

Library copy

1920 244

*From the Proceedings of the Linnean Society of New South Wales,
Vol. liv, Part 3, 1929.*



THE SOCIETY'S HERITAGE FROM THE MACLEAYS. PART ii.

By the late J. J. Fletcher.

[Issued 15th July, 1929.]

THE SOCIETY'S HERITAGE FROM THE MACLEAYS. PART II.

By the late J. J. FLETCHER.*

SIR WILLIAM (JOHN) MACLEAY, M.L.C., F.L.S.

The record of Sir William Macleay's life-history may be divided into four chapters: (1) 1820-1839—the prelude to his Australian career, including an eventful voyage from London to Sydney; (2) 1839-1855—the transition from “new chum” to practical pioneer squatter, managing the station in which he was interested; (3) 1856-1873—election to Parliament, permanent residence in Sydney, marriage, resumption of intercourse with his cousin, William Sharp Macleay, reawakening of his interest in Natural History, becomes an entomologist with his own collection and scientific library, succeeds to the joint collections of Alexander and William Sharp Macleay; (4) 1874-1891—retires from Parliament in order to devote himself to the study of Natural History and the improvement of his museum, henceforth a working zoologist, promoter and benefactor of Science in New South Wales.

He was temperamentally disinclined to talk about himself or his doings and I think that his habitual reticence in this respect was emphasized by his lonely life as a squatter on the Lower Murrumbidgee, remote, not merely from Sydney, but from the nearest country town.

The original published sources of information of a biographical character concerning William Macleay are:—

(1). The short notice, less than half a page, merely a brief statement of elemental facts with but few details, given in J. Henniker Heaton's “Australian Dictionary of Dates and Men of the Time” (p. 127), published in 1879.

* *Note by the Publication Committee.*—The preparation of an account of the Society's Heritage from the Macleays was undertaken by the late J. J. Fletcher in connection with the celebration by the Society, in June, 1920, of the centenary of the birth of William Macleay. On that occasion Mr. Fletcher, as President of the Society, delivered an address, the first portion of which dealt with the part played by Alexander Macleay and his two sons, William Sharp and George, in the Macleayan succession and in the accumulation and development of the Macleay Collections. This portion was published in the PROCEEDINGS for 1920, pages 567-635. The second part of the address dealt with the life-history of William Macleay, but the preparation of this for publication was never completed by Mr. Fletcher. He had, however, accumulated a mass of interesting information, much of which had not been published, since he had had access to William Macleay's private journals and had conducted numerous inquiries concerning William Macleay subsequent to the publication of biographical notices.

After Mr. Fletcher's death this vast mass of material was very kindly placed at the disposal of the Society by Mrs. Fletcher. The Secretary, Dr. A. B. Walkom, has spontaneously undertaken the onerous task of selecting, ordering and preparing for publication the details of the life and work of William Macleay. Thus the results of Mr. Fletcher's industrious and loving researches have been made available for the PROCEEDINGS of the Society, which owes a great debt to Dr. Walkom for his laborious work in the preparation.

(2). A biographical sketch of "The Hon. William Macleay, M.L.C., President Linnaean Society", in the bound volume entitled "The Australian Portrait Gallery and Memoirs of Representative Colonial Men", published by the Southern Cross Publishing Company, 96 Pitt Street, Sydney. These Memoirs were apparently written by a capable journalist (perhaps more than one) whose name is not mentioned, possibly after interviews with the surviving subjects of the Memoirs. The date 1884 appears on the last page, but as the concluding portion of the volume is entitled "The History of the Soudan Expedition: An Historical Record of the Events relating to the Levy, Despatch and Return of the New South Wales Contingent raised for Service in Egypt, March-June, 1885", the date of issue must have been later than 1884.

(3). A brief biographical sketch, with a portrait, which appeared in the *Town and Country Journal* of June 8th, 1889, shortly after the public announcement that the honour of knighthood had been conferred on William Macleay.

(4). The Obituary Notice of the Hon. Sir William Macleay, M.L.C., F.L.S., which appeared in the *Sydney Morning Herald* of December 8th, 1891, the day after his death. This was written by a member of the staff of the *Sydney Morning Herald* after an interview with me. Apart from scientific details, this is the most important general biographical sketch available.

(5). An Obituary Notice of Sir William Macleay, M.L.C. in the *Illustrated Sydney News* of December 19th, 1891.

(6). From a scientific point of view, and for an account of the Macleay Museum after the Macleay Collections had been handed over to the University of Sydney, Professor Haswell's Presidential Address to the Society at the Annual Meeting on January 27th, 1892, is very important (PROCEEDINGS, 1892, pp. 2-10).

(7). The Introduction to the "Macleay Memorial Volume" published by the Society in 1893, written by me, at the request of the Council, is a very imperfect biographical record. But I am now able to supplement this in some important respects, from sources of information which were not then available.

(8). The Presidential Address delivered by Dr. T. Storie Dixson to this Society on 30th March, 1904 (see PROCEEDINGS, 1904, pp. 5-23).

Others, including the brief memorial notices in the *Proceedings of the Linnean Society of London*, in the *National Dictionary of Biography*, and Mennell's *Dictionary of Australian Biography* (1892), were only variants of the old theme. In their entirety these notices are a very incomplete record of William Macleay as a meritorious and enterprising Australian. The first three in the above list were published during his life-time. The brief particulars given in the first one, may, by request, have been communicated by himself. The second and third were written by journalists, without personal knowledge, except that chatty interviews may have been granted to one or perhaps both of them. The sixth and seventh were contributed by contemporaries, of a later generation, with some personal knowledge of the concluding chapter of William Macleay's life-history, but without adequate knowledge of the earlier chapters. What is obviously lacking is anything in the shape of a contribution from William Macleay himself or from a contemporary approximately of his own standing as a colonist. For this omission, unfavourable circumstances are responsible.

Two intimate friends, with literary qualifications and with personal knowledge covering a long period, who had known William Sharp Macleay and were familiar with Macleayan history, and who had been closely associated with William

Macleay (1820-91) and had shared his interests in different ways—The Right Honorable William Bede Dalley (1831-88; born in Sydney) and Professor William John Stephens (1829-90; resident in Sydney from 1856)—could have supplied just the kind of information that is lacking. But the careers of both of them, though both were some years younger, terminated shortly before his own. Tributes from both, uttered and recorded during their lifetime, are referred to later.

William Bede Dalley and William Macleay were Members of the First Legislative Assembly, 1856-57, when the latter was still a squatter, and, for some time afterwards, of successive Parliaments. From 1875 they were Members of the Legislative Council. In his hours of recreation, Mr. Dalley was an enthusiastic fisherman, and had an excellent sporting knowledge of the fishes of Port Jackson and the coastal waters. He took great interest in William Macleay's efforts to accumulate an ichthyological collection from 1874 onwards, was always on the look out for desirable rare or new species, and was the donor of many interesting specimens to the Macleayan Collection, as recorded in William Macleay's Journal. He was a member of the Royal Commission appointed on the 8th January, 1880, to inquire into and report upon the actual state and prospects of the Fisheries of New South Wales, of which William Macleay was President. He was an Original Member of the Linnean Society of New South Wales; and one of the speakers on the occasion of the dedication of the Linnean Hall at Elizabeth Bay to the Society on October 31st, 1885. He was also a Trustee of the Australian Museum.

Professor W. J. Stephens was in close touch with William Macleay in his scientific work, almost throughout his scientific life. They had co-operated in carrying on the Entomological Society of New South Wales, and especially, later on, the Linnean Society of New South Wales. He was also interested in William Macleay's efforts to develop the Macleay Collection into a general Collection, and, especially in the early stages of the work, lent a helping hand in sorting, bottling, and naming, as far as it was possible, the rich collections that were acquired in various ways. Like W. B. Dalley and William Macleay, he was a Trustee of the Australian Museum during a critical period of its history. No one, therefore, had a better knowledge of William Macleay as a scientific man, both in a private and in an official capacity, than W. J. Stephens.

It is so difficult for one of a later generation to write a worthy appreciation of William Macleay's important contribution to the advancement of Science in this State, because of our imperfect knowledge of the circumstances which inspired it, and led up to its consummation. He was a far-seeing man, of forceful character, of high ideals, doing what he voluntarily did as if from a sense of duty, modestly reticent about himself, and without any inclination to indulge in autobiography. We have no detailed records by himself of his early life, of his Australian experiences as a squatter during an eventful period, or as a Parliamentarian, nor of the awakening of his interest in Science. Particulars respecting the scope and aims of his activities during the first stage of his scientific career have to be gleaned from his printed contributions, or from those of his friends or correspondents. For the second stage only is there any personal record of his own, and this, though hitherto unpublished and important, is not quite as complete as could be wished.

But what can be learned from all available sources of information abundantly shows how earnestly intent he was upon making the most of his opportunities,

and on utilizing his resources wisely for desirable ends, such as initiating new and needed enterprises at favourable times. In trying to realize his aims, without saying so, he was undoubtedly influenced by the example of his distinguished relatives, desirous of upholding the family reputation, and of justifying his accession to the Macleayan succession as, in a special sense, the Australian member thereof. But in his modest way he was content to allow results to speak for him, without commentary of his own. No better illustration of his many admirable characteristics, especially his capacity for inspiring the co-operation of others by giving a lead, and of deservedly becoming the tacitly acknowledged leader, without any evident assumption of leadership on his part, was possible, than was afforded by his never-failing, effective, but unobtrusive service, and his unostentatious liberality to the Linnean Society of New South Wales, from first to last, as the surviving early Members can testify.

PRELUDE TO WILLIAM MACLEAY'S AUSTRALIAN CAREER.

Second son of Kenneth Macleay of Keiss (not Kenneth Macleay, antiquarian, of whom a notice is given in the *National Dictionary of Biography*), who married Isabella Horne; born at Wick, June 13th, 1820—Educated at the Edinburgh Academy: medical student at Edinburgh University, but removed to Australia before graduating—1838-39, the family influences which helped him to shape the prelude to his career in Australia—1838, by the advice of his uncle, Alexander Macleay, after the death of his widowed mother, William Macleay decided to emigrate to Australia; accompanied by his brother John, he came out with his cousin, William Sharp Macleay, and James Macarthur, of Camden Park, leaving England on November 11th, 1838; the close companionship with his cousin, and their scientific diversions during the long voyage were responsible for the awakening of William Macleay's interest in Natural History; James Macarthur's non-scientific but still helpful influence on an expectant young squatter—1839, March 10th, arrival in Sydney; personnel of first family gathering assembled at Elizabeth Bay House to welcome the new arrivals.

Events leading up to William Macleay's departure for Australia.—Unless circumstances prevented such an undertaking, Alexander Macleay would certainly have paid a farewell visit to his relatives and friends in Scotland, before leaving England for Australia in August, 1825, for he could hardly have expected to revisit the old land. Even if he did, his visit would have made little permanent impression upon William Macleay, then a child in his sixth year. But after his arrival in Sydney, he evidently kept in touch by correspondence with his Scotch relatives, as he, and other members of the family did, with William Sharp Macleay in Cuba, as well as after the latter's return to England in the autumn of 1836. Knowing that the latter was contemplating a visit to Australia, Alexander Macleay seems to have advised his two nephews, William and John, to come out with their cousin, as the first step to going on the land, leaving it to William Sharp Macleay to arrange the details. As we shall see later this advice proved to be good advice, for it was based on a knowledge of the impetus to settlement, as well as on his own and his son George's experience as farmers and pastoralists of standing. So far as William Macleay is concerned, his acceptance of his uncle's advice was a momentous decision. We may leave John out of account for the present as, though he may have derived some temporary benefit from the sea voyage and a change of climate, his delicate health prematurely blighted his prospects of becoming either a successful squatter or a man of science.

William Sharp Macleay was born in London, educated in England, and his mother was English, so that he was not so directly interested in Scotland as his father. Nevertheless, when the time arrived he was quite ready to take a practical interest in his younger inexperienced Scotch cousins, which was to have important results. No less momentous was William's acceptance of the advice to come out to Australia in the same ship with his cousin, William Sharp Macleay, for it was to be a most eventful voyage.

Unfortunately we have no autobiographical details of the awakening and subsequent development of William Macleay's interest in Natural Science, but a consideration of some now available facts will lead to a fair approximation to the truth. He may possibly have entered upon the study of zoology as a medical student at Edinburgh University. If he had attended the lectures of Professor Jamieson and developed a student's interest in the Professor's museum, that would be something to the good. But the lasting interest in Natural History for its own sake, which bore fruit in later years, was profoundly stimulated, if not actually awakened, by the close companionship with his cousin, William Sharp Macleay, and a share in his scientific diversions on the long voyage from England in a sailing ship, in 1838-39. William Macleay, at this time, was a young man in his nineteenth year, with but little knowledge of the world; whereas his cousin was in his forty-seventh year, a gifted and experienced zoologist, who personally knew many of the eminent biologists of his time (in Paris and London), a voyager who had crossed and re-crossed the Atlantic, after spending ten years of his life in the tropics. We know, from their own records, how only a few years later, William Sharp Macleay was to deserve the gratitude of Assistant-Surgeons T. H. Huxley and J. Denis MacDonald for his kindly encouragement and help in making the most of their scientific opportunities at sea.

It was to be expected of him, therefore, that he should have laid himself out to share his interest in what was to be seen or captured on the voyage, with his two cousins, his own kith and kin, for if they had any latent enthusiasm, or were at all responsive, they could not have had a more inspiring mentor, or a more capable guide, philosopher and friend. The affection which throughout the rest of their intercourse, subsisted between them, and the deference and respect which William Macleay always showed towards his older cousin, go far to establish the belief that the close companionship and influence of William Sharp Macleay on the long voyage to Australia was a very powerful factor in the future scientific career of William Macleay. Direct evidence of this is afforded by a treasured copy of the "Annulosa Javanica", bearing the inscription, "W. Macleay Esq., from his affectionate cousin".

William Sharp Macleay entered upon the voyage prepared to continue the study of Nature at sea which had engaged his attention in crossing and re-crossing the North Atlantic. He brought with him his microscope, apparatus for tow-netting and a supply of books. It was winter in the northern hemisphere when the voyage began, but there would be opportunities for observational zoology. The conditions were more favourable after crossing the equator. One of his sketch-books contains a number of drawings of pelagic Hydrozoa, Crustacea, Pteropoda, Tunicates, an Esocid fish and other organisms taken with the towing net "halfway between Brazil and the Cape of Good Hope", or "off the Cape of Good Hope"; and of a parasitic crustacean found on a shark, with critical notes on some of them. The specimens figured were new or of special interest

to him; but the commoner or better known forms, not figured, would serve to interest his associates, and mitigate the tedium of the long voyage. At least we may be sure that William and some of his companions were not content to be mere unsympathetic lookers-on when the conditions permitted tow-netting.

We know, from their published records, how voyagers to Australia, before and about this time, who were interested in natural history, in the old days of slow sailing ships, like Banks and Solander, Dr. George Bennett, James Backhouse, Charles Darwin, Mrs. Charles Meredith (née Louisa Twamley, authoress of "English Wild Flowers"), fortified themselves against tedium by taking advantage of their opportunities of studying Nature. William Sharp Macleay, on his arrival in Cuba, in December, 1825, sent his friend Vigors in London a long account of his ornithological observations made during the voyage, and at the ports at which the vessel touched.

Mrs. Meredith (1812-95)—née Louisa Anne Twamley, authoress of "English Wild Flowers", illustrated from her own drawings, and other books, published in England before she left for Australia—deserves mention as the writer of "Notes and Sketches of New South Wales during a Residence in that Colony from 1839 to 1843" (a misprint for 1840), published in London in 1844. This little book is an interesting record of the voyage to Australia, of first impressions of Sydney, and of a visit to Bathurst, by an accomplished woman interested in Natural History. The Merediths arrived in Sydney on September 27th, 1839. A fortnight later, they journeyed to Bathurst, where Mrs. Meredith remained for a month, while her husband visited his sheep-station on the Murrumbidgee. Soon after their return to Sydney, in January, 1840, they went to reside at Homebush, formerly the residence of Mr. D'Arcy Wentworth. In October, 1840, they removed to Tasmania, where they resided permanently. Mrs. Meredith, by her sustained efforts to popularize the study of Natural History in Tasmania, well deserved the name of the "Grand Old Lady of Tasmania", by which she came to be known. Among her books, some of them illustrated from her own drawings of plants, animals and scenery, mention may be made of "My Home in Tasmania during a Residence of Nine Years" (2 vols., 1852), "Some of My Bush Friends in Tasmania" (Two Series, 1869-91, with 11 and 12 coloured plates), and "Tasmanian Friends and Foes, Feathered, Finned and Furred" (1881). Mrs. Meredith was here only a short time and resided too far from Sydney to make the acquaintance of the Macleays. But her little book is deserving of notice because it gives particulars of life in Sydney and the country as it was when William Sharp and William Macleay came to Australia.

A more important book descriptive of the progress of British settlement in Australia in the "Thirties", shortly before William Sharp Macleay and his cousins came to Sydney, is "A Narrative of a Visit to the Australian Colonies" (1832-38), by James Backhouse (London, 1843). This book is a most valuable record for the period to which it relates. The visit "was undertaken solely for the purpose of discharging a religious duty", by Mr. Backhouse (1794-1869), and his colleague, Mr. G. W. Walker, under the auspices of the Society of Friends. The two travellers made their philanthropic journeys mostly on foot, and were able to visit a great many settlers in the country, by whom they were hospitably received. Moreover, Mr. Backhouse was an excellent botanist, at the same time not regardless of the fauna, and paid as much attention to natural history as circumstances permitted. I have already quoted from his interesting book in the first part of my Address.

Charles Darwin's brief record of his visits to Sydney and Bathurst, in January, 1836, is also worthy of mention (Naturalist's Voyage Round the World, Chapter xix).

Voyage to Australia and arrival in Sydney.—The published biographical notices of William Macleay, with the exception of the Introduction to the Macleay Memorial Volume, merely state that he arrived in Australia in 1839. It was from Alexander Macleay's entry in his Plant-book, "Plants brought by W. S. Macleay, per *Royal George*, March, 1839", that I first learnt of the arrival in March, though the day of the month is not given. Reference to the files of the newspapers of the period, the *Sydney Herald*, the *Australian*, and the *Sydney Monitor* for the month of March, 1839, revealed the fact that the issues of all three for March 11th record the arrival of the *Royal George* on the previous day, Sunday, March 10th. The three lists of the passengers, however, do not agree in all particulars. As given in the *Herald* and the *Australian*, the list includes only two Macleays, mentioned as Mr. Walter McLeay, and Mr. William McLeay. I, therefore, give the more satisfactory list from the *Monitor*—"Same day (yesterday) the ship *Royal George*, 585 tons, Captain Chaidy (Richards, in the other two and in the manifest) from London, 11th November (1838), via Cape of Good Hope, 25th January (1839), with merchandise. Passengers: J. (James, in the other two) McArthur Esq. and lady, (W.) S. McLeay Esq., Messrs Barnett (Burnett), Surgeon Superintendent Richard Burchell Esq., Dalrymple (George in the other two) Leslie, Watt (omitted, as such, in the other two, apparently mistaken for Walt. and given as the Christian name of the first McLeay to be mentioned), (John) McLeay, Wm. McLeay, Hodgson, Browne (Bouverie in the other two), Isaac, and Stone. Steerage, 102 emigrants with their friends." (The *Herald* gives—"The *Royal George* has brought one hundred emigrants from the agricultural districts, who have arrived in a very healthy condition. There were two births on the voyage, and no deaths.") "March 15th.—The *Royal George* has hauled to Campbell & Co.'s wharf to discharge." "March 18th.—Manifest of the *Royal George* . . . 3 casks seeds, 21 rams, 18 ewes, C. F. Warne; 1 phaeton, 1 gig, 1 chariot, 1 horse, 1 britska, 2 chests plate, 44 packages, James McArthur; 5 cases marble, 2 cases plants, 37 packages, W. S. McLeay."

