Lea on one occasion travelled by train to a station in the Tasmanian midlands. The man appointed to meet him had not arrived, so Lea took his umbrella and proceeded to beat the bushes nearby. The station master saw him, coaxed him into the waiting room, locked the door, and rang the police.

**ROBIN JOHN TILLYARD**
1881–1937

**ANDRÉ LEON TONNOIR**
1885–1940

In conclusion, I must say that preparing this paper has been an exasperating experience — there were too many people jostling to get in. Many taxonomists who were active in my student days

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are historical characters to most present-day entomologists and deserved inclusion — most notably Robin John Tillyard (1881–1937) who, in his contemporary, G.H. Hardy’s view (Hardy 1965), by his systematic and phylogenetic studies of Odonata and other orders, without doubt ‘aroused in Australia a consciousness of need of each individual to expand his understanding on insects’. And his colleague André Leon Tonnoir (1885–1940), the Belgian dipterist who came from the Cawthron Institute in 1929 to be Senior Ecologist and Curator at the Division of Economic Entomology, Canberra. If G.A. Waterhouse was the midwife who delivered the infant ANIC it was Tonnoir who reared a lusty youngster. Tonnoir wrote to A.A. Girault in 1936 ‘We are gradually building up here a fine national entomological collection which in a few decades will be no doubt the most important in Australia.’

Today we celebrate the fulfilment of his prophecy.

REFERENCES