This interesting record furnishes an explanation of the two letters of Jany. 7 and July, 1838, from Edward Macarthur to W. S. Macleay already mentioned (PROCEEDINGS, 1920, p. 606). Before considering this, some preliminary details will help, because William Macleay's introduction to, and association with, James Macarthur on this eventful voyage, were the beginning of future friendly relations with James and William Macarthur which came about in the fulness of time, in ways that were entirely unforeseen. Two far distant events may be mentioned. About twenty-eight years later the friendly relations between the Macarthurs and the Macleays were enhanced by James and Emily Macarthur becoming the parents-in-law of Arthur Alexander Walton Onslow, grandson of Alexander Macleay. About thirty-six years later Sir William Macarthur was to be chosen as the first Vice-President of the Linnean Society of New South Wales, and Captain Onslow a member of the first Council thereof.

Captain Sturt started from Sydney on his second expedition "down the Murrumbidgee and Murray Rivers" on Nov. 3, 1829. Of the first day's journey he says: "I proceeded direct to the house of my friend, Mr. J. Deas Thomson, who had agreed to accompany me to Brownlow Hill, a property belonging to

Mr. McLeay, the Colonial Secretary, where his son, Mr. George McLeay, was to join the expedition". After a hasty breakfast, he went to the carter's barracks. At 6.45 a.m. the party with drays and pack-horses "filed through the turn pike-gate, and thus commenced its journey with the greatest regularity". Sturt and his companion, after keeping with the party until the junction of the Great South Road with the Great Western Road, four miles from Sydney, pushed on, and reached Brownlow Hill, a fifty-mile ride, about sunset. "The party arrived at Glendarewe, the farm attached to Brownlow Hill, on the 5th." Brownlow Hill and Glendarewe farm comprised the property of 15,000 acres, about 40 miles out of Sydney, purchased by Alexander Macleay soon after his arrival in Sydney, as mentioned in Mrs. Macleay's letter to her eldest son, then in Cuba, written about June, 1827, as already mentioned (PROCEEDINGS, 1920, p. 590). The object of this purchase was to provide a career on the land for his sons, George and James. With the co-operation of a capable overseer they forthwith managed the property.

Among their neighbours at this time were James and William Macarthur, who since 1818 had been assisting their father, Captain John Macarthur of Elizabeth Farm, Parramatta, to improve and manage his property at Camden.

John Macarthur (1767-1834) "who introduced the merino sheep into Australia, and founded the Australian wool trade", and his estimable and capable wife, Elizabeth, were the honoured parents of five sons and three daughters. The eldest son, Edward Macarthur (1787-1872), was born at Bath, England, and came to Sydney in his infancy with his parents in the Second Fleet in June, 1790; he went to England to be educated in 1795 and returned to Sydney in 1806 to visit his parents before entering upon a military career; he served with distinction in the Peninsular War; visited Sydney for the third time for ten months, April, 1824, to February, 1825; served on the staff in Ireland in 1837; came to Australia for the fourth time as Deputy Adjutant-General; in 1855 was Commander-in-Chief of the Forces in Australia; Lieut.-Governor of Victoria, Jan. to Dec., 1856, after the death of Sir Charles Hotham; he rose to the rank of Major General and in 1862 was created K.C.B.; he eventually returned to England. James, second son, died in infancy. John, third son, born at Parramatta, went to England with his father and eldest sister to be educated, 1803; subsequently chose the legal profession, and at the time of his death in 1831, was a rising young equity barrister. James, second of this name (1798-1867), fourth son, and William (1800-82), fifth son, were also born at Parramatta; they accompanied their father to England to be educated in 1809; spent some time with their father in France and Switzerland, and returned to Sydney with him in September, 1817. The following year "James and William, assisted by a gardener . . . began work at Camden, where but one acre of land was cleared and a small weatherboard cottage built" (Some Early Records of the Macarthurs of Camden, p. 314). Considerable progress had been made at the time of Mrs. Macarthur's visit to Camden in Dec., 1830. I have already given an extract from her letter to her son Edward in England dated from Camden, Dec. 29th, 1830, in which she speaks of the young McLeays, George and James, at Brownlow Hill as very agreeable neighbours of William her youngest son, and of their frequent visits to Camden Park (PROCEEDINGS, 1920, p. 630). James is not mentioned because he was away on his second visit to England, whither he went in 1828 with a shipment of wool, arriving on Sept. 12th, to superintend the sale, and to gain experience

by learning from the wool-buyers what their requirements were, and what they thought of the Camden wool; also to visit wool-growers in Germany and to communicate with the directors of the Australian Agricultural Company. He returned early in 1831, the year of the untimely death of his brother John in London. Their father died at Camden on April 10th, 1834. He had been a Member of the Legislative Council from 1824-33. The new home at Camden was in course of erection at this time but was not completed. Thereafter the entire management of the Camden estate was shared by James and William. There are some interesting records of William for the year 1836. James Backhouse records that on Feb. 24th, 1836, "I spent a few hours with Alexander McLeay, Chief Justice Forbes, Sir John Jamison, William Macarthur, and some other gentlemen, who requested me to join them in examining the fruit of the Vines, of which they have a collection, amounting to about three hundred varieties; they were brought to the Colony by James Busby, from Luxemburg, Montpelier, etc." (Narrative, p. 350). Alexander Macleay's Plant-book shows that before April, 1836, he was exchanging plants with William Macarthur. The announcement of his Excellency the Governor's appointment of the first "Committee of Superintendence of the Australian Museum and Botanical Gardens", dated June 14th, 1836, appeared forthwith in the *Government Gazette*. The first four of the ten names on the list of members are, The Honorable Alexander McLeay Esq., Sir John Jamison, K.G.V., Phillip Parker King Esq., William Macarthur Esq., and the last is George McLeay Esq.

James Backhouse and his colleagues visited George and James Macleay at Brownlow Hill, Oct. 19th-22nd, where on the 20th they met William Macarthur, and accompanied him "to his noble mansion, at Camden, which is of two stories, built of beautiful sandstone and finished in style equal to that of the dwellings of the upper class in England. The gardens are extensive and well laid out. . . . The seasons have latterly been so dry, that not more than 10,000 sheep can now be kept here, where formerly 30,000 were maintained; the flocks have consequently to be driven to the higher lands, to the south, for pasturage". The following day they visited the Camden farm-establishment and "had a meeting with about 100 of the men, who are now busy with the sheep shearing" (Narrative, p. 447).

The new home was now finished, but as Mrs. Macarthur is not mentioned, apparently she had not yet removed from the old home, Elizabeth Farm, Parramatta. James Macarthur too is not mentioned, because in this year, 1836, he visited England for the third time, to convey petitions to the King and Parliament on transportation, immigration, and representative institutions; also to publish his book "New South Wales, its Present State and Future Prospects" (1837); and, as it turned out, to marry Miss Emily Stone, daughter of a London banker (1838). Before leaving for England apparently Alexander or George Macleay or both furnished him with letters of introduction to William Sharp Macleay, whose term of service in Cuba ended in 1836. Soon after William Sharp Macleay's return to London in the autumn of 1836, he made the acquaintance of James, who introduced him to his brother, Major Edward Macarthur, in 1837, who during the early part of the year had served on the staff in Ireland.

William Sharp Macleay was ready to depart for Australia in August, 1838, as we know from his letter to Dr. McClelland (PROCEEDINGS, 1920, p. 606). James Macarthur and his wife were ready about the same time, and the former had

evidently arranged to come out in the same ship with William Sharp Macleay. James had many engagements to occupy his attention, so his brother Edward relieved him of the trouble of looking out for a suitable ship, and in July, 1838, wrote the second of the only two available letters to William Sharp Macleay, probably sent by a messenger—"I believe I have found at length, the sort of ship we want. If you could call upon me tomorrow about eleven, we might talk it over. It is very necessary that your friends should inform you whether they will accompany you, for on the 1st of August the owner of the ship is to have a positive answer from me." The friends referred to, William and John, were not ready to sail so soon.

As I am now able to show that the party came out in the *Royal George*, which sailed from London on November 11th, William Sharp Macleay and James Macarthur must have good naturedly given up the idea of coming by the ship that Edward had found, and delayed their departure for two months, to enable William Sharp Macleay's two cousins to join them. Mrs. James Macarthur would at least be glad of this postponement of the final parting from her relatives.

It was well for William Macleay that he did not miss the opportunity of coming out with William Sharp Macleay and James Macarthur, and several others of his fellow passengers. From what has been said above it is evident that James Macarthur, an Australian by birth, had an unrivalled knowledge of the various aspects of the wool industry. He and his brother William were well acquainted with and had shared their father's efforts to introduce merino sheep and to establish the Australian wool-trade. For about eighteen years, part of the time in co-operation with their father, they had developed and successfully managed the Camden estate. James had not only a producer's knowledge of the wool-industry, but his second and third visits to England provided opportunities of familiarizing himself with the wool-buyers' and manufacturers' side of the industry, as well as of learning much about the Continental producers' flocks and methods. From an expectant squatter's point of view it was a liberal education to make the long voyage in the company of one of the foremost of Australian wool-producers, especially as Warne's consignment of sheep was at hand to suggest critical remarks, and to enable James Macarthur to give some demonstrations.

The voyage to Australia in the *Royal George* also made possible for William Macleay other friendships than those with William Sharp Macleay and James Macarthur. Three of his fellow passengers mentioned in the passenger list, published in the *Monitor*, as Messrs. Leslie, Hodgson, and Isaac, I believe I am correct in identifying as George Leslie, Arthur Hodgson, and Fred Isaac, whose names have been handed on to posterity as successful pioneer squatters on the Darling Downs.

George Leslie was the younger brother of Patrick Leslie, and Miss Leslie, who afterwards married Christopher Rolleston, C.M.G. (1817-88, came to Australia in 1838), twice President of the Royal Society of New South Wales, and Auditor General at the time of his death. The Leslies are said to have been members of an ancient Scottish family dating from the eleventh century. An obituary notice of Mrs. Rolleston appeared in the *Sydney Morning Herald* of Dec. 10th, 1906, a few days after her death, in which reference is made to her brothers as pioneer squatters. The notice concludes thus—"It may be mentioned that Mr. Patrick Leslie was one of the founders of the Union Club,

in conjunction with Sir Arthur Hodgson, Mr. W. (after Sir William) Macleay, Mr. W. H. Suttor, and others. The Club was founded in 1856, and was located in Wynyard-square, in the premises now occupied by the Imperial Hotel."

Interesting particulars respecting the Leslies and Arthur Hodgson (1818-1902) are given in J. F. Campbell's important paper "Discovery and Early Pastoral Settlement of New England" (*Journ. Proc. Roy. Aust. Hist. Soc.*, viii, 1922, pp. 263, 270). From this I quote the following—"Leslie's glowing accounts of the Downs induced several New England squatters to follow his blazed track and settle in that famous region. Foremost among these were Sibley and King of King's Creek or Clifton; Hodgson and Elliot of Eton Vale; John Campbell of Westbrook; and Hughes and Isaac of Gourie. These five stations in 1841, formed the most northerly nucleus of upland pastoral settlement within the New England district as then recognised." (p. 270.)

Captain W. J. Dumaresque was a member of the old Legislative Council from June, 1843; James Macarthur from 1848; George Macleay from 1851; and William Macleay from March, 1855, all four remaining members till the dissolution on Feb. 29th, 1856. James Macarthur, George Macleay, William Macleay and Patrick Leslie were Members of the first Legislative Assembly elected under the Constitution Act, 1856-57. The first three, and Arthur Hodgson (but not P. Leslie, who went to New Zealand in 1857) were Members of the Second Parliament under Responsible Government, 1857-58; and William Macleay and Arthur Hodgson of the Third Parliament, 1858-59. Thereafter William Macleay was a member of the Fourth to Seventh Parliaments inclusive, 1860-74, and Captain Onslow was a member from 1869-1877; A. Hodgson was subsequently a member of the Queensland Legislature, and at one time Premier.

The *Royal George* entered Sydney Heads on Sunday, March 10th, and would anchor in Spring Cove or Watson's Bay for medical inspection. Surgeon Superintendent Burchell was able to report a clean bill of health, so that if the ship arrived early in the day, and the wind was north-east and not southerly, the *Royal George* may have been able to reach an anchorage in Sydney Cove before dark. Whether Alexander Macleay had heard that William Sharp Macleay and his companions were to come by the *Royal George* would depend on circumstances. Their arrival, therefore, may have been expected, or not. Newspaper reporters were able to get their lists of the passengers for insertion in the morrow's issue.

Nearly thirteen years and seven months had passed since William Sharp Macleay parted with his parents and sisters. He left England for Cuba in October, 1825, and they for Australia in the preceding August. The *Sydney Gazette*—then published on Mondays and Thursdays—for Thursday, January 5th, 1826, records that: "On Tuesday last arrived from England the ship *Marquis of Hastings*, Captain Ostler. She left Portsmouth the 24th August and Rio the 2nd of November, and brings 152 male prisoners—not having lost a man on the passage. The guard comprises a detachment of the 57th Regiment, under orders of Ensign Stewart. The Surgeon Superintendent is Dr. Rutherford, R.N." A separate paragraph, without any reference to any other passengers, states: "By the *Marquis of Hastings*, the new Colonial Secretary, Alexander McLeay Esq. has arrived. Mrs. McLeay, with six Daughters, accompanies him." George and James are not mentioned, so that they must have come later, but before 1829.

The personnel of the family gathering at Elizabeth Bay House in honour of the three new arrivals by the *Royal George*, unless circumstances absolutely prevented the attendance of some of them, would probably have been—Alexander Macleay and his wife; Major and Mrs. Innes and their youthful son from Port Macquarie; Captain and Mrs. W. J. Dumaresque and their youthful son from St. Aubin's or Tivoli; William Sharp Macleay, eldest son; George and James, younger sons from Brownlow Hill; William and John, nephews; Arthur Onslow, grandson. Total: father and mother, two married daughters, two sons-in-law; three sons, unmarried; two nephews; and possibly, if two of them were not too young, three grandsons; possibly 15 in all. It must have been a very joyous re-union, but with just a little overshadowing cloud, especially for parents and eldest son, in that in the interval since the parting in England, the death of Fanny Leonora (Mrs. Harington) had finally parted the eldest son and the oldest daughter, who was his "favourite" sister.

The inscriptions on the cenotaph in St. James' Church to the memory of Alexander Macleay and his wife are on the same tablet, that relating to his wife below. This begins—"Eliza—His wife, daughter of James Barclay Esq.—of London—The honored mother of seventeen children—of whom nine survived—To mourn the loss of her constant love—and matronly example.—Born 13th March, 1769, deceased 13th—August 1847—Preceding her husband by a few months—only, after a happy union—of more than fifty years."

Of the nine survivors alluded to (1847) I am able to account for only seven (William Sharp, George, James, Christianne, Margaret, Rosa and Kennethena), and of the remaining eight only one, Mrs. Harington, deceased in 1836.

In the first part of this Address (Proc., 1920, p. 584) I have given an extract from a letter to William Sharp Macleay written about June, 1827, when he was in Cuba, of which a copy was transmitted to me by Dr. Daydon Jackson, by the kind permission of the Council of the Linnean Society of London. After speaking of her husband's periodical visits to a place called Elizabeth Bay where he had a garden in progress, hoped or expected to build a house, was then building stabling, and had already erected a gardener's cottage, the writer continues—"Your sisters are all pretty well just now, though Margaret has lately been very unwell with a severe cold for which she has been bled and blistered. Chris (Christianne Susan, later Mrs. W. J. Dumaresque) too has been coughing a great deal lately. Fanny has had one or two severe." . . . (the conclusion of the letter is missing).

At the time this now incomplete letter was written the three daughters mentioned were unmarried, and living at home. Fanny (Frances Leonora) died in 1836, and was probably the first to be interred in the family vault in the Camperdown Cemetery. The cenotaph to her memory in St. James' Church, on the south wall, below that to William Sharp Macleay, bears the following inscription below the family coat of arms—"Frances Leonora Harington—Eldest daughter of Alexander and Eliza Macleay—was born ix November MDCCXCIII.—Married to Thomas Cudbert Harington (Under Secretary at the time—xxv June MDCCCXXXVI—And died viii August following—After a brief union—Of six weeks—Endowed with superior talents—Eminent in graceful accomplishments—She, by deliberate preference—Partook sparingly of the pursuits and amusements—Of the Society she was qualified to adorn—And with self-denying, unobtrusive goodness—Devoted her time and faculties—To instruct the poor and

fatherless—In the principles of the doctrine of Christ—And now little children abide in him."

Margaret Macleay (1802-58) married Captain, afterwards Major, Archibald Clunes Innes (1800-57), H.M. 3rd Regiment of Buffs, uncle of Mrs. Boswell (Proc., 1920, p. 583), and brother of George Innes of Bathurst, who with his brother came to Australia in 1823. George Macleay married their sister Barbara in 1842. Major Innes was at Port Macquarie, during at least part of his residence in New South Wales, and lived at Lake Cottage, Lake Innes, seven miles in the country. J. Backhouse has recorded that during his visit to Port Macquarie, in July-August, 1830, on July 31st—"We received a hearty welcome from A. C. Innes, and his wife, son-in-law and daughter of our kind friends Alexander and Elizabeth (Eliza) McLeay of Sydney." On finally parting from them to continue his journey he records, August 14th—"After a solemn parting from our friends at Lake Cottage, with whom we have sympathized in their affliction, by the loss of a beloved sister (Fanny, Mrs. Harington, died August 8th), who devoted herself much to the good of others, we proceeded to Port Macquarie." (Narrative, p. 406.) I am indebted to Mr. C. Hedley for a photograph of the cenotaph to their memory in the old church at Port Macquarie. From this it appears that Major Innes died at Newcastle on August 20th, 1857, aged 57 years; and Mrs. Innes, at Lake Innes on September 7th, 1858, aged 56 years.

Rosa Roberta Macleay, fourth daughter of Alexander Macleay, married Arthur Pooley Onslow, an officer who served in the Indian Civil Service at Madras, on July 17th, 1832. Their eldest son, Arthur Alexander Walton, was born at Trichinopoly on August 2nd, 1833; and in 1838 he came out to stay with his grandfather for about two years, probably to escape from the Indian climate. Consequently he was an inmate of Elizabeth Bay House, when William Sharp Macleay and his cousins arrived. He returned to England to be educated preparatory to entering the Royal Navy, in charge of Mrs. Dumaresque, widow of Colonel Henry Dumaresque, in 1841.

Mrs. Boswell notes in her Journal, Nov. 29th, 1847—"My uncle is still away, and my aunt speaks of spending Christmas in Sydney, which I hope they may all do, otherwise they will not see the Dumaresq boys, who go to England in the *Agincourt*. Mrs. Onslow, too, will not be remaining much longer in this country, and she is taking her eldest daughter, Georgy, away with her" (p. 134).

From Mrs. Boswell's Reminiscences we learn that on January 10th, 1848, Major and Mrs. Innes and their children left Port Macquarie to spend three months in Sydney, partly for a holiday, and partly to meet Mr. and Mrs. Onslow and their younger children from India, who were also visiting Sydney.

On March 5th, 1848, Mrs. Boswell notes that "our party are still all at Brownlow Hill". The party returned on April 27th, 1848, bringing Mr. Onslow with them, by the Clarence River steamer, which in consequence of unfavourable conditions of the bar at the entrance to Port Macquarie was unable to land passengers for the Port on the outward journey, but after being carried on to the Clarence they were safely landed on the return journey. On May 4th Mr. Onslow started for Sydney overland, that is as far as Raymond Terrace, Newcastle. Mrs. Boswell adds—"He had promised to return and bring his family here at the end of the month, if he can get a steamer to call at Port Macquarie with them, and if they come, Miss Macleay (Kennathena) will come with them. I may here say that Mr. Onslow did not succeed in getting a steamer going north

to call and land passengers at Port Macquarie, as it involved also calling for them. So they all went back to India without our seeing any of them again" (p. 145).

It is of interest to us that Arthur Onslow was an inmate of Elizabeth Bay House, at the time William Sharp Macleay arrived in 1839, and for some time after. He entered the Navy in May, 1847, and after ten years' very interesting experiences, in March, 1857, he came out in H.M.S. *Iris* bound for Sydney to join H.M.S. *Herald*, surveying vessel on the Australian station, in command of Captain Denham. The *Herald* returned to England in 1861 and was paid off. After additional service, Lieutenant Onslow was promoted to Commander in 1863. Shortly after, his health broke down, and he returned to Sydney on two years' sick leave, and apparently did not return to active service. In April, 1871, he was placed on the retired list, and promoted to the rank of Post Captain. Meantime, Commander Onslow married the daughter of James Macarthur of Camden in 1867; and was elected to the Legislative Assembly as the Member for Camden in January, 1870. When Lieutenant Onslow joined H.M.S. *Herald*, he had for his colleagues, among others, Surgeon Rayner, and Assistant-Surgeon J. Denis Macdonald, who were friends of William Sharp Macleay before Lieutenant Onslow arrived, as narrated in the first part of this Address (Proc., 1920, pp. 616-17). The addition of a relative to the official staff of the *Herald* from 1857 to the termination of her commission on the Australian station, early in 1861, would add to William Sharp Macleay's interest in the work of the ship. During his service in H.M.S. *Herald* Lieutenant Onslow seems to have become interested in Natural History, especially in conchology. His first appointment afloat, after his return to England in 1861, was to H.M.S. *Phaeton*, and he was at Vera Cruz during the French operations at Mexico.

After the second of his two expeditions down the Murrumbidgee, etc., in 1829-30, Captain Sturt (1795-1869) sailed for Norfolk Island in command of a detachment of soldiers in 1830, where, shortly after, he met Allan Cunningham. But ill health, including threatened blindness, caused his return to Sydney in January, 1832, after about eighteen months' service. Soon after he departed for England on sick leave to supervise the publication of his first book, "Two Expeditions, etc." He was married one week before embarking on the return voyage to Sydney, on September 30th, 1834. The happy couple arrived in Sydney about March, 1835 (the exact date not given). His biographer says, concerning this second visit to Australia—"The young wife was deeply impressed by the approach to Sydney. . . . Sturt left his wife on board the ship (in which they had arrived) while he went to the Macleays' fine house near the harbour. Presently Mrs. Sturt saw him return in a well-appointed boat, rowed by two stalwart men dressed as sailors. Her husband told her these boatmen and most of the men she would now see were convicts, and that it was important not to make any remark likely to hurt their feelings. The kind Macleays (George and James) welcomed the Sturts most warmly to their paradise of Brownlow Hill. The young settlers however soon took up their abode in a pretty cottage in the outskirts of Sydney, whence Sturt made many long bush journeys in his search for a promising allotment." (p. 112.) Thereafter, in the same year, 1835, Sturt settled first at Bargo Brush or Mittagong; in 1837, removed to Varroville, near Liverpool, which was his home until he left New South Wales for good, to reside in Adelaide, on his appointment as Surveyor General of South

Australia. He returned to England early in 1847 on leave of absence; reached Adelaide again in August, 1849; was appointed Colonial Secretary; retired in December, 1851, in fear of blindness, and received a pension; and sailed for England on March 27th, 1853, "to save (money) and educate his boys; and to reside there for the rest of his life". In a letter to George Macleay, dated from Adelaide, May 19th, 1852, giving an account of his retirement, and of the death of his mother, and other family news, he adds—"Remember me kindly to Deas-Thomson. Remember me, too, to William McArthur and James, and say I do not forget old times. Remember me also to (Captain William) Dumaresq and his wife" (p. 296).

Sturt's biographer (apparently his daughter-in-law, Mrs. Napier George Sturt, wife of Colonel Napier George Sturt, R.E.), I think, had no opportunity of visiting Australia, so that the error I am about to point out, is excusable. The statement that, about March, 1835, "Sturt left his wife on board the ship, while he went to the MacLeays' fine house near the harbour. Presently Mrs. Sturt saw him return in a well appointed boat, etc.", needs amendment. In March, 1835, Alexander Macleay was still Colonial Secretary (retired in January, 1837), occupying the official residence in Bridge Street. There was a garden, stable and gardener's cottage, but Elizabeth Bay House was not then built, and when built was not ready for occupation until about April, 1837. Apparently what happened was that, when the ship was at anchor in or off Sydney Cove, Sturt went ashore, perhaps in the ship's boat with other passengers, landed at what is now Circular Quay, about five minutes' walk from the Colonial Secretary's office, to pay his respects and report his arrival; then perhaps he went to the private residence in Bridge Street. "Presently" he returned to the ship in a hired boat.

Sturt's letter to George Macleay, from Adelaide, dated May 19th, 1852, ends with the request—"Remember me kindly to (J.) Deas-Thomson (who accompanied him on the first stage of his Second Expedition, Sydney to Brownlow Hill, Nov. 3, 1829; son of E. Deas-Thomson, successor to A. Macleay). Remember me, too, to William McArthur and James, and say I do not forget old times. Remember me also to Dumaresq and his wife." This refers to George's brother-in-law, Captain William John Dumaresque, the younger brother of Lieutenant-Colonel Henry Dumaresque, who arrived in October, 1825, being the first member of the Dumaresque family to come to New South Wales. At the time of his death at Port Stephens on May 3rd, 1838, Henry Dumaresque was First (that is Chief) Commissioner of the Australian Agricultural Company, and the successor of Sir Edward Parry, whose name is commemorated by *Macropus parryi*, a handsome wallaby which he brought to the notice of its describer. The New South Wales Calendar and General Post Office Directory for 1832, gives his address as "St. Helier's, Alcorn's Inn" (then a postal town in the Hunter River District, with a weekly mail, 137 miles from Sydney, 10 miles from Maitland), and his brother William's as "ditto". James Backhouse's Narrative records, June 25th, 1836—"Near this place (Muscle Brook, now Muswellbrook) we came again upon the rich, alluvial soil of the Hunter, and a few miles further, reached Arthur's Vale, a large farming establishment, belonging to Henry Dumaresq (evidently absent at the time at Port Stephens), by whom we had been recommended to the kind notice of his agent. . . . June 27th. We proceeded to St. Aubin's, the residence of William Dumaresq, from whom we received a most kind welcome. This establishment is conducted on a similar plan to that at Arthur's Vale, and

with similarly beneficial results." Compared with the reference to the Inneses, this is a bachelor's reception. Apparently William Dumaresque had acquired an estate of his own, and probably about this time, October 22nd, 1830, married a daughter (Chris of her mother's letter to William Sharp Macleay) of Alexander Macleay's. June 29th, 1836—"Not apprehending it to be our duty to proceed further in this direction (Mount Wingen or the Burning Hill, a pseudo-volcano, distant about 14 miles from St. Aubin's), we returned by way of Henry Dumaresq's house at St. Hellier's to Arthur's Vale", and thence on to Maitland. From Maitland they proceeded via Morpeth, Raymond Terrace, Sawyer's Point, to Port Stephens where, on July 12th, "a boat, belonging to the Australian Agricultural Company, conveyed us from Sawyer's Point, on the south-west of the estuary of Port Stephens, to Tarlee (Tahlee) House, the residence of Henry Dumaresq, the Company's First (that is Chief, not in time or order), by whose family we were received with much Christian kindness" (p. 399). All this happened about a month before the visit to Port Macquarie and to Major Innes and his wife, as narrated above.

William John Dumaresque came out as a member of the suite of his brother-in-law, Governor Darling, arriving in Sydney on December 22nd, 1825, and subsequently took charge of the Public Works Department, as Inspector of Roads and Bridges. "He retired from the service in 1829, and settled on his grant of 2,500 acres, St. Aubin's in the Hunter Valley. To this grant had been added his wife's dower grant, 'according to the custom of the time'". On 22nd October, 1830, he married Christianne Susan, the daughter of Alexander Macleay. As there is no reference at all to her, such as there is to Mrs. Innes, Mrs. Dumaresque may have been away from home at the time of J. Backhouse's visit to St. Aubin's. The family comprised—William Alexander, B.A. Cantab. (went to England to be educated, perhaps to enter the army, but returned to Australia to become a squatter, first at Scone in the Glen Innes District, later on a friend of William Macleay and guest at Elizabeth Bay House, especially in 1874)—Alexander M., Captain, 63rd Regiment (apparently did not return to Australia)—Elizabeth Ann, died young—Susan Frances Sophia, married in October, 1859, to the Hon. Louis Hope, of Queensland (later on the friend of William Macleay, and a guest at Elizabeth Bay House during the Garden Palace Exhibition in 1880)—and Eliza Henrietta. Before 1848, Captain Dumaresque had a home at "Tivoli", Rose Bay, where Alexander Macleay died on July 19th, in his 82nd year. At this time the latter was a widower, and William Sharp Macleay was a bachelor. After his accident, by his own request, he was taken to "Tivoli", that he might have the womanly ministrations of his nearest female relative in what, he must have suspected, would be his last illness. His son-in-law died a little over twenty years later. The cenotaph to his memory in St. James' Church, King Street, bears the following inscription, below a medallion—"William John Dumaresque—Capt. Royal Staff Corps—Served in the Peninsula, and Canada, and New South Wales—Born xxv February MDCCXCII., died in November MDCCCLXVIII." The tomb or vault in the old Camperdown Cemetery is close to that of the Macleay family. But both vaults bear only the surnames Macleay, Harington in one case, and Dumaresque in the other, so that one cannot tell who were buried therein, unless there happen to be cenotaphs in St. James. As there is not one to the memory of Mrs. W. J. Dumaresque, I do not know when she died.

William Alexander Dumaresque, eldest son, is of special interest to us. He was married to Miss Gladstone, sister of Lady Belmore, wife of the Earl

of Belmore, Governor of New South Wales (January 8th, 1868, to February 22nd, 1872). At this time he was the owner of Furracabad, a well known station in the Glen Innes District. The jubilee of the district was celebrated November 1-5, 1922. A small volume entitled "In the Land of the Beardies" (hirsutely speaking, as the pioneers in the old days had no time or inclination to shave) was issued in connection with the celebrations. This contains an attractive portrait of W. A. Dumaresque. His eldest son, John Saumarez Dumaresque (1873-1922), born at Glen Innes, is well known to us as the late Commodore of H.M. Australian Navy; he did us the honour of being present at the Centenary Meeting as one of the two guests of the evening.

WILLIAM MACLEAY'S AUSTRALIAN CAREER.

First Period, 1839-57.

The transition from "New Chum" to practical Squatter (managing the station in which he was interested), Member of Parliament, Field Naturalist (with something more than a mere sportsman's interest in the fauna), and "Benedict" with his home in Sydney.—1839-54: Family influences again helpful; by the advice and with the help of his uncle and his cousin George, both squatters, William Macleay became a successful squatter on the Lower Murrumbidgee.—1855: Elected to the old Legislative Council as Member for the Pastoral Districts of Lachlan and Lower Darling.—1856: Elected to the first Legislative Assembly under Responsible Government opened on May 22nd.—1859-74: Member for the Murrumbidgee, in succession to George Macleay.—1856: First record of a reviving interest in Natural Science, his election to membership of the Philosophical Society of New South Wales, at the fourth meeting on August 16th.—1857: His marriage to Miss Susan Emmeline Deas-Thomson, second daughter of the Hon. Edward Deas-Thomson, on June 25th; thereafter resident in Sydney, first at Denison House, Phillip Street, afterwards at 153 Macquarie Street.—Again and henceforth, in close touch with, and under the scientific influence of William Sharp Macleay.

Soon after his arrival in Sydney, in March, 1839, William Macleay entered upon the serious business of life as a squatter, without any previous experience to guide him, under conditions that were altogether new and in a very remote district of New South Wales. All that is said of this enterprise in the first of the biographical notices mentioned above, is the brief statement—"In 1839 he came to Sydney, to his uncle Alexander Macleay Esq., then Colonial Secretary; passed the first fifteen years in squatting pursuits on the Murrumbidgee."

The period of upwards of fifteen years, from 1839-55, especially 1854, is that of which we know least, partly because no autobiographical records are available, and partly because in these early pioneering days settlement on the Lower Murrumbidgee was so scattered that things were not sufficiently advanced to find a record in the then current Almanacs or Directories published in Sydney.

John Macleay's delicate health, and premature death, deprived him of the chance of becoming either a squatter or a man of science. Soon after his arrival he visited his cousin Mrs. Innes, wife of Major Innes at Port Macquarie. Mrs. Boswell, then Miss Innes, a girl about nineteen years old, in her "Recollections" thus refers to John—"That autumn (1846) Mr. John Macleay, a cousin of my aunt's, came to stay at the Lake (Innes). He was very delicate, and it was hoped that his health would improve in the fine air and pleasant surroundings. Unfortunately this hope was not realised, and, as a sea-voyage was recommended,

he sailed for London. Our friend, Mr. Gunn, went with him. Poor Mr. Macleay died during the voyage. We were all sorry. He had interested us greatly; he was so gentle and handsome. I spent many an hour reading aloud to him" (p. 107).

When the celebrations were over and William Macleay had seen all there was to see in Sydney—and what this amounted to is suggested by the narratives of Charles Darwin, J. Backhouse, for Sydney, in 1836; and the interesting experience of Mrs. Owen Meredith in 1839-40—including perhaps inspections of the Macleay Collection and Australian Museum, possibly also visits to Botany Bay, La Perouse's Monument and Parramatta, he would begin to think about the future, and how he was to become a squatter. He would see for himself or at least hear that, when he arrived, a drought prevailed. But his uncle and George could tell him that they, too, arrived in Sydney in January, 1826, in a time of very severe drought. Also they could assure him that, though droughts occurred periodically, in due time they broke up. They would relate their experiences as squatters and would advise him to visit the back blocks of the Murrumbidgee, prospecting for a location that would suit him.

As in Sturt's case, when starting from Sydney on his second expedition, the first day's journey would be via the "Great South Road (which) on the left, leaves the Parramatta Road at Speed the Plough Inn, 5½ miles" (in 1832, as also doubtless in 1839) via Lansdown Bridge.

We do not know what actually happened, but upon all the evidence available, what I have to say about it is a natural, not to say a logical, conclusion from the circumstances of the case. William Macleay was a stranger, but a relative, and blood is thicker than water. He had come to Australia by the advice of his uncle. It was now up to his uncle to justify his advice, and doubtless, with George to back him up, he was ready to do so. What conclusion could they come to other than that, as soon as convenient, William, under George's guidance should make a pilgrimage to George's station, Toganmain, on the Lower Murrumbidgee, not only to gain some experience, but to make use of Toganmain as a base for spying out the land before deciding upon the next step to be taken. The importance of this conclusion will be more appreciable if we first consider how it came about that, before 1838, George had a station on the Lower Murrumbidgee.

George Macleay was born in 1809, but I do not know the month. His association with Sturt on the latter's second expedition came about in quite a casual and unexpected way. Hume accompanied Sturt on his first expedition to the Darling, and Sturt hoped to have him again as a second in command on the second expedition. But harvest-time was approaching, and Hume felt that he could not afford to run any risk of not getting the full measure of the harvest. Therefore he reluctantly declined his old leader's offer. Sturt then asked George Macleay to accompany him, not as a paid assistant, but as companion. George Macleay accepted the invitation, entered upon his duties in November, 1829, early in his twenty-first year, amply justified his leader's expectations of him, and thereafter became a fast friend. Since both Hume and George Macleay proved to be capable, trusty sub-leaders, always ready to back up their leader, it is obvious that it was immaterial to Sturt which of the two accompanied him on the second occasion. But to George Macleay, his association with Sturt on this eventful journey was one of the great events of his life, and of fruitful

and outstanding importance. When he accepted Sturt's offer he was a minor, engaged, with his brother, in managing his father's farm and garden at Brownlow Hill, getting a salary with probably a percentage on results. His father and William Sharp Macleay had served their country in important official positions for long and critical periods. When the time for retirement came, they retired, with a letter of thanks and a pension, but without any titular distinction. George never at any time occupied any permanent official position. He was a Member of Parliament for some years at a time when payment to members had not come into vogue, but never a Minister of the Crown. But he had accompanied Sturt on his second "Expedition down the Murrumbidgee and Murray Rivers, 1829-30". On the return journey, Sturt notes that, before the rest of the party reached Pondebadgery (Wantabadgery) on April 28th, 1830—"I had sent McLeay forward (to Sydney) on the 20th with letters to the Governor (Gipps), whose anxiety was great on our account". George delivered his despatches in Sydney on or about May 10th. Sturt arrived on May 25th. When George Macleay started on his long ride back to Sydney, apparently alone, he did not know that he was already a potential squatter on the Lower Murrumbidgee, still less did he know, what was much farther ahead, namely that he was potentially a C.M.G., and later K.C.M.G., primarily because he had been Sturt's companion on the latter's second expedition. The explanation of the statement that on his ride to Sydney he was already a potential squatter on the Lower Murrumbidgee is that in due time the Government decided to recompense him for his honorary services to Sturt by offering him a grant of 1,280 acres of land.

At the outset of his career I believe that William Macleay's station on the Lower Murrumbidgee, known afterwards, but not at this time, as Kerarbury, was entirely his own venture. Waugh's Australian Almanac for 1855, contains a list of the magistrates or J's.P. of the Colony, which includes the names of "Macleay, George, Murrumbidgee" and "Macleay, William, Murrumbidgee" (that is the pastoral district). Their names are included because they were squatters in the Murrumbidgee District, George at Toganmain, and William at what was known afterwards as Kerarbury. But the record in the next volume for 1856 is most enlightening. George's name is omitted, suggesting that he had parted with Toganmain in 1855. But the record for the previous year, 1855, is (the names in alphabetical order; I have included only names of interest to us)—"Clarke (should be Clark), Walter (Karrabung)—Gordon, John (Borambullah)—Macleay, William (Karrabory)—Macleay, Alex. D. (Karrabory)—Peters, John (Gumly Gumly)". This is the only list in all the series of volumes available which gives the station-addresses, all, it will be noticed, aboriginal names or as nearly as those who desired to use them could transcribe. It is therefore most helpful. From this we learn (1) that the original name of William Macleay's station was Karrabory; (2) that, in 1856, because he had been isolated in the bush for fifteen years and because he wanted assistance and more capital to develop the station, his brother, Alexander Donald Macleay (always called Alick in William's Journal) had joined him as his partner in Karrabory; (3) that Walter Clark had a station, Karrabung, evidently adjoining or contiguous to Karrabory. From documentary evidence I know that soon after this, Clark joined the two Macleays as a partner. They then appear to have consolidated the two stations, and as Karrabory was rather a barbaric name, and Karrabung was no better, perhaps it occurred to one of them that Kerarbury was more euphonious.

Haynes John Peters was the young Scotchman referred to in Mr. Justice Therry's book, who came out in 1832, and thereafter for fifteen years successfully managed Alexander Macleay's stations, first at Crookwell, and then at Borambolah, afterwards changed to Borambola, neither name mentioned in Peters' narrative. There is now a railway-station bearing the latter name, evidently on part of the old station, on the Wagga-Tumberumba branch line. Soon after leaving Alexander Macleay's service in 1847, according to J. Gormley, he subsequently married Mrs. Bourke, widow, of Gumly Gumly. John Gordon was manager of Toganmain for George Macleay. After his father's death in 1848, George inherited Borambola and Pulletop, a back-station on Pulletop Creek, a tributary of the Tumut River. George subsequently sold both properties to Gordon. In the above list his name appears as the then owner of Borambola, before the original name had been changed. Gormley records that Gordon told him that in 1838 when he was taking a large draft of sheep from Borambola to Toganmain, about 160 miles lower down the Murrumbidgee, he camped for the night on what was afterwards the site of the town of Wagga Wagga, nine years before the first hut was built.

Kerarbury was sold in 1888. Between 1862 and 1888, Walter Clark died. At the time of the sale the partners were William Macleay, his brother, A. D. Macleay, and John Kerr Clark, either as the trustee of Walter Clark's estate, or perhaps as the purchaser of Walter Clark's interest. I do not know when Alick came out to Australia, whether he resided on the station or had a home in Sydney, nor when he returned to England. I have a letter from him dated from Algiers, 1887, in reply to one from William about the suggested sale of the station, in which he says that with the help of the British Consul he was forwarding a power of attorney, and that he hoped to leave before the end of the month. But I do not think that he came, perhaps in response to a cable.

I have failed to find any corroboration of all the details of (1) the statement in the Hon. W. A. Brodribb's book "Recollections of an Australian Squatter or Leaves from my Journal" (1835), that William and John Macleay, nephews of the late Colonial Secretary, formed a station, quoted by me in the Introduction to the Macleay Memorial Volume (p. xiv); or in my own that William and John engaged in squatting pursuits, first in the Fish River District near Goulburn, afterwards in the Lachlan and Murrumbidgee District, a statement based, I think, on what Mr. Brodribb has to say, and (3) Mr. Brodribb's statement at the lunch given by William Macleay on the occasion of the opening of the Linnean Hall on October 31st, 1885, to the effect that "He came here years ago quite a young man, and embarked in pastoral pursuits—first on the Lachlan, subsequently on the Murrumbidgee River."

John may perhaps, with William, have managed to get as far inland as Alexander Macleay's station at Crookwell; but his health did not permit of his engaging in squatting. The partners in Kerarbury may at some time have had a back-station on the Lachlan. But from all that I have been able to glean during the last thirty years, and from William Macleay's statement, "I resided for many years on the banks of the Murrumbidgee", I cannot avoid the conclusion that his primary, if not his only, interest in stations, or in establishing a station, was his ownership, or his partnership with others, of Kerarbury, with perhaps an unimportant back-station on the Lachlan, of which there is no mention in the prospectus prepared for the contemplated sale of Kerarbury. In other words, that his personal experience as a squatter was entirely confined to what he learnt

either as sole owner, at first when it needed developing, or as a partner in Kerarbury.

No autobiographical details of William Macleay's experiences during the first fifteen years are available. His only record bearing on the subject is given at the end of a paper read at a meeting of this Society on June 24th, 1885, in which he described two new species of freshwater fishes from the Upper Murrumbidgee, specimens of which had been sent to him by Mr. C. Jenkins, of Yass. One of these was referable to Castelnau's genus *Murrayia*, based on the study of three species from the Murray River or some of its anabranches. William Macleay after describing *M. jenkinsi*, n. sp., adds the statement—"the fish I have now described is the only one of the genus I have seen, although I resided for many years on the banks of the Murrumbidgee" (Proc., Vol. x, p. 269).

His continuous residence on the banks of the Murrumbidgee, save for occasional holiday or business visit to Sydney, lasted from the last quarter of 1839 or early in 1840 till his first election to Parliament in 1855. During this period he could not have seen very much of his uncle, who died in 1848. But that did not matter, because George Macleay soon became his guide and helper. Thereafter, up to about the time of his marriage in May, 1857, and his permanent residence in Sydney, he may have spent so much of his time in the metropolis as his Parliamentary duties allowed, returning to Kerarbury for the rest of the year or perhaps for an occasional visit.

The most important available sources of information concerning the early settlement of the valley of the Murrumbidgee, including references to the experiences of the Macleays are:

(1) "Reminiscences of Thirty Years' Residence (1829-59) in New South Wales and Victoria", by R. Therry, late one of the Judges of the Supreme Court of New South Wales (London, 1863).

Mr. Justice Therry has included in Chapter xv of his book (p. 259) the personal narrative of a prosperous squatter (name not disclosed, but evidently John Peters, often mentioned in Gormley's contributions) who came to Sydney from Scotland as a young man in 1832; and, impressed by "the kind and fatherly advice I received from Mr. (A.) McLeay, coupled with the high estimation in which he was universally held" became manager of one or other of Alexander Macleay's stations, first at Crookwell, between Goulburn and Yass, with 2,000 sheep; and then at Borambola on the Upper Murrumbidgee, between Gundagai and Wagga, with 30,000 sheep, and continued to act very successfully for fifteen years. Thereafter he became a squatter on his own account, with 1,000 picked ewes presented to him by Alexander Macleay "as a proof of his appreciation of the judicious manner in which I had managed his flocks." This interesting narrative incidentally mentions most of the troubles of the squatter in those early days.

(2) A short paper entitled "Exploration and Settlement on the Murray and Murrumbidgee", by James Gormley, M.L.C. (*Journ. Proc. Aust. Hist. Soc.*, Vol. ii, Pt. 2, p. 34. Read July 24th, 1906, but not published until 1909), from which some idea of the isolation of squatters and of the droughts and floods they experienced in the remote districts of the Lower Murrumbidgee in William Macleay's day, and of their difficulties in getting supplies from Sydney, in sending sheep and stock to market, and wool to the port of shipment may be gleaned.

(3) Three series of articles embodying the same author's "Reminiscences", contributed to the newspapers at Gundagai, Wagga and Albury, 1915-16, a short time before the author's death. A collection of the newspaper cuttings of these articles, bound in 3 volumes, is contained in the Mitchell Library. Some of these articles are included in "Exploration and Settlement in Australia", by the Hon. James Gormley, M.L.C. (Ford, Sydney, 1921).

Mr. Gormley's first paper, written after sixty-two years' residence on the Murrumbidgee, gives particulars of Alexander Macleay's station at Borambola, and a "back station", Pulletop, which George Macleay subsequently inherited, and George's station Toganmain, about 160 miles lower down the river. But there is no mention of William Macleay, apparently because he was one of "the many others" of whom the author says "I could mention many others, if I had space, who occupied stations down the river on the north side". In the later "Reminiscences" he gives some very interesting references to all three of the Macleays. J. Gormley, born in 1836, arrived in Sydney with his parents in 1840, assisted his father to drive stock from Illawarra to the Murrumbidgee towards the end of 1844, where his father settled near Gundagai, then the only town on the Murrumbidgee on the overland track from Sydney to Port Phillip, comprising about a dozen wooden houses, including a general store kept by Dr. R. Davison from 1841 onwards, probably then the only one between Yass and Melbourne.

Gormley's references to William Macleay are contained in Vol. II of the newspaper cuttings. The author says—"William and George Macleay were cousins and held the adjoining stations on the Lower Murrumbidgee." The author continues—"William Macleay without contest held the Murrumbidgee seat in five Parliaments, which gave him the record of being in the first seven Parliaments under Responsible Government. . . . William Macleay was associated with the town of Wagga from its earliest days (1847). When travelling from Sydney to Kerarbury Station, which was owned by himself and his brothers, he usually made a stay in Wagga."

The author continues—"William Macleay established the first newspaper, *The Express*, which was published and conducted by a man named Brown, who was afterwards engaged in the Government Printing Office in Sydney. William Macleay was a man of considerable ability; and as a politician always took an independent (stand). He took a keen interest in the progress of the electorate, and purchased land and planted a vineyard at Lake Albert. By his will he bequeathed a considerable part of his fortune to worthy public objects."

Mr. Gormley, in addition to carrying out mail-contracts for a number of years, was also a politician; he was a member of eight Parliaments, and afterwards a member of the Upper House.

In 1855, William Macleay was elected to Parliament, as Member for the Lachlan and Lower Darling in the old Legislative Council; and, on the inauguration of the New Constitution in 1856, he continued to represent the same electorate in the Legislative Assembly, until the removal of George Macleay to England in 1859, when William Macleay succeeded him as Member for the Murrumbidgee. On the dissolution of Parliament in 1874, he did not again offer himself as a candidate, as he was desirous of devoting more time to natural history and the development of his museum. During his twenty years of political life he held

his seat in seven consecutive Parliaments. He was appointed to the Legislative Council in 1875.

Sir Henry Parkes, Premier in 1887, conceived the happy idea of inviting the surviving Members of the first Legislative Assembly under the Constitution Act, opened May 22nd, 1856, to a commemorative dinner on May 23rd, to mark the thirty-first anniversary of Parliamentary Government. Sixty-two Members sat in the first Legislative Assembly, of whom twenty-one survived in 1887. Twelve attended the dinner. Nine, of whom three, including Sir George Macleay, were in England, were unable to be present. Among the memorials of William Macleay is a letter to him from Sir Henry Parkes, dated May 16th, 1887, asking him to speak to one of the toasts. The letter concludes with the sentiment—"I think you will agree with me that the occasion will be one of historic interest". A booklet containing the speeches, a group-photograph of the Members who participated, together with Press notices of the historic gathering, was issued soon after. We have a copy of this also. The group-portrait includes, among others, Sir Henry Parkes, Sir William Manning, the Hon. William Macleay, the Right Hon. W. B. Dalley, Sir John Robertson and the Hon. Sir John Hay. This group-portrait is of interest to us as a Society, because, besides William Macleay, both Mr. Dalley and Sir John Hay were Original Members of the Society; both were present on the occasion of the dedication of the Hall at Elizabeth Bay by William Macleay, for the use of the Society, on October 31st, 1885; and each of them delivered a speech.

William Macleay's election to the Legislature in 1855 necessitated his residence in Sydney during at least part of each year, while Parliament was in session. This also provided an opportunity of intermittently getting into touch again with William Sharp Macleay, and of seeing more of him than had previously been possible. About three years later, in June, 1857, he married Miss Susan Emmeline Deas-Thomson, second daughter of the Hon., afterwards Sir, Edward Deas-Thomson; and thereafter Sydney became his permanent home. He had now time to develop his scientific interests. In the year following, 1858, he set about beginning his collection, which fifteen years later amounted to 320 drawers. But even before he came to reside permanently in Sydney, there is evidence of his awakening interest in natural history.

William Macleay's residence in the country provided him with observational opportunities of learning something about the Blacks, and the conspicuous members of the fauna, such as the marsupials, birds, reptiles and fishes. He would probably have been shown Alexander Macleay's collection soon after his arrival in Sydney, and have helped William Sharp Macleay to unpack his collection and put it in order after the voyage. He might have been asked to collect insects for his relatives. On his occasional visits to Sydney, he would be able to report progress. William Sharp Macleay soon realized how little was known of the Australian fauna as a whole, for in his paper on Dr. Stuart's *Antechinus*, previously mentioned, dated Elizabeth Bay, August 9th, 1841, he says—"During a residence of two years in this colony, the experience of each day shows me that as yet but little is known of the productions of New Holland. The natural history of the interior of this vast island may be considered as altogether unknown; and with respect to the coast, we can only be said to be in considerable degree acquainted with the birds and phaenogamous plants of certain of its particular districts." It is reasonable to suppose, therefore, that

he would encourage his cousin, if he needed it, not only to cultivate the seeing eye and understanding mind, but also to make observations, for him at any rate, and to collect insects if nothing more.

Second Period, 1858-73.

The transition from squatter (sleeping partner) and Member of Parliament to entomologist with his own collection and, from 1865, the last male representative of the family name resident in Australia, with very favourable opportunities, which he did not fail to appreciate, of emulating his scientific predecessors and of upholding and enhancing the family reputation and traditions, the scientific successor to Alexander and William Sharp Macleay (whose joint collection he inherited), the occupant of Elizabeth Bay House.—1858: The beginning of William Macleay's active interest in entomology, with the encouragement and help of William Sharp Macleay.—The Elizabeth Bay property entailed; George Macleay, William Sharp Macleay's next of kin, having no inclination to become an entomologist, decided to return to England and settle there; his departure, in February, 1859, opened the way for William to become the prospective and eventual successor to the joint collections, and to the tenancy of Elizabeth Bay House.—1861: William Macleay elected to the Board of Trustees of the Australian Museum.—1862: William Sharp Macleay resigned from the Board, after twenty years' membership, on account of his steadily declining health; William decided to originate the Entomological Society of New South Wales, while his cousin was still alive and with his approval and support.—1865: William Sharp Macleay's death, on January 26th; William Macleay inherited the joint collection of his uncle and cousin; and after the renovation of the old house became its occupant for the rest of his life.—1869: The Entomological Society came to an end; the history of William Macleay's own collection, as gleaned from the Transactions of the Society.—1873: William Macleay's private offer to the Senate of the University to bequeath his library and the Macleay Collections contained in 800 drawers containing insects and marine invertebrates, with future possible additions to enable it to have an Academic Museum.

An enlightening clue to the significance of the date of the commencement of this period is afforded by a statement in a letter to the Senate, written towards the end of the year 1873, in which William Macleay offered to bequeath the Macleay Collections, together with his scientific library, to the University. In this, he said—"The collection which I have myself accumulated during the last fifteen years, is, as far as Australian insects are concerned, the best I know" (Barff's "A Short Historical Account of the University of Sydney", 1902, p. 120). Here, then, is his own testimony to the fact, that he began in earnest to acquire a collection of his own in or about the year 1858; and that, in 1873, it was the best collection of Australian insects known to him.

The next question is, what were the favouring circumstances in the year 1858 that led up to this determination? Suggestive clues indicate that about this time, a combination of favourable conditions offered incentives to him to make a start as a collector, and to improve his scientific library.

The most important provocations to action were—(1) William Macleay's permanent residence in Sydney; the resumption of his intercourse with William Sharp Macleay; and the opportunity of beginning his scientific career with the encouragement and under the guidance of his cousin.—(2) The prospective

departure of George Macleay to England, to settle there permanently.—(3) The periodical visits of Surgeon Rayner, R.N., of H.M.S. *Herald* during 1854-61, but especially from 1857-58 and later.—(4) The Rev. R. L. King's friendship with William Sharp and William Macleay, and his growing interest in entomology.—(5) William Macleay's friendship with A. W. Scott of Ash Island, which began with their association as Members of the First Legislative Assembly of 1856.

The most important of these was William Macleay's permanent residence in Sydney, and the opportunity of beginning work while William Sharp Macleay was able to help him.

George Macleay, in 1858, decided to return to England, to settle there permanently. If he had remained in Australia and taken an interest in natural history, the interesting question arises, whether William Macleay would have taken up entomology, or whether he would have turned his attention to some other branch of natural history. Perhaps he might even have turned his back on Science, and taken up something else.

The prospective removal of George Macleay to England, William Macleay's re-awakened interest in natural history, and his own declining health would lead William Sharp Macleay to consider the question of the future disposal of the joint Macleay Collections. And if so, to realize that if they were still further to be developed and made use of, the only hope of keeping up the family reputation and interest in Science was for William Macleay to join the succession.

After George Macleay's departure for England in 1859 to live there permanently, the brothers did not meet again. As William Macleay thus became William Sharp Macleay's nearest male relative and his oldest friend in Australia, it was natural that his cousin should be ready to encourage him by his advice and help, and by making his collections and library accessible to him, as frequent references in William Macleay's papers in the *Transactions of the Entomological Society of New South Wales* show that he did.

The eventual transference of the Macleay Collections to the University of Sydney, by bequest or by gift during the life-time of the owner, seems to have been a matter of mutual understanding between the cousins. William Sharp Macleay, as a Trustee of the Australian Museum at the time, would know that, in or about the year 1852, when the University was inaugurated, the Senate was desirous of having a Museum of its own, perhaps in anticipation of having a Medical School, and even went so far as to take preliminary steps to try and get one, as thus narrated in Etheridge's History—"An extraordinary request was received from the Secretary to the University of Sydney, by direction of the Vice-Provost, asking for a conference between Committees of the Senate and Museum respectively with 'a view of ascertaining upon what terms the Museum and grounds might be transferred to the University', and of course to ascertain primarily whether any proposition would be entertained by the Committee of the Museum". The Committee's reply was brief and to the purpose: "It was unanimously resolved that its acceptance would be detrimental to the interests of the Museum, whilst, moreover, it is one which the Committee, under its present constitution, is not competent to entertain" (Etheridge, Part ii, p. 366).

Another incentive was that as early as 1858, the Rev. R. L. King (1823-97), second son of Rear-Admiral King, was actively interested in collecting and studying insects. This is shown by his sketch of a Pselaphid beetle, dated "Parramatta, April 4th, 1858, R.L.K.", among the relics of William Sharp Macleay,

already mentioned. The sketch is drawn on the back of Mrs. Bobart's visiting-card. This recalls the fact that the Rev. H. H. Bobart, Incumbent of St. John's, Parramatta, and Head Master of the King's School, died suddenly in July, 1854, and that Mr. King succeeded him as Incumbent. Mr. King was a Trustee of the Australian Museum from 1848-57, and a friend, visitor to, and correspondent of William Sharp Macleay. He was also a friend of William Macleay, and they exchanged specimens. Mr. King mentions, in one of his papers, that, to the kindness of William Macleay his cabinet was indebted for many of its choicest Coleoptera. On the foundation of the Entomological Society of New South Wales in 1862, Mr. King became one of its most active supporters, was the second President, and the author of a number of papers. He was appointed to take charge of Moore College at Liverpool in 1868. But his duties and responsibilities in connection with the College prevented the continuance of his entomological work after 1869. Mr. Chris. King, son of the Rev. R. L. King, has kindly shown me a letter from William Macleay to his father, dated August 23rd, 1860, in which he says—"My cousin, W. S. Macleay, pronounced your 'Dopsa' an 'Helephorus' the moment he saw it; and on looking among the Helephoridae of Lacordaire this morning, I find your insect belongs most undoubtedly to the genus 'Ochthebius'. The species, of course, is quite new. I will, if you like, describe it." This letter is of interest for two reasons: It shows that William Macleay consulted William Sharp Macleay on moot points; and also that he was ready to describe insects as early as 1860, nearly two years before the establishment of the Entomological Society of New South Wales, when the Philosophical Society of New South Wales had not the resources to enable it to publish a scientific journal.

Another fruitful incentive to collect on his own account about this time was the periodical visits of Dr. Frederick Rayner, Surgeon of H.M.S. *Herald*, in command of Captain Denham, especially between 1857 and 1861. At a meeting of the Entomological Society of New South Wales on March 2nd, 1863, William Macleay described a new species of *Calloodes*, of which he says—"I have named this beautiful insect after my friend Dr. Rayner, R.N., who has been my companion in many delightful entomological excursions" (*Trans.*, Vol. i, p. xx). Also in another paper, read August 7th, 1865, published in the same volume (p. 221) he says of *Talaurinus Rayneri*, n. sp.—"I received this insect years ago from Dr. Rayner, R.N., who had taken it, I believe, somewhere on the West Coast." Here then is his own testimony to the fact that he went on collecting excursions with Dr. Rayner; and that the latter gave him a specimen which he described, probably one of many from distant localities visited by the donor.

H.M.S. *Herald*, in command of Captain Denham, arrived in Sydney, from England on February 18th, 1853. John MacGillivray, formerly of H.M.S. *Rattlesnake*, was the naturalist. At that time H.M.S. *Torch*, away on a cruise, was expected back. After her arrival, most of her officers and men were transferred to the *Herald*, and the *Torch* remained in Port Jackson. The *Herald* left, on her first cruise, to Lord Howe Island, Isle of Pines, and the New Hebrides, on September 2nd, 1853, and returned to Sydney on January 1st, 1854. Dr. J. Denis Macdonald, Assistant Surgeon, was one of the officers transferred from the *Torch*. But whether Dr. Rayner was also, or whether he came out from England in the *Herald*, I have not been able to ascertain. In a letter written

by MacGillivray to Sir W. J. Hooker after the return to Sydney from the first cruise, in January, 1854, he says, speaking of the visit to Lord Howe Island—"Our surgeon Mr. Reyner [Rayner], who is and has long been a zealous collector for Haslar Museum, volunteered to join my party, and of course Milne was with us" (*Lond. Journ. Bot.*, Vol. v, p. 279). While the *Herald* was in port in January, 1854, Dr. Stimpson paid a visit to the men of science on board on January 5th. The visit was returned on the following day, as narrated in Stimpson's journal.

The *Herald* visited Fiji in 1856, and returned to Sydney in 1857. During this visit Lieutenant Arthur Onslow, grandson of Alexander Macleay, came to Australia for the second time, for service on the *Herald*. In March, 1857, he joined H.M.S. *Iris* to take passage for the *Herald*, Captain Denham, surveying vessel on the Australian station. He was thus employed surveying Shark's Bay, and the numerous detached coral reefs on the East Australian coast outside the Great Barrier Reefs, and in Torres Straits. He returned to England in 1861, in the *Herald*, on the completion of her term of service. So also did Surgeon Rayner, for Mr. A. White exhibited a portion of Dr. Rayner's entomological collections at a Meeting of the Entomological Society of London on November 4th, 1861.

The *Herald* visited Sydney again in July, 1858. Dr. Rayner was present at the Meeting of the Philosophical Society of New South Wales on July 14th, when the second part of Dr. Roberts' paper was read. I have not been able to ascertain the dates of the subsequent visits of the *Herald* before she returned to England in 1861.

But from what has been said it is evident that the presence of Lieutenant Arthur Onslow on board the *Herald* afforded an additional interest to William Sharp and William Macleay in the cruises of the *Herald*; and that William Macleay's delightful entomological excursions with Dr. Rayner may have covered the period 1854-61.

William Macleay's excursions with Dr. Rayner would probably be chiefly in the vicinity of Sydney, possibly also to Brownlow Hill and Camden, Illawarra.

Once only did William Macleay find occasion to mention his experiences in collecting about Sydney in the first stage of his career. At the Meeting of the Entomological Society of New South Wales on February 2nd, 1863, it is recorded that "the President offered, for distribution among the Members, specimens of a *Bembidium* . . . which had been frequently found by him, and always in the same locality, in Middle Harbour. He had first seen the insect on the 10th October, 1861".

The earliest published record of William Macleay's interest in science before he began to specialize in entomology is his election to Membership of the Philosophical Society of New South Wales, at the Fourth Monthly Meeting held on 13th August, 1856, about a year before his marriage and residence in Sydney. This shows an awakening interest in natural history before he came to live in Sydney and before he began to specialize in entomology.

At the Fourteenth Monthly Meeting on 14th October, 1857, Dr. Alfred Roberts read Part i of a Paper "On the Poison-apparatus of Venomous Snakes", which was published in the *Sydney Magazine of Science and Art* (Vol. i, 1858, p. 130) under the title "On the Structure and Functions of the Venom Apparatus in Serpents". The author says—"The present mode of classification (of the Order Ophidia) is well exemplified in the following table, for which I am indebted

to the kindness of Mr. Wm. Macleay, who abridged it for me from the valuable work of Dumeril and Bibron. In his opinion, it is far the best, as it is the most simple, that has been hitherto published." The second part of the paper was read at the Nineteenth Monthly Meeting on July 14th, 1858, under an amplified title "On the Structure and Function of the Poison Apparatus in Venomous Serpents with a Description of some of the Species found in Australia". The paper was illustrated by numerous specimens, both living and preserved, and by drawings. The author says—"All the land snakes of this colony are described from fresh specimens, the water snakes from specimens in spirits, with which I have been kindly favoured by W. Macleay, Esq., Dr. Rayner, J. D. Macdonald Esqr., and the Rev. W. W. Campbell." In Maiden's "Contribution to a History of the Royal Society of New South Wales" (*Journ. Proc. Roy. Soc. N.S. Wales*, Vol. lii, 1918, p. 272) it is stated that the paper was illustrated by drawings by Dr. MacDonald of H.M.S. *Herald*. When the second part of the paper was read, Dr. Rayner was present, and exhibited some living specimens of marsupials in cages which he had brought from Western Australia.

In the absence of the President, Sir John Young, successor to Sir William Denison, from the Fifty-seventh Meeting on May 27th, 1863, William Macleay was voted to the Chair. He laid on the table a copy of Vol. i of the *Transactions of the Entomological Society of New South Wales*. At this Meeting also Mr. Krefft read a paper "On the Reptiles found near Sydney".

Having made a good start, another incentive to continue was his election to the Board of Trustees of the Australian Museum on 7th March, 1867, *vice* Sir William Denison, who left Australia to take up Vice-Regal duties in India. This official association with the governing body of the Australian Museum would be likely to stimulate his interest in natural history generally.

Before July 23rd, 1861, he had acquired an important collection made for him at King George's Sound, by Mr. Damel. On the date mentioned, he had living specimens of the larvae of *Charagia scripta* undergoing their metamorphoses in the roots of a *Leptospermum*, as mentioned in William Sharp Macleay's letter to Miss Scott. Damel, therefore, made the collection during the season, 1860-61. The resulting collection was the first large, as far as possible, exhaustive collection made in a definite area outside New South Wales, which came into William Macleay's possession.

He had also received a large number of insects from the Rockhampton district, collected by Mr. W. S. Wall (1814-76), who retired from the Curatorship of the Australian Museum on account of ill-health on December 31st, 1858. Shortly afterwards Wall visited Queensland for a change and spent some time in collecting in the neighbourhood of Rockhampton. Some of the material obtained was disposed of to the Australian Museum and some to William Macleay and possibly to others. Among the relics of William Macleay is an order for the payment of a sum of money to a representative in Sydney dated from Rockhampton, January 13th, 1860, and signed by W. S. Wall. On the back of this in William Macleay's writing is a list of eight sums of money (including the amount on the order mentioned). These evidently correspond to a list, on a loose sheet, of eight boxes of "insects from Rockhampton" also in William Macleay's writing, of which the last two were received in January and March (1860), with the numbers of the insects in each box, the total being 4,610.

Up till the year 1860, William Macleay's collection was the result of his own efforts, chiefly in the neighbourhood of Sydney, or in localities a little more remote, together with exchanges or gifts from his friends. But in the year mentioned, he began to supplement his own efforts, by sending expert collectors to distant localities. Of the first two collections made in this way, in 1860-61, and 1861-62, one had been in his possession for about a year and the last instalment of the second was expected when the inaugural Meeting of the Entomological Society of New South Wales was held. Other collections were obtained from temporary or permanent collectors living in distant localities. Alexander and William Sharp Macleay had had little or no opportunity of getting such complete collections from definite areas as some of these. It was the acquisition of large collections of this sort, supplemented by his own efforts and the co-operation of friends, that enabled him to say in 1873 that his Australian entomological collection was the best that he knew of.

The only original letter written by William Sharp Macleay that I have seen, is one to Miss Harriet Scott of Ash Island, dated 23rd July, 1861. It is a long letter in reply to an inquiry of Miss Scott about the nomenclature of the species of *Charagia*, whose larvae are lignivorous.

But in the course of his remarks the writer says—"You have got a new and fifth species under the name of *C. Ramsayi*; and my cousin has given me the ♀ of another quite new and sixth species from King George's Sound under the name of *Charagia scripta* Macleay Junr. MSS. It has the silver spots like letters, and small, instead of being large and round, as in *C. Ramsayi*. My cousin will, I am sure, be happy to show you ♂ ♀ larva and chrysalis, of this K.G. Sound species. He has the larvae now alive in the roots of a *Leptospermum*." Mr. Scott, about six years later, described the species in his paper "On the Genus *Charagia* of Walker", in *Trans. Ent. Soc. N.S. Wales*, Vol. ii, p. 34, and adds—"Several chrysalids in the wood were brought from King George's Sound, Western Australia, in 1861, for W. Macleay Esq., of Elizabeth Bay; and in whose collection the perfect insects are; from these specimens the foregoing description has been taken." The paper was read on 2nd September, 1867.

The specimens were collected by Mr. Damel, and formed part of a collection which is referred to three times by William Macleay (in *Trans. Ent. Soc. N.S. Wales*). Of *Macrothops rostrata*, n. sp., he says—"I received three specimens of this very remarkable insect from King George's Sound, and it was the only Glaphyrideous species I got from that settlement, out of a very large collection" (Vol. i, p. 90). Of *Talaurinus damelii*, n. sp., he says—"I name this species after Mr. Damel, who made a fine collection of the insects of King George's Sound for me a few years ago" (in 1860-61, as we learn from Mr. Scott's paper: Vol. i, p. 242. The paper was read 7th August, 1865). Also of *Platylytron amplipenne*, n. sp., he says—"I received several specimens of this insect from King George's Sound some years ago" (Vol. ii, p. 328).

This collection was the first important collection of Australian insects acquired by Sir William, of which there is a definite record.

At the third meeting of the Entomological Society of New South Wales, on July 7th, 1862, William Macleay introduced Mr. Damel to the Members as having just returned from the Feejees, after a year spent in the collection of objects of Natural History in these Islands. But whether all or any of this

collection was acquired by him or, if otherwise, what became of it, is not known to me.

At the same Meeting William Macleay "exhibited a number of new species belonging to the families Cicindelidae, Carabidae, Anoplognathidae, and Cetoniidae", together with some new or previously unrecorded Lepidoptera, which he had just received among a large collection of insects from Port Denison, obtained for him by Mr. Masters, whom he introduced to the Members. The accumulation of this fine collection was the beginning of George Masters' collaboration with William Macleay in carrying out his zoological enterprises, eventually of so much importance; and came about in a very simple way.

George Masters (1837-1912) emigrated from England to Melbourne about 1856 or 1857. He was an expert gardener, who, in his leisure, had become interested in Natural History. For two years he was employed by Dr. Godfrey Howitt, then practising medicine in Collins Street, an enthusiastic entomologist and owner of a collection, which he eventually bequeathed to the University of Melbourne. Masters then visited Tasmania for a time, and made a collection of insects, which subsequently William Macleay purchased. He next came to Sydney in about 1859, and obtained employment at Shepherd's Darling Nursery. He utilized his leisure, as far as possible, in collecting insects, or in visiting the Australian Museum to see the entomological collection in the hope of ascertaining the names of his specimens. Finding that some of those on view were, as he thought, incorrectly named, he made himself known to the Curator, Mr. G. Krefft, and pointed out certain mistakes, and was thanked for his trouble. At this time, of course, the Curator, who was not an entomologist, was the only scientific member of the very limited staff. About this time, William Macleay asked Mr. Krefft if he could recommend someone who could undertake collecting for him. Mr. Krefft replied that a young man, who frequently came to the Museum in search of names for his specimens, would perhaps be suitable; and offered to arrange for an interview. The interview was satisfactory, and Masters was despatched to Port Denison. An attack of malaria somewhat hastened his return, but William Macleay was well pleased with the results. This was the second special addition to his collection, and some of it inspired the first of his papers contributed to the Entomological Society of New South Wales.

At the beginning of the year 1862, William Macleay was not only ready to begin descriptive work, but had determined to arrange for its publication, even if this involved financial responsibility.

Contributory factors to this advance were, that he had now had about four years' experience of systematic collecting in the vicinity of Sydney, and to some extent outside the County of Cumberland; and that the resumption of his friendly intercourse with William Sharp Macleay afforded opportunities for a comparative study of his own steadily growing collection and of William Sharp Macleay's collection, to which he now had access, as well as of discussing his experiences and his acquisitions with his cousin. Evidence of this is furnished both by William Sharp Macleay's letter to Miss Scott (Part I of this Address, PROCEEDINGS, 1920, p. 625), and by his remarks on, or exhibits of, specimens in William Sharp Macleay's cabinet or collected by the latter, at early Meetings of the Entomological Society of New South Wales, during William Sharp Macleay's life-time.

As a matter of fact, William Macleay was ready to make a start in 1860, as indicated in a letter from him to the Rev. R. L. King, for which I am indebted to Mr. Chris. King, son of the recipient of the letter. This letter is the only one from William Macleay to any of his scientific correspondents, that, to my knowledge, has been preserved. It is, therefore, of special interest. . . .

"Sydney, 23rd August, 1860.

"My dear King.

"My cousin, W. S. Macleay, pronounced your 'Dopsa' an 'Helephorus' the moment he saw it; and on looking among the Helephoridae of Lacordaire this morning, I find that your insect belongs most undeniably to the genus 'Ochthebius'. The species, of course, is quite new. I will, if you like, describe it, and call it Kingii.

"I never saw the genus 'Dopsa', but the next genus, 'Eumolphis', I have seen, and it has no resemblance to 'Helephorus'. Dopsa is trimerous, I fancy. The Helephoridae are pentamerous, though the first joint is sometimes so short as to make them appear tetramerous.

"I should like to know something more of the habitat, and mode of catching the insect.

Yours sincerely, William Macleay."

From this letter it appears that the Rev. R. L. King had sent William Macleay a specimen new to him, with a request for identification; and that, not recognizing it, William Macleay submitted it to his cousin. Unfortunately no letters from the Rev. R. L. King to William Macleay, nor from any other of the latter's early scientific correspondents, have been preserved.

Nothing came of the offer to describe Mr. King's insect. One reason for this may have been that there was then no scientific journal published in Sydney. Another may have been that the Rev. R. L. King was not quite ready to begin descriptive work. The first paper contributed by Mr. King to the Entomological Society of New South Wales, "On the Pselaphidae of Australia", was read on November 3rd, 1862, but some of the specimens—a group in which he had for some time been interested, as indicated by the sketch of a Pselaphid, dated 1858, sent to William Sharp Macleay—had been collected at Parramatta only in July-September of the same year. Before the date of this paper, William Macleay and Mr. King had been exchanging specimens, because, of one of the new species described, the latter says—"I have named it after W. MacLeay Esq., M.L.A., to whose kindness my cabinet is indebted for many of its choicest Coleoptera" (**Trans.*, Vol. i, p. 41).

The Entomological Society of New South Wales was initiated at a preliminary Meeting held on April 7th, 1862. The circumstances which culminated in this enterprise have an inner meaning, which is not hard to find.

The progress of our knowledge of the Australian fauna presents two stages. The first is represented by the work of European or other non-Australian zoologists upon collections taken to Europe by the early navigators or voyagers, or taken home by residents or visitors in the early days of settlement. The zoologists who described the specimens too often suffered from the disadvantages of having

* This and succeeding similar references are to *Trans. Ent. Soc. N.S.W.*

incomplete collections, which were not representative of the fauna of definite areas, as well as from having no personal knowledge of the animals under natural conditions; they also often had a very vague knowledge of the geography of Australia.

The second stage began when zoologists in Australia, with personal knowledge, commenced to take up the study of the fauna. Their chief drawbacks were, that the collections containing named or type-specimens were too far away to be consulted; that, at first, scientific libraries here were very inadequate for their needs; and that there was so little opportunity for cultivating a taste for zoology, except as a hobby, in one's leisure.

When the Entomological Society of New South Wales was instituted, the Museums in Sydney, Melbourne, and Adelaide, had no scientific staff except the Curator or Director, whose attention, quite naturally, was claimed chiefly by the Vertebrata, or, in addition, by some of the more conspicuous Invertebrata other than insects.

Early in 1862, William Macleay had evidently arrived at the conclusion that the time was ripe for inaugurating the study of entomology in Australia, and that Sydney was the proper place to make a beginning, because the collections of Alexander and William Sharp Macleay were here, and these contained many named specimens, some of them type-specimens. William Sharp Macleay's scientific library was also in Sydney, and William Sharp Macleay himself was here; though his working days were over, and his health was manifestly on the decline, his advice and guidance were still available. William Macleay had been accumulating a collection for about four years, and was ready to begin descriptive work, but did not wish to go alone. The Philsophical Society of New South Wales had not the resources to enable it to publish a journal. Even if it had been able to do so, the journal would hardly have been a suitable medium for the publication of technical entomological work. William Macleay knew what residents of Sydney were interested in zoology, and especially in entomology, and, as the first step in organizing local effort, he arranged for holding the preliminary Meeting on April 7th, 1862.

Up till 1918, the fate of the Minute Book of the Entomological Society of New South Wales was unknown, and it was supposed to have perished in the fire which destroyed our Society's early official records, in 1882. It was unexpectedly unearthed in the strong-room of the Australian Museum, and was thoughtfully restored to us by the Curator, on behalf of the Trustees. When the Entomological Society ceased to hold formal Meetings, after that of February, 1869, Mr. Krefft was Honorary Secretary; he retained the Minute Book, and its existence or its whereabouts was forgotten.

The Minute Book contains some important supplementary information about the Meetings, which is not given in the printed *Transactions*. The Inaugural Meeting on April 7th, 1862, was held at William Macleay's residence, 153 Macquarie Street. Eight gentlemen were present—William Macleay, Dr. Alfred Roberts, H. F. Schrader, G. Krefft, E. P. Ramsay, W. J. Stephens, J. B. Turner and Dr. J. C. Cox, the record being in the handwriting of Dr. Cox, and the order of the names as given. The first resolution carried was that Mr. Macleay take the chair. The second, that the Society be established. The third, that Mr. William Sharp Macleay be appointed Honorary President. He, however, subsequently declined official responsibilities on account of his failing health, but was ready

to become a member. William Macleay was accordingly elected President. The record of this first Meeting ends with the unpublished statement that—"A vote of thanks was unanimously given to Mr. William Macleay for his duties as Chairman, and for having been the originator of the Society". From this it is evident that William Macleay was behind the enterprise and was the moving spirit. The Rev. R. L. King and Mr. A. W. Scott, on whose co-operation he was relying, were unavoidably absent, as they lived out of Sydney, but he was relying upon their assistance, which was forthcoming at a later stage when wanted.

Before summarizing the work accomplished by the Entomological Society of New South Wales, William Macleay's efforts to enlarge his collection during the period commencing with the establishment of the Society in April, 1862, and ending with the year 1873, may first receive consideration. Before this period, the insect-fauna of the vicinity of Sydney (County of Cumberland), although it was the earliest Australian settlement, was very imperfectly known. The early European entomologists had studied miscellaneous collections, usually comprising specimens from many distant localities; and the habitats recorded were often vague. Consequently there was a lack of papers dealing exhaustively with the fauna of definite areas.

The establishment of the Entomological Society of New South Wales was important, because it brought together not only those interested in entomology who resided in Sydney or within reach of it, but others interested in natural history, who were glad of an opportunity of learning more about one little-known branch of the fauna. It concentrated attention on a class which previously had received little more than unrelated, individualistic consideration. It greatly stimulated collecting, provided opportunities for the exhibition of collections and of discussions thereon, and prepared the way for exchanging specimens.

Moreover, after his return from Port Denison in July, 1862, and the completion of his engagement in regard thereto, George Masters decided to become a practical entomologist, and to devote his time to general collecting, probably with the encouragement of William Macleay. This he did assiduously, up to the time of his appointment to the Australian Museum in June, 1864. He also joined the Entomological Society of New South Wales, and from January, 1863, onwards, regularly exhibited rare or remarkable specimens, or fine collections. His exhibits greatly contributed to the interest of the Meetings. In his second Presidential Address (on March 7th, 1864) William Macleay said—"I cannot permit this opportunity to pass without expressing the obligations which the members generally are under to Mr. Masters, for the exhibitions, at each monthly meeting, of his rare and beautiful collections."

As William Macleay's collection began to improve by the additions of gifts from or exchanges with his fellow-members, and by his acquisitions from Masters, as opportunity offered, he began to go further afield to collect.

The localities in which William Macleay collected, as mentioned in one or other of his papers, include: Camden and Brownlow Hill, Illawarra (Wollongong, Mt. Kembla), Lower Murrumbidgee (Kerarbury, near Burrabogie, Wagga, Lake Albert), Upper Murrumbidgee (Yass), Mundarlo and Tarcutta, Wingelo, Shelley's Flat, Queanbeyan and Monaro districts, Murrurundi, Bathurst and Currajong.

There are fuller particulars of his collecting excursions to localities still more remote from Sydney. At this time, it is to be remembered that the first railway to Parramatta, 15 miles, had been opened in September, 1855; but that the

southern extension to Goulburn, 140 miles, and the western extension to Mt. Victoria, 79 miles, were not opened until May, 1868, and May, 1869, respectively; and to Wagga, 309 miles, in September, 1878.

William Macleay made two visits to Kerarbury, the station in which he was interested, on the Lower Murrumbidgee, between Narrandera and Hay, in August, 1864, and in the spring of 1872. His records of these visits are given in *Trans. Ent. Soc. N. S. Wales*, Vol. i, p. xxxix; Vol. ii, p. 338. The first is the notice that at the meeting on September 5th, 1864, "Mr. MacLeay exhibited forty-six species of Carabidae, taken by himself during the previous month, on the Lower Murrumbidgee". From the then railway-terminus, these journeys were made in his own wagonette or in hired vehicles, travelling by day, and putting-up for the night at the road-side inns. In this way, opportunities were afforded of collecting at intermediate places, as, for example, at Wingelo, Shelley's Flat, near Goulburn, Yass on the Upper Murrumbidgee; and, on the Lower Murrumbidgee, at Lake Albert and Burrabogie near Wagga, Mundarlo, Tarcutta, and finally at Kerarbury. Insects from all these localities were described in his various papers.

Other excursions were to the Queanbeyan and Monaro districts in January, 1870; Murrurundi, with George Masters, in the summer of 1872; Bathurst, Piper's Flats and Blue Mountains, also in the summer of 1872.

Of the first of these, he says: "In the month of January, 1870, I made a hurried entomological excursion into the Queanbeyan and Monaro districts. I was accompanied by Mr. Masters, of the Australian Museum, by whose assistance, notwithstanding the intense heat and dryness of the season, I was enabled to add a number of new and interesting species to my own as well as to the public collection" (*Trans.*, Vol. ii, p. 319).

Collecting was carried out at the Umeralla River, the Queanbeyan River, and on the Downs beyond Cooma, and in the vicinity of Spring Flat. Among the captures then made, there were "two species of small Carabideous insects which peculiarly interested me. One of these has since been described by H. W. Bates, Esq., in the 'Entomologists' Monthly Magazine' for July, 1871, under the name of *Eudalia Macleayi*."

This remark is of interest because it shows that soon after his return from Monaro, William Macleay was corresponding with Bates in England, and sending specimens to him.

A still earlier English correspondent with William Macleay was F. P. Pascoe. In a paper read at a Meeting of the Entomological Society of London, on July 6th, 1863, Pascoe acknowledges the receipt of an extensive collection of Australian Longicornia, including specimens of thirty species new to him, "that I recently received from Wm. Macleay Esq., M.L.A." (*Trans. Ent. Soc.*, (3), Vol. i, p. 526). Unfortunately no letters either from Pascoe or Bates were preserved.

As soon as the Entomological Society of New South Wales began to publish its *Transactions*, the interest of entomologists in some of the other Colonies was aroused. Some of them joined the Society, and the local members, particularly William Macleay and the Rev. R. L. King, began to correspond and exchange with them, and in some cases to describe their specimens. These included Dr. Godfrey Howitt (ob. 1873) of Melbourne, and Mr. H. Edwards of Ballarat; Messrs. F. G. Waterhouse, G. F. Angas, and J. Odewahn and Mrs. Kreuzler of South Australia; and Mr. S. Diggles of Brisbane.

Before January 5th, 1863, William Macleay was in correspondence with Dr. Howitt, and had received a collection from Melbourne, as mentioned in the first

of his four papers on the Scaritidae, read on the date mentioned. In his paper on the Amycteridae, read on August 7th, 1865, acknowledgments of the receipt of a number of the insects described, from Dr. Howitt, are recorded. William Macleay says of the type of *Psalidura subvittata* (p. 212): "Dr. Howitt captured one specimen of this insect near Ipswich a few weeks ago." This statement may be taken to imply that perhaps on the way to Queensland, as well as on the return journey, Dr. Howitt called at Sydney, made the acquaintance of William Macleay, saw the Macleay Collections, and exchanged specimens.

At the fourth meeting of the Entomological Society of New South Wales, on August 4th, 1862, "Dr. Cox stated that he had received a letter from Mr. (Henry) Edwards of Ballarat, expressing his wish to enter into a system of exchange with any of the members of the Society." William Macleay possibly did respond to this invitation, but there is no record of it in the *Transactions*. Subsequently Mr. Edwards returned to the United States and, as narrated later, for some years after 1874 regularly exchanged with William Macleay. The Rev. R. L. King exchanged with Dr. Howitt and Mr. Edwards, and described species from their collections, as mentioned in his second paper on Pselaphidae (*Trans.*, Vol. i, p. 167). In this paper also, Mr. King described specimens sent by Count de Castelnau, who came to Melbourne in 1863. At a later date, Count de Castelnau corresponded with William Macleay, and visited him in Sydney, and exchanged, as mentioned further on. But there is no record of their correspondence in the publications of the Entomological Society of New South Wales.

In his second paper on the Scaritidae, read on March 7th, 1864, William Macleay described a number of new species from a collection sent by Mr. F. G. Waterhouse of South Australia to Mr. E. P. Ramsay. This led to exchanges with Mr. Waterhouse, as mentioned in William Macleay's third paper on the Scaritidae, read on March 6th, 1865. Of the type-specimen of one of the species described, William Macleay says: "It is one of the many rare things, for which I am indebted to F. G. Waterhouse, Esq., of the South Australian Institute", afterwards the South Australian Museum. As mentioned later, important exchanges other than of insects, were carried out regularly for some years.

George French Angas, Secretary of the Australian Museum from July, 1853 till February, 1860, subsequently removed to South Australia. In his paper on the Amycteridae, read August 7th, 1865, William Macleay says of two of the type-specimens described in the paper, "I have named the species after G. French Angas, Esq., from whom I received this among many other of the insects of South Australia", and "This insect was sent to me from Adelaide some years ago by G. F. Angas, Esq." (*Trans.*, Vol. i, pp. 258, 286).

Mr. Johannes Odewahn, of Gawler Town, S.A., sent specimens of Scaritidae to William Macleay. Three references to these are given in William Macleay's fourth paper on the Scaritidae, read on September 6th, 1869, one of which is, "I am indebted to Mr. Odewahn for this (the type-specimen of *Carenium nitescens*) as well as many other of the South Australian species of Scaritidae" (*Trans.*, ii, pp. 65, 68, 70); the other two are in his last paper, "Miscellanea Entomologica", read July 7th, 1873 (*Trans.* ii, pp. 325, 348).

Mrs. Kreuzler, also of Gawler Town, exchanged with Mr. Odewahn, and also with the Rev. R. L. King, who described specimens from her collection.

Mr. Silvester Diggles, of Brisbane, also sent or loaned specimens to William Macleay. There are three references to these in William Macleay's fourth paper on the Scaritidae (*Trans.*, ii, p. 61), and one in the "Miscellanea Entomologica"

(ii, p. 326). The second of these is, "The only specimen I have seen was sent from Brisbane by Mr. Diggles, with a number of Coleoptera, many of which were not Queensland insects" (p. 67).

An important addition to William Macleay's collection, about 1866, was one made at Port Denison and Cape York by Damel. All the available particulars about it are the following: At the meeting on June 4th, 1866, "Mr. Macleay exhibited four Lepidopterous insects which he had taken out of a collection sent to him by Mr. Damel from Port Denison. He said that he had selected them, as they were insects rarely met with in collections, and would most probably be new to the Members present" (*Trans.*, i, p. lviii). At the same meeting a new species of *Tetracha* from the same collection was described. Five species were described from Cape York in his fourth paper on the Scaritidae (p. 69), and in the "Miscellanea Entomologica" (pp. 323, 335), respecting one of which it is stated, "Among a number of new and very interesting Coleoptera brought by Mr. Damel from Cape York some years ago, was an unique specimen of a very remarkable and gigantic Carabideous insect" (p. 335).

Third and Closing Period, 1874-91.

The transition from working zoologist intent on improving his museum, to promoter and benefactor of Natural Science in New South Wales: "our most munificent patron of science and chief benefactor of higher education" (W. B. Dalley, 1887).—The keynote to this period is the reason for his resignation from Parliament, as given to his constituents—"I intend to give my attention henceforth entirely to Natural History, and the improvement of my museum" and, had he known what was awaiting him as the result of the establishment of a Natural History Society he might have added, to help to put the Linnean Society of New South Wales on its feet, as the first step to its becoming a going and lasting concern.

Information Chiefly Obtained from William Macleay's Journal During the Years 1874-1882.

1874.

Five important events: (i) William Macleay appointed George Masters Curator of his museum on Feby. 6; their joint efforts, with the assistance of J. Brazier and E. Spalding for part of the year, to improve the museum—(ii) March 28th. The public announcement by the Chancellor of the University of the Senate's acceptance of William Macleay's offer to bequeath the Macleay Collections and his library—(iii) April 6th-June 8th. Visit of H.M.S. *Challenger* on a circumnavigating voyage, with a scientific staff under the leadership of Professor Wyville Thomson; its stimulating effect on the zoologists of Sydney—(iv) September-October. The unexpected proposal to establish a Natural History Society, and what came of it—(v) November 28th. Parliament dissolved; William Macleay's retirement in order to devote his time to the study of natural history and the improvement of his museum.

(i). Appointment of G. Masters as Curator.

In William Macleay's letter to the Senate, written towards the end of 1873, he said: "The Zoological collection which I leave to the University comprises very few specimens of the vertebrate animals, and except so far as Australian species

are concerned, it is not likely that I will attempt to add to it." This statement implies that he intended to improve the collection by the addition of Australian vertebrates, and possibly others. Having committed himself to this definite offer, he began to realize that he would need the help of a permanent assistant. He decided, therefore, to appoint a Curator of the collections; and to advertise for applications for the position. In the meantime, William Macleay happened to see G. Masters, who expressed himself as very much dissatisfied with the conditions at the Museum and talked of resigning. William Macleay notes this in his Journal of January 20th, 1874, and adds—"If he does, I shall at once engage him for my collection." At this time the relations between the Curator and his assistants were becoming very strained, as they became soon after with the Trustees.

On January 23rd William Macleay noted in his Journal that Masters had sent in his resignation as Assistant Curator of the Australian Museum. Also that—"I feel myself at liberty now to offer him £300 a year to assist me (when he is free) with my collection, with a promise of his having the curatorship of the Macleayan University Museum on my death, at the same salary. I shall take every opportunity of enlarging the Collection in all branches of Natural History, but I shall chiefly strive for excellence as a Museum of 'Animalia invertebrata' ". Masters accepted the offer, and entered upon his new duties on February 6th. The Journal adds that, after settling preliminaries "Our chief work to-day was getting books in order for the binder."

The appointment of G. Masters as Curator of the Macleay Collections was of the greatest importance, as the preliminary step towards their improvement. Henceforth, as long as it was necessary, William Macleay devoted the mornings, and, when he could, the afternoons, to co-operative work with his Curator. Both were keenly interested in the work ahead of them and they worked together most harmoniously. Their first year's co-operative or individualistic efforts, with the assistance of J. Brazier and E. Spalding for part of the year, and supplemented by the spontaneous help of friends, may be considered under the following heads: (1) Routine work—(2) Marine collecting: (a) Shore-collecting in Port Jackson, and at Bondi after gales; (b) four weeks' systematic dredging in Port Jackson, and between and outside the Heads; (c) the ketch *Peahen* was chartered for two months to enable J. Brazier and an assistant to collect and dredge at Jervis Bay and Port Stephens; (d) five "Fishing Picnics"—(3) Land-collecting: (a) between Bondi and Botany Bay; (b) in the old garden, then intact; (c) two country excursions, one to Wagga, the other to Gunning; (d) E. Spalding engaged for six months to collect at Port Denison—(4) Exchanges—(5) Donations—(6) Purchases.

(1) *Routine work.*—(a) The scientific library, comprising about 2,000 volumes, first received attention. Unbound volumes and Journals issued in parts, were collected and sent to the bookbinder. Orders for additional books, including ten missing volumes of the *Transactions of the Linnean Society of London*, a complete set of the *Proceedings and Transactions of the Zoological Society*, the scientific portion of the "Voyage of the *Novara*", and other important books were sent to a bookseller in London. (b) New cabinets were ordered; supplies of glass jars, bottles and tubes were obtained in Sydney, or ordered in quantity from England; spirit, tanks for large specimens in spirit, corks, pins (6 lbs.), glass-topped boxes, and other accessories were provided. Equipment for marine collecting "when the weather becomes cooler" was got together. (c) Much time was spent in naming and putting newly acquired specimens into the cabinets, in re-arranging the contents of drawers and cabinets, in putting away duplicates, and in overhauling

and fumigating the contents of the 320 drawers containing William Macleay's collection, as some of them showed traces of *Anthrenus*. The Diurnal Lepidoptera, with the exception of the Hesperidae, in the old collection were taken out in instalments of about 100 at a time, relaxed, re-set, and put away again. This work, for part of each day as far as possible, was begun on February 7th and completed on April 2nd.—(d) On April 17th the task of amalgamating the Macleay Collections was taken in hand. The record is—"Masters and I sorted our collection of yesterday (marine forms obtained at Shark Island) in the forenoon; and, in the afternoon, moved some specimens of Australian Coleoptera from W. S. Macleay's cabinets to my cabinet of Australian Coleoptera. I have determined now, as the two collections are going the same way, no longer to keep them separate, but to have the one collection only, known as the Macleay Collection. The Australian insects being more complete in my cabinet, I intend to use it for that purpose, while the foreign insects, for a similar reason, I will accumulate in W. S. Macleay's cabinets" (that is, the cabinets of the joint collection of A. and W. S. Macleay).

The amalgamation of the Macleay Collections, begun in April, was continued intermittently throughout the year. The Coleoptera, commencing with the Scaritidae and Buprestidae, first received attention. In September, the Diurnal Lepidoptera were taken in hand; and in November, the Lepidoptera Heterocera. The species represented in the amalgamated Collection were then marked off in British Museum or other Catalogues, and lists of desiderata were prepared. On October 2nd, William Macleay notes in his Journal—"Masters and I were employed all day at the Butterflies, and made a good deal of progress. I was astonished to find the W.S.M. [W. S. Macleay] Collection very deficient in some groups of the Papilionidae, particularly in the South and Central American things." On October 14th, after the Papilionidae (12 drawers) and the Pieridae had been finished with, he notes—"I made a list of all my desiderata among the Papilionidae, a much longer list than I anticipated. I shall send it to some man in London, who can purchase specimens as they turn up; but many I shall never get." An order for some of the desiderata was afterwards sent to Boucard (*postea*).

Other preliminary routine work. Alexander Macleay's Collection seems to have comprised insects almost exclusively. But William Sharp Macleay's Collection, when he brought it out from England, was a collection of Annulosa, including the Classes Insecta, Myriapoda, Arachnida, and Crustacea. Such of the specimens as were small, or in tubes in spirit, doubtless occupied some of the 480 drawers. But, in addition to these, William Sharp Macleay accumulated a considerable miscellaneous collection of specimens, after he came to Australia, which were not in the cabinets; and were not mentioned in William Macleay's letter to the University. One reason may have been that some of them were not labelled; others were, and had been for a long time, in spirit; and, in so far as they were common or easily procurable specimens, could be replaced by better specimens without much trouble. There are three references to these specimens in the Journal. At this time, William Sharp Macleay's collection and William Macleay's collection were kept in separate rooms. On March 2nd, the record begins—"Masters and I laid out about 90 Butterflies (for relaxation and resetting), and, in the afternoon, we made a commencement of looking over and rebottling the snakes, lizards, &c., which have been bottled up in the collection for many years. They are heaped together without any order, and there is no indication of name

or country." "March 20th—In the afternoon, we looked over, sorted, and packed away a heap of shells and corals which had, for long, encumbered this room." On 8th April—"Masters and I employed ourselves all the forenoon in sorting and rebottling all the things lying about in the W. S. Macleay room", no doubt the "Mr. William's room", mentioned in J. D. Hooker's letter to his father (Proc., 1920, p. 589). On 9th April—"Masters and I were employed all day in regulating the mixed heap of minerals, shells, bottled animals, and bones upon the shelves in my room. We rebottled and respired most of the things. To complete the work will take some days." "April 11th—Masters and I were engaged till 12 o'clock in arranging the bones, fossils &c., on the shelves." "July 22nd—This afternoon while looking out cases for the books (to be sent to England) I came across shells, fossils, &c., in a recess under the stairs." And on the following day—"Masters and I, in the morning, looked over and sorted the shells, fossils, minerals, &c., found in the recess yesterday."

(2) *Marine collecting.*—(a) *Shore-collecting in Port Jackson, and at Bondi, etc.*—One of the most important co-operative enterprises of William Macleay and Masters during 1874, was the inauguration of systematic marine collecting, especially in Port Jackson. Considerable progress was made before the year ended by their own efforts, as well as in other ways. The earliest reference to the subject in the Journal is—"March 9th. I ordered to-day, at Lassetter's, a small steel crowbar, chisel, and hammer, so as to be fully equipped for the collection of marine animals when the weather gets cooler." The first attempt was made on March 27th—"Masters and I spent an hour this morning on the beach, and made a considerable collection of marine animals." At this time the old garden had not been cut up and the sea wall had not been erected. On five days (March 30th, April 13th and 16th, and May 12th and 13th) when the tides were suitable, Tom Mulhall, fisherman, came with his boat, and shore-collecting was carried out at Liardet's Beach, between Sirius Cove and Bradley's Head, Clark Island, Shark Island—"where we made a large collection of fine things. Altogether we had a good day"—Clark Island (second visit), Liardet's Beach and Bradley's Head, Bradley's Head to Taylor's Bay. "Altogether a large amount of material was obtained; and progress was made in sorting, bottling, and labelling, as far as possible, the specimens."

Two excursions to the ocean-beaches at Bondi and Long Bay, after a heavy gale, were made on April 28th and 30th, "to see what the sea had thrown up". Two dead Sooty Petrels, a fine *Scorpaena*, and some miscellaneous specimens were brought back on the first occasion; and a number of Crustacea and Mollusca on the second.

On May 4th—"We found fishermen drawing the seine in the (Elizabeth) Bay, and got a few species of fish from them, which we had not got before. Masters found on the beach a species of *Truncatella*, which is very rare; and is improperly looked on as a land-shell". On May 5th—"About 11.30 a.m. Hastie, the fisherman, came with his net, and we had two hauls on the beach, without, however, getting more than one or two species which we had not got before. Of edible fish there were very few—a flounder, two Black-fish, a Tailor, and a couple of garfish were all. In one haul, we got an enormous number of young Trevally. Hastie afterwards, at 6 p.m., brought a few more strange fish as specimens; altogether we added about a dozen to the Collection."

After the date mentioned, Hastie saved fine, rare, or scientifically interesting specimens from his catches, and on seven different occasions brought them to

the House, or left them at the gardener's cottage near the beach. These included examples of "a very handsome fish known to fishermen as 'The Pig'"; a Nannygai; "a species of Whiting new to me"; three Sharks; five fishes (a Rock-fish, two Rainbow-fishes, and two species of Whiting); a Cestracion Shark, a gigantic Snapper, and a Sargeant-Baker, "all of which I intend for specimens"; two John Dorys and a Nannygai. "The gardener brought up several fish caught last night on the beach: I put into the vat a Stingray with two large spines on the tail, another, a small one, with one spine, a large Catfish, and a fine Leather-Jacket." Another fisherman, Lee, besides *Trigonia*, brought "three specimens of a pretty little fish, quite new to him and to me"; and "a species of Shark, about 3 feet long, and full of eggs, of a species I had not got before"; a few choice fish.

As an example of the way in which specimens from the above sources, or from Mr. Dalley, came under William Macleay's notice, the following extract from the Journal for November 24th is worth quoting: "When Onslow and I got home here very late (after a prolonged adjourned debate in the Legislative Assembly) I found two very handsome fishes on a plate in the Hall, which I at once placed in the spirit-vat."

(b) *Dredging in Port Jackson*.—In June and July, dredging was systematically carried out. The first record is—"June 17th. Masters and I went out in Halstead's steam-yacht, accompanied by Mulhall with his dredge. We met with Dalley and Vaughan fishing at Vacluse. There was a heavy sea on, so that we did not cross the Heads. We had a fine haul of *Trigonia*s at the Sow and Pigs, about 35 in one haul. Masters shot three Terns and two Gannets. We also got a few Crustaceans and shells. I was so pleased with the steamer for speed, comfort, and conveniences for dredging, that I have hired her for four weeks, at £10 per week. In that time, if the weather is favourable, I ought to get a great many things. Dalley gave me, for specimens, a Parrot-fish, two striped fish, and a Mackerel."

"June 20th, besides the purchase of a dredge, I got in all my supplies to-day, sieves, tubs, buckets, rope, etc., so that I am now ready for Wednesday, the first day of my steam-yacht engagement." From June 24th to July 14th, weather permitting, dredging and collecting were regularly carried out on fourteen days. Four days were lost through wet and stormy weather. At the end of the third week, the weather was so unsatisfactory, that, by arrangement, the fourth week's engagement of the steam-launch was postponed. From August 17th to 22nd the dredging was successfully resumed on six days, total 21 days. William Macleay was prevented by other engagements from going twice, but was one of the party on eighteen of the excursions. W. J. Stephens accompanied them on nine days, W. B. Dalley on three days, Captain Onslow and Captain Stirling, R.N., on one day, E. Damel on two days, and Mr. Davis on one day. The regular party consisted of William Macleay, G. Masters, J. Brazier and Tom Mulhall, or a substitute, with his boat, net and dredge, and once, in addition, C. Hastie with his boat and net. Two dredges were in use at first; but a third and heavy dredge, which was hauled by the steam-winch, was used after the first week. A shore-party, usually William Macleay and Masters, was landed as often as possible; the former collected marine forms, while the latter shot birds. Meanwhile dredging was attended to by those on the launch, or in the boat, and seining also by the latter.

During the first attempt, except on one day, dredging, etc., was successfully carried out in the Harbour and its branches, including Lane Cove. One day

was given up to dredging one and a half miles outside the Heads. The fourth week was to have been devoted to dredging and collecting in Botany Bay. This part of the programme was given up in consequence of a threatening gale, with a heavy sea. During the second attempt, three days were occupied in dredging outside the Heads. On one day, hauls were made between the Heads and off Manly; on another, from between the Heads to off Bondi; and on one day, off the Heads, in 25 fathoms. Twenty days were devoted to dredging, seining, shore-collecting, and the collection of both seabirds and land-birds, as opportunity offered, in Port Jackson and its branches, including Middle Harbour, Lane Cove, and the Parramatta River, below Gladesville. The entry for July 7th is—"We dredged the channel, three or four times, between Goat Island and Ball's Head, and got by much the greatest number of things we have ever had." And for August 22nd—"This was the last day of the steam-yacht; and I went out about 9 o'clock, accompanied by Stephens, Brazier and Masters. We went up the Parramatta River, as far as Gladesville, and dredged there for about two hours. Our success was greater than any day this week. We got some very large specimens of *Venus*, and other shells, such as *Trigonia*, etc., and took besides a few Crustaceans and Echinoderms. The dredging outside the Heads was not so successful; several times the dredge came up empty. Altogether a large miscellaneous collection chiefly of marine forms, was obtained, and much experience was gained."

(c) *Collecting and dredging in Jervis Bay and Port Stephens*.—Having made a good beginning with the Port Jackson fauna, William Macleay shortly after decided to go further afield. "September 19th. I find it so impossible to get a proper steamer for my proposed fishing-excursion to Jervis Bay, etc., etc., that I think now of taking the advice of Dr. Cox, and chartering a schooner." "October 3rd. I advertised in this morning's *S.M. Herald*, for a small steamer or sailing vessel suitable for a coasting excursion." "October 5th. I went to town at 10 o'clock this morning, to look at a vessel offered in answer to my advertisement. She is named the *Peahen*, is a ketch of about 30 tons, and is commanded by William Crichton. I think she will do for my purpose; and I am to give my final decision at 9 a.m. tomorrow morning." "October 6th. I closed with Crichton to-day about the ketch *Peahen*. On Thursday (Oct. 8th) I take her for two months for £90, the services of himself and two men given in. Brazier is to have charge, and is to have an assistant at £1 per week. They will be provided with food on board, for which I am to make an allowance. She is to go first to the south and Jervis Bay where Masters and I may meet her. I ordered to-day additional ropes, linen, and fishing lines; also spirits, jars, etc., and charts. Masters and I finished the *Papilionidae* to-day; they occupy twelve drawers; and commenced the *Pieridae*." After some delay, partly due to a southerly wind, the *Peahen* sailed on October 10th; arrived at Crookhaven River on the 11th, was detained for a week by bad weather, arrived at Jervis Bay on 23rd and returned to Sydney on November 6th, with a large collection, including sharks and other fishes, mollusca, crustacea, entozoa, etc., J. Brazier reporting that, in spite of unfavourable weather, he had dredged every part of Jervis Bay. After some delay, the *Peahen* sailed for Port Stephens on November 17th; got as far as Tacking Point on 23rd, but was compelled by unfavourable weather to return to Port Stephens; was at Nelson Bay on 25th; and again at Port Stephens on 28th, where a very large Sunfish (*Orthogoriscus mola*) was captured. The Entozoa were taken out and preserved. As it was desired to save the skin, the *Peahen* returned to Sydney on December 1st. The sunfish measured about

9 feet long, and 11 feet deep, including the fins. The skinning was a very troublesome job. The skin was afterwards stuffed and mounted, and kept in a small shelter erected in the garden. A considerable collection of marine forms, including a number of Comatulas, was obtained, but particulars are not given. As the time of the charter was not quite up, the *Peahen* spent three days (December 3rd-5th) cruising in Port Jackson for the purpose of dredging; and was paid off on the 9th.

(d) "*Fishing Picnics*".—Among the events worthy of note of this year, 1874, were five "Fishing Picnics", the object of which was to give pleasure, together with opportunities for promoting friendly intercourse and marine collecting. William Macleay was the host on three of these occasions. The other two were arranged by Captain Stackhouse, Honorary Secretary of the newly established Linnean Society of New South Wales, after it had got its name, and appointed its first Office-bearers and Council, but before it began to hold scientific Meetings, in January, 1875.

Of the first of these William Macleay says in his Journal—"April 4th, 1874. My fishing picnic came off to-day. The party consisted of Dr. Badham, Dalley, Stephens, Davis, Baillie of the Murrumbidgee, Captain Chapman, Forster, Masters and myself. Dr. Cox was prevented by a professional engagement from joining us. Our accompaniments were a North Shore steamer, two watermen's boats, George Mulhall and another, and a fisherman's boat with two fishermen. Jocelin, who supplied the edibles, sent a cook; and I brought my butler. Captain Chapman brought dredges, etc., and his coxswain to manipulate them. We got away from Circular Quay soon after 8 o'clock, called at H.M.S. *Dido* for Chapman, at Woolloomooloo Bay for the fishermen, and at Rose Bay for Dalley. We had a most pleasant day, which terminated at 6 p.m. I had with me two jars and a bottle of spirits, and collected many species of fish, mollusca, and crustacea."

The second picnic was given in honour of the scientific visitors on board H.M.S. *Challenger* then in port. Of this, William Macleay says—"April 19th. Cox and Stephens called in the forenoon. I arranged with them to give a fishing and dredging picnic on any day that would suit Dr. Wyville Thomson." The day that suited Dr. Thomson (Thursday) was not so suitable as a Saturday would have been for some of the invited guests who would otherwise have been present. "April 23rd. At 8 o'clock in the morning, I was at the North Shore Steam Ferry wharf, Circular Quay, to meet my guests for my fishing-party. In a short time, all were mustered; and having got our provisions, etc., on board, we made a good start. The party consisted of Professor Wyville Thomson, Mr. Murray, his Assistant, Professor Badham, Stephens, Onslow, Mackay, Masters, Dr. Cox, Forster, and myself. We were accompanied by the dredging steam-pinnace of the *Challenger*, Tom Mulhall and a fishing-boat with two men, which we picked up, by arrangement, off Woolloomooloo Bay. We called at H.M.S. *Dido* for Captain Chapman; and at Point Piper for Ned Hill, who brought with him a Blackfellow, and a lot of dynamite-torpedoes for fish. We had a very pleasant day, though our success in fishing and dredging was not great. We dredged, among other places, the deep parts of Middle Harbour above the Spit; found 18 fathoms of water, mud, and no life. We got back between 6 and 7 o'clock."

The *Challenger* naturalists gave a return dredging-party on June 3rd, mentioned later on.

The third of these festive gatherings was the first of the two "Linnean picnics" arranged by Captain Stackhouse. "November 21st. I went to a picnic of the

Linnean Society to-day. About twenty Members were present. We started from the Circular Quay at 10 o'clock, in a small and dirty steamer; and, after picking-up a fishing boat, etc., we fished Vacluse Bay, the top of North Harbour and Quarantine Bay; and at the last of these we had our dinner. The party was, on the whole, a pleasant one. The catch of fish was small. At Quarantine Bay we got a good many White Trevally, pronounced, by those who ate some, a good fish; and a few Salmon, and Flathead. I got, for my collection, a Swimming Crab, a Salmon, and a small, barred Sole. Masters, who was of the party, got also, I believe, some small shells. At Quarantine Bay we saw a large Sunfish rolling about for some time. We got back by six o'clock."

On the fourth occasion, William Macleay was again the host—"December 5th. I gave a fishing picnic to-day in the steamer *Galatea*, two watermen's boats, Tom Mulhall and another, and Hasty's fishing boat. Supplies from Jocelin, and from home. The party consisted of Dr. Badham and an Italian artist, Dr. Cox, Faree of H.M.S. *Blanche*, Captain Chapman of H.M.S. *Dido*, Masters, Stephens, Dalley, E. Hill, Jennings, Stackhouse, Dr. Roberts, Ramsay, Phelps, Sandeman, W. Forster and myself, in all seventeen. We drew the seine in Quarantine Bay, the Bay next to it, and Collins Flat, and got a few Flathead, Bream, Whiting, and a number of Red Mullet. I got also two or three new fishes for my collection. We then steamed to Clontarf, landed, had dinner and amused ourselves until it was time to return. We arrived in Sydney at 6 o'clock after a very pleasant day. We saw the *Peahen* cruising about, but did not speak her."

The fifth was a "Linnean Picnic"—"December 19th. Masters came here in the morning; and at 9.30 a.m., he and I drove to the Circular Quay to join the Linnean Society's picnic-party, which was to start thence at 10 a.m. At 10.30 a.m. we got away, the steamer a very small and dirty one. The party numbered sixteen, including Ramsay, Brazier, Badham, Dalley, etc. We hauled the seine in Chowder Bay, Obelisk Bay, and above Shell Cove in Middle Harbour, where we had dinner. We did not get much either by the net or the dredge (we had Mulhall's dredge with us), but plenty of fish to eat, of good quality, which was skilfully cooked by Dalley. We got back to Circular Quay about 6.30 p.m., a good deal tired, and very much sunburned."

The above records are of interest because they are indicative of William Macleay's friendships before the Linnean Society of New South Wales was thought of, or, later on, before it began to hold scientific Meetings, in January, 1875.

3. *Land collecting.* (a) *Between Bondi and Botany Bay.*—So much time during the year was spent in routine work, and in marine collecting, that little time was available for land-collecting. Nevertheless five excursions for the day were made to La Perouse, and to Randwick and Maroubra, and Bondi by hansom-cab; the fauna of the old garden, before it was cut-up (in the following year) received much attention; and the larvae of indigenous Lepidoptera feeding on introduced plants in gardens, were collected and bred out (for at this time, only the first three Parts of Scott's "Lepidoptera" had been published).

The Journal records of these enterprises include the following—"May 16th. Masters and I left at 10 o'clock, in a hansom, and went to La Perouse's monument, but found the sea too rough for much to be done. We got a few shells, but scarcely anything else. We took a turn up on the hills, but found the scrub almost impassable. We got several lizards, and shot a *Ptilotis*." "June 3rd.

Masters and I went this morning, in a hansom, to Randwick and Maroubra, but not to the seashore. We walked over a large extent of country, but did not get much. Of birds I had not got, we saw only Bristle-birds and Emu-wrens, but failed to get any. We obtained only snakes, lizards, and frogs." "September 9th. Masters laid out the remaining Endeavour River Lepidoptera, and then, about 10 o'clock, he and I went out in a hansom to Maroubra Bay, and spent some hours on the hills lying between it and Long Bay. We got two kinds of snakes, four of lizards, etc., and a few insects. Masters tried hard to get a shot at Emu-wrens and Bristle-birds, both of which seemed abundant, but could not be seen. He shot a male of *Malurus Lamberti*, and a common Honeyeater. We got home about 3 o'clock." "September 13th. Masters and I went in a hansom at 10 o'clock along the road to La Perouse's monument. When about a mile from it, we left the cab, and went over the hills on the eastern side of the road. We got only one small snake, no lizards, and no insects worth mentioning. I found the nest of *Glyciphila fulvifrons* with one egg in it, which we took. The nest was in a bush, a few inches from the ground; a compact nest, very deep for its circumference. Masters, after a great display of patience, shot two bristle-birds, and two emu-wrens. We went on to the monument afterwards, to try to secure a fisherman, with his net, for Friday; but the men were too independent to treat with. We reached home at four o'clock." "September 18th. Masters and I went, at 10 o'clock, in a hansom as far as Bondi, on the old South Head Road; and then walked along the hills close to the coast until we came upon the road again, near the junction of the old and new roads, close to the Light-house, where we found our hansom. We got a large brown snake 5 feet 3 inches long, a small black one, a small diamond-snake, some lizards and some frogs. Masters also shot some emu-wrens; and I found a nest of *Glyciphila fulvifrons*, with two eggs. The brown snake had a large legless lizard in its stomach, all the bites or broken parts of which were covered with an entozoon, which was very numerous in the snake."

(b) *In the old garden.*—The old garden was to be cut up, and the greater portion of it offered for sale in the following year (1875). Incidentally much attention was paid to the fauna, other than the sections of it, especially insects and Arachnida, which for twenty-five years had interested William Sharp Macleay. Bats were captured in the cellar. Rats (especially the nest-building tree-rat described by W. S. Macleay as *Hapalotis arboricola*, then thought to be indigenous, but now regarded as a variety of the introduced Black Rat) and Bandicoots (one of them covered with ticks, small, large, and very large, and also a large species of flea) were caught in traps. A few birds of interest were sacrificed, including one of a community of Nankeen Night Herons (*Nycticorax caledonicus* Lath.) which for many years camped during the day, and nested in some of the old Pine-trees (*Pinus pinea*) near the house. Others, wanted for the collection, were *Strepera graculina*, *Meliornis*, the Oriole (*Mimeta viridis*), gulls and cormorant obtained from the beach at the bottom of the garden, a Pardalote and its nest, eggs of the Laughing Jackass, and Silver Eyes. Introduced Ring-doves of an Indian species had become very abundant in the neighbourhood of Sydney of late years. The earliest record of these undesirable introductions known to me is the following—"July 17th. Masters shot a pigeon, which turns out to be an Indian species, no doubt escaped from a cage. It was a fine full-plumaged female, full of eggs." And a week later—"July 24th. Masters shot another pigeon, of the

same species as the last, in the garden this morning." The skins of both were preserved. A Red-bellied snake, *Tetrodymon cucullatum*, frogs and slugs, and other invertebrates, some of them the progeny of species introduced with plants, were also obtained.

All the larger animals, especially, but not exclusively, vertebrates, obtained in the flesh, whether in the garden, on land-collecting excursions or on marine excursions, or by gift, were systematically examined for parasites, both Epizoa and Entozoa, and these were preserved. During the year 1874 alone, a very considerable collection was obtained, sorted, bottled and labelled.

(c) *Country excursions.*—William Macleay and W. J. Stephens, accompanied by G. Masters, who was then about to take his annual holiday, left Sydney on December 30th, 1873, on a visit to Wagga, returning on January 19th, 1874. The train then went no further than Goulburn. William Macleay sent up his own buggy, pair of horses, and coachman by train on the 29th. A second vehicle was hired. Stoppages for the night were made at Frankfield, near Gunning, Yass, Bogalong, Jugiong, Gundagai, and Lower Tarcutta, both going and returning. The weather was intensely hot nearly all the time. "The heat was so intense on the plains, that nothing was to be found under stones, and even the ground-beetles had ascended stalks of grass. The stones were too hot to touch." Nevertheless, collecting was carried out as far as possible in the early morning and in the evenings; and some important specimens were obtained. The birds were moulting, so that only half a dozen rare species were worth collecting. Masters met a local collector of birds and insects at Wagga from whom William Macleay, by purchase, obtained twenty-six of the species in the initial instalment of his ornithological collection.

Some interesting records of coastal species, which were rare inland forty-seven years ago, are mentioned: a few specimens of *Papilio sthenelus* taken at Wagga, "the only *Papilio*, so far as I know, in the Southern District". Also a few specimens of *Danais erippus* at Wagga and Goulburn—"The *Gomphocarpus*, its chief food on the coast, is not here, and I am not aware of any plants of the family *Asclepiadae* in this district." At Gundagai, "I noticed, on the river-bank, the rushes with very many of a species of *Asilus* (not of much size) hanging on the stems, each with a honey-bee (English) in his grasp, from which he had extracted or was extracting the vital fluids. It seems extraordinary, that an insect of this size should so invariably overcome a stronger, apparently, and certainly as large an insect as itself; but the fact is undoubted, and may account for the scarcity of the English bee in parts of the country, where it once seemed likely to become enormously numerous."

A second excursion by William Macleay and Masters, over some of the same ground, from Goulburn to Gunning, was made from October 15th to 19th, 1874. This was the second of the only two country excursions of this year. The weather was favourable this time, and a considerable collection was made, as much as they could bring back—birds, reptiles, amphibia, insects and other invertebrates. They were up at 5 a.m., and collected assiduously whenever an opportunity offered. "We became possessed of a blue heron in the most extraordinary way. It flew against the telegraph-wires, and broke its wing, just alongside the buggy."

(d) *Collections by E. Spalding.*—Early in June, William Macleay engaged E. Spalding for six months to make a general collection at the Endeavour River,

and, properly equipped, he left Sydney on June 10th. Spalding had previously collected insects for E. P. Ramsay, at Rockingham Bay, as mentioned in Mr. Scott's paper "On *Ornithoptera Cassandra*" (*Trans. Ent. Soc. N.S. Wales*, ii, p. 49). A first instalment of results was received on July 31st, comprising five boxes of insects, spirit-specimens of echini, crustacea, small mammals, fishes, asterids, and various small things; together with "skins of a new Bandicoot, and of about 20 birds, some of them new to Masters—altogether a good instalment." The second consignment of two cases was received on August 28th, of which "One case contained two boxes of insects, skins of eight species of birds, some Asterids, and twenty or thirty species of shells, some good things amongst them all. The other case contained a stone-jar, and seven or eight smaller bottles of spirit-specimens, including a good many fishes, some very fine Asterids, a few bats and rats, a number of lizards, and a large number of Crustacea, etc. Altogether, I am well satisfied with what Spalding has sent me as yet." The third came to hand on September 21st, two cases, "one containing skins of 17 birds, not in my collection—a Hawk, a Native Companion, a Spoonbill, an Oyster-catcher, and another—two of a species of Kangaroo, and a large iguana. The other contained a jar of spirit-specimens, rats, native cats, lizards, fishes, etc., etc., a very fair consignment". The fourth and fifth instalments, comprising insects only, were received on October 10th and 28th. "There were a few new things, but nothing of great interest", in the first of these; but the second included "a number of new things in the Elateridae, Cryptorhynchi, and Longicorns, the last being very fine". Spalding returned on December 7th, bringing with him "a good lot of insects, a few birds, a kangaroo, and some snakes and lizards, etc., in spirits. . . He has done well on the whole, particularly as regards the collection of insects."

4. *Exchanges*.—Important exchanges were arranged, and systematically carried out during the year. The subject is first mentioned in the Journal for February 9th.—"Masters is to write, for me, by the S.S. *Tartar*, which leaves on Saturday with the mails, via San Francisco, to Henry Edwards, to ask, now that regular communication is re-established, if he is disposed to recommence exchanges. He is also to write, with a similar object, to Mr. Waterhouse of South Australia, and Johannes Odewahn of Gawler Town." A few days later, letters were received from Mr. Crotch, of Cambridge, Mass., and Dr. Dohrn, of Stettin, making offers to exchange. These were accepted and, as soon as convenient, acted on. Other exchanges were arranged later. The total results for the year were:

Mr. Crotch, who was then working at the entomological collections in the Museum of Comparative Zoology at Harvard College, Cambridge, Mass., and was desirous of exchanging Coleoptera—a box of Australian Coleoptera, "228 species, mostly two specimens of each", was sent on April 10th. If any return for this was received, it was not noted in the Journal.

Dr. Dohrn, of Stettin—a small box of choice Coleoptera, received on August 25th. For this, two boxes of Coleoptera were despatched on November 27th; one containing "103 species of the choicest and rarest things I have, most of them named by myself." The second contained "about 50 species, nearly 200 specimens, of Endeavour River Coleoptera un-named; and about 45 species, 120 specimens, of South Country Coleoptera, also un-named".

Mr. Henry Edwards, of San Francisco—two consignments: one, received on July 2nd, of Coleoptera from California, Nebraska, Colorado, Indiana, the Atlantic

States, Mexico, and Vancouver Island; the other, received on October 6th, of "a large and fine collection of Lepidoptera, including a number of species new to my collection, occupying twelve cigar-boxes". For these and another promised, three returns were sent: one "of fine Diurnal Lepidoptera, for the most part from Endeavour River; 100 species of Australian Longicorns, all named; some *Tetracha*, *Hyperion*, and eight Buprestids, in all 110 species, about 400 specimens", sent on July 31st. The second, sent on November 19th, comprised "thirteen cigar-boxes with about 126 species of Australian Hemiptera, 180 species of Hymenoptera, 126 species of Diptera, and 70 species of Homoptera". The third, sent on December 21st, "A case containing two large boxes and one small one, of Lepidoptera, Sphingidae, Agaristidae, and moths, nearly 200 species in all".

Mr. Augustus Gross, of Newcastle—some Australian Lepidoptera (*Antherea*, *Sphinges*, and *Chelepteryx Collesi*, etc.) "bred by himself, and mounted with great neatness and care"; in exchange for Northern Butterflies, including Ornithoptera. "I also gave him a copy of Vol. ii, of the *Trans. Ent. Soc. N.S. Wales*". Mr. Gross paid three visits during the year. On his third visit, on December 26th, he received "some handsome foreign Butterflies. I also gave him a *Papilio Sarpedon* which had just emerged from its chrysalis, the last to come out of all those laid-up before winter".

Mr. James, Sydney—a box of very small Lepidoptera, collected at Baptist's Gardens; for which some large, showy East Indian Butterflies were given in exchange.

Mr. Pilcher, of Rockhampton—a good collection of Hymenoptera, Diptera, Hemiptera, Homoptera, and Orthoptera, containing more than 300 new species, received on August 27th. The box was refilled with "an equal number of New South Wales Coleoptera, properly named", as asked for, about 500 species, 1,500 specimens; and despatched on August 11th.

Mr. Augustus Simson, who had lived for some time at Port Denison, spent a short time in Sydney in August, on his way to Tasmania, where he thereafter permanently resided. About twenty species of land-shells and freshwater shells from Port Denison and Mt. Dryander were exchanged for New South Wales species. Mr. Simson called on William Macleay on August 25th. "Mr. Simson, who has frequently sent Mr. Masters things from Port Denison, and who is a most enthusiastic collector of insects, called this morning. He is going to his brother, near Hobart Town, probably to reside. From what he says, I think we may be mutually useful." This expectation was subsequently justified. On August 29th—"Mr. Simson came to get a lesson from Masters in skinning birds, and remained till 12 o'clock." On October 23rd, there is a record—"I had a long letter from Tasmania, from Mr. Simson in which he (says) much in the way of collecting; and sends a list of some shells, which he has sent to me, addressed to Mr. Brazier." On November 7th—"I got, this morning from Brazier, a box of Port Denison land and freshwater shells sent to me, through him, by Mr. Simson, now of Tasmania. They are, I believe, a very nice lot." Specimens of shells, in exchange for these, were sent on December 11th.

Mr. F. G. Waterhouse, of the South Australian Museum, Adelaide, had exchanged insects with William Macleay as far back as 1864, as narrated above. From 1874 onwards, general collections were exchanged. Two consignments were received and two were sent during the year. Of the first receipt, the record is—"June 9th. Mr. Waterhouse, of the S.A. Institute, sent me, through Masters and

by mail this morning, a box containing 32 species of South Australian birds, of which 23 were not previously in my collection. There were also a few Coleoptera, including a new *Cetonia* from the Northern Territory. They were all so infested with *Anthrenus*, that we had to put them in quarantine, with a strong dose of bisulphide of carbon." The second consignment, received on July 11th, comprised 36 species of birds from South Australia, Western Australia, and the Northern Territory, not previously in the Macleay Collection. An exchange for this, comprising rare birds, some spirit-specimens of small mammals, geckos, a young brown snake, and 25 species of shells, chiefly from Port Jackson, was sent on August 11th. The second, comprising a "box of choice Endeavour River Coleoptera, a box of Port Jackson shells, a pair of *Ptilotis Macleayana*, and of *P. Cockerelli*, and a jar of spirit-specimens of rats and lizards", was despatched on December 23rd.

5. *Donations*.—Over and above the sources from, or the ways in, which specimens were obtained as mentioned above, very important additions to the Collection accrued from donations from William Macleay's friends, from exchanges with correspondents in Australia, Europe, and the United States, and from extensive purchases of Australian specimens. The donors of specimens included:

Mr. J. Brazier—"A handsome donation for my Museum" consisted of a number of Crustacea, Asterids, and Echini from Port Jackson, Botany Bay, and the Howick group, N.E. Australia; of small fishes, etc., got in a towing-net in the Pacific; and of bottles containing lizards, fishes, etc., from Marshall Island, Eclipse Island, Bellinger River, Cape Sidmouth, Clarence River, Manning River, Fitzroy Island, and San Christoval, Solomon Islands (May 1st)—Specimens of *Bulimus Mastersi* and *B. Brazieri*, and of five species of Coleoptera from New Caledonia (May 11th)—Holothurians and an Asterid from Lane Cove—Specimens of eight species of Crustacea from the Mauritius (June 20th)—a Little Noddy, *Anous melanops*, shot in the Pacific Ocean near the equator, together with entozoa therefrom (June 22nd)—A large Asterid from the South Sea Islands; a *Spatangus* from the Solomon Islands, and several Port Jackson crabs and Asterids (July 10)—An egg of *Megapodius Brazieri* from Banks Island; and two eggs of the White Pigeon of the North—Specimens of *Ascaris* from the intestines of a fowl.

Mr. Bransby, "an enthusiastic fisher"—Specimens of two fishes—A Port Jackson Shark caught outside the Heads—A Cestracion Shark, a Kingfish, and a Nannygai.

Mr. Comrie, of the Currajong—Some shells from the South Sea Islands.

Dr. J. C. Cox—A collection of butterflies from Cape York; and spiders preserved in glycerine—An Asterid from Port Stephens, and three specimens of *Xylotrupes australinus* from Northern Queensland—"A handsome donation of specimens of quite 300 species of Shells chiefly from the South Sea Islands"—An additional donation of specimens of "over 100 species of fine shells" out of the duplicates in his collection; also an hydatid from a boy's liver—Specimens of small crustacea, echinoderms, etc., dredged on the *Challenger* dredging excursion (on June 3rd, which William Macleay was unable to attend)—An emu's egg, and a slow-worm—A gecko, a large centipede, a bandicoot, and a ring-tailed Opossum—An Asterid from Port Stephens, some small ringed snakes from Colo, "evidently the young of the Brown Snake", and freshwater fishes from Rockhampton, "about a dozen species, including three of *Silurus*"—Living geckos from Middle Harbour—Trematodes from the lungs of a sheep, from Mudgee—A young wallaby—A fine *Spatangus* from Port Jackson—A rock-wallaby from

Daboo—Two flying-squirrels, etc.—A snake, *Diemenia reticulata*, from Port Stephens; and "a Chelifer got at the same house as one he gave me on a former occasion, taken off a woman suffering from Acariasis. No doubt the Chelifer was feeding on the Acari"—Snakes from Parramatta and Lane Cove—A fine *Syngnathus* from Cook's River, and a very curious lizard from the Darr River.

Mr. W. B. Dalley—Fishes (a magnificent Flying Gurnard; a Parrot-fish, two striped fishes, a Mackerel; fine specimens of Sergeant-Baker, Rock-fish, Parrot-fish and Leather-jacket; *Chironectes*).

Mr. W. Forster, M.L.A.—"An *Oodes* and a pair of *Feronia*, from Marrickville", on January 28th.

Mrs. Grigg (Lady Macleay's sister, resident in India)—a small collection of large Indian Coleoptera, from the Neilgherry Hills.

Mr. E. Hill—"A beautiful piece of *Gorgonia* taken yesterday (June 3rd) in the dredge" at the *Challenger* picnic.

Mr. Long—A bottle of sea-snakes.

Mr. G. Masters—A fine specimen of *Carenidium* or *Conopterum*, quite new, from the Richmond River—Specimens of three new species, of *Carenium*, *Feronia*, and *Psaliidura*—A box of insects from the collection of friends residing at Rope's Creek. "There are numerous specimens of *Omma Stanleyi*, *Rhytiphora polymita*, *Stigmodera affinis*, a large species of *Cryptodus*, *Talaurinus* sp., etc., all insects considered to be rare until lately, and, consequently, excellent for exchange—"A donation of fine Lucanidae, of which I had no duplicates", for Mr. Crotch—Some Coleoptera from North Queensland, but nothing new—A skin of *Anellobia melivora* shot near Botany Bay—A well-preserved specimen of *Ostracion* from Port Jackson—A fine specimen of *Neptunus pelagicus*; and "one of *Catadromus Elseyi* from his own collection"—Three specimens of named Cryptorhynchids from his own cabinet; and a few quite new things sent to him from Mt. Dryander, near Port Denison; among them was a beautiful *Pachyrhynchus*—A wallaby, a Whistling Hawk, a Curlew, and a honeyeater, from the south side of Botany Bay—Some (about a dozen) Coleoptera from Treasury Island—A Goshawk, and Entozoa from a wallaby—Fishes, Crustacea, and a mollusc from Blackwattle and Johnson's Bays, taken in the seine—"A very fine specimen of a fish commonly known by the name of 'Maido'"—A donation of spirit-specimens of snakes, lizards, fishes, a tortoise, Arachnida and Vermes, chiefly captured by him at Rope's Creek—A fine specimen of an African Shell, *Bulimus Crossei*—A few fine shells—A fine specimen of *Turnix varius* shot near Waverley—A Samson-fish, and a Leather-jacket—A fine Tasmanian *Hippocampus*—A young Brown-banded Snake, and two nests, with eggs, of the Reed-Warbler, from Baptist's Gardens—Nest of *Melithreptus* sp., with a young cuckoo—Perch, Gudgeon, and Fortescue from Rope's Creek; and the nest, with eggs, of *Maturus cyaneus*.

Mr. H. N. Moseley (of the *Challenger* scientific staff)—an egg of *Diomedea chlororhynchus*.

Captain Arthur Onslow (grandson of Alexander Macleay)—A *Porphyrio* from Camden—His fine collection of shells, some "of considerable size, and American species, which I had not got"—A fine living Planarian from the hot-houses at Camden (possibly *Bipalium Kewense*).

Mr. Phelps—A large number of insects collected by him on the Darling, including some fine specimens of *Euryscaphus* and *Zuphium*; and two specimens of a freshwater shell, also from the Darling—Specimens of a freshwater

shell from the Murray River. "Mr. Phelps tells me that he thinks he took the fine *Euryscaphus*, in the Darling River collection, at night, at the door of his hut".

Captain Stackhouse—Some Crustacea dredged by the *Challenger* dredging-party on June 3rd—Coleoptera from New England, collected by him, during a visit of some months.

Mr. W. J. Stephens—A Cestracion Shark from Manly.

Mr. G. Deas-Thomson—An Ailanthus silkworm moth.

6. *Purchases*.—When William Macleay made his offer to the Senate, in 1873 to bequeath the Macleay Collections to the University, he said—"The Zoological Collection which I leave to the University, comprises very few specimens of the vertebrate animals, and except as far as Australian species are concerned, it is not likely that I will attempt to add to it."

It is evident from this, that even at this time, before his appointment of a Curator, he had some idea of adding Australian vertebrates; and, in January, 1874, he began to do so, especially birds. But within the next four months, he was getting so interested in the enlargement of the collection, that he decided to begin adding non-Australian vertebrates to the collection, in this case also beginning with birds. The record for April 12th is—"Wrote letters all this morning. I wrote to Mr. A. Boucard (a dealer in natural history specimens, in a large way, in London) giving him an order for 1,000 species of (foreign) birds. I wrote to my brother Alick (in England) about the same matter."

Very important additions to the Collection were made by purchases throughout the year. During William Macleay's visit to Wagga, with W. J. Stephens and G. Masters, in January, 1874, he met with a local collector of birds and insects, named West, from whom twenty-four skins of birds, and some fine specimens of *Stigmodera*, two new species among them, and a fine new *Rhytiphorus*, were purchased. A few other bird-skins were obtained by the party. On January 26, the bird-skins, representing 35 species, were put away in a drawer. "This is the commencement of my ornithological collection." The following is a list of those from whom purchases were made during the year:

Mr. A. Boucard, London—A collection of 850 named and labelled bird skins (1,000 were ordered), almost all small, and chiefly from South and Central America, very few European species, but 20 or 30 Australian (nine not before obtained); 78 species of Trochilidae, with the sexes of 50 species, were received on October 28th. On November 6th, part of the entry in the Journal is—"I finished (that is sorting and marking them off in Gray's Handbook of Birds) with the birds to-day. The total number of species in Boucard's collection is under 650 species. My total in all is about 980 species." On November 16th, a second order was written, and posted on the 27th—"I wrote to-day to Boucard, London, about the birds and ordering more; that is desiring him to complete the last order of 1,000 species and ordering another 1,000 species. I have also ordered small mammals, and reptiles and fishes in spirit. I have asked him also to get as many species of the genera *Leptalis* and *Euterpe* of the Pieridae as he can."

Mr. J. Brazier—470 species of Mollusca, on August 8th—378 species, including species of *Helix*, and *Volutes* on September 12th—"A fine collection of over 70 species of Crustacea, and about 20 species of Echini and Asterids, from New Caledonia, on April 20th—Three species of mammals, 19 of birds, six of fishes,

29 of Crustacea, and 6 of Radiata, from Mauritius and Madagascar, purchased at an auction sale, on April 22nd, 270 species "new to my collection", on September 24th.

Mr. E. Damel—a collection of 48 species of land-shells from the Philippine Islands; and 11 species from New Granada, on June 2nd.

Mr. Duboulay—A collection of about 500 insects, a few land shells, and half a dozen bottles of spirit-specimens of snakes, lizards, etc., from the Endeavour River, on May 21st. "There were some very fine, and new things among the Coleoptera."

From, or per medium of, Mr. G. Masters—A collection of bird-skins, 138 specimens, representing 85 species, some rare, on February 24th—A small collection of spirit-specimens of small mammals, lizards, and snakes, etc., from Salt River, in the interior of Western Australia, on June 2nd—Eight fine skins of Pigeons from the Richmond River, on June 11th—Forty specimens of *Tetracha crucigera*, 60 of *Hyperion Schroeteri*, and eggs of 28 species of Australian birds, on August 27th—A collection of Moths, chiefly Micro-lepidoptera, 1,000 specimens, probably 400 species, made about Sydney, on November 17th; "they are chiefly intended to send to Mr. Edwards, of California".

Mr. Palmer, a taxidermist, and dealer in natural specimens, whose shop was in Hunter Street.—130 bird-skins, including 36 from Cape York, 2 lizards from the Richmond River, a kangaroo rat, a stuffed mongoose, and the complete skeleton, not articulated, of an aboriginal female. On June 23rd, William Macleay came to an agreement with Palmer, undertaking to purchase any specimens of birds not already in his collection, at a fixed rate.

Mr. Petterd—A collection of 53 species of land and freshwater shells from the Richmond River, on September 7th, "some very minute, and nearly all new to my Collection."

Mr. E. Waller, Brisbane—a collection of 62 specimens of Australian bird-skins, 48 species, on May 22nd.

(ii.) Offer to University of Library and Collections.

The Chancellor, Sir Edward Deas-Thomson, announced William Macleay's offer of the Macleay Collections, as a bequest, to the Senate of the University, in his Address delivered at the Commemoration on March 28th, 1874. The Address was published in the *Sydney Morning Herald* of March 30th. The portion of it relating to the offer, is as follows:—"I have much pleasure in stating that a communication has been received from William Macleay Esqr., M.L.A., F.L.S., announcing his intention of bequeathing to the University his valuable (scientific) library and collection of natural history, upon trust for the promotion of that science, and the instruction of the students and the inhabitants of the colony in the same, and upon certain conditions set forth in his will, of which he sends an extract. He also expresses his intention of leaving to the University the sum of £6,000 to be invested in Government securities of the Australasian colonies in this colony; the interest upon which is to be applied to the payment of the salary of a properly qualified curator, to be specially and exclusively employed in the care and preservation of the specimens belonging to the collection, or any additions that may be made to it. The library already consists of about 2,000 volumes, and Mr. Macleay states that he is continually adding to it. . . . It includes a large number of books on Natural History, which belonged to the late William Sharpe Macleay Esqr., F.L.S., and which have

been presented by his brother, George Macleay Esqr., C.M.G., F.L.S., to accompany the collection. Of the collection of specimens, I believe it may be confidently asserted that it is one of the most extensive and valuable in the world (i.e., in the possession of a private individual)."

The continuation of his Commemoration Address had reference to the importance of Natural History in dealing with fungoid and insect pests, some of them troublesome in Australia and elsewhere just then.

Mr. Deas-Thomson (1800-79), member of the first Senate, Chancellor from 1875-78, came to Sydney in 1828, and succeeded Alexander Macleay as Colonial Secretary in 1837. He married the second daughter of Governor Sir Richard Bourke in 1833. He lived at "Barham", off William Street, about ten minutes' walk from Elizabeth Bay House. From William Macleay's Journal I learn that the members of the two families constantly visited, and in fact, dined on alternate Sundays at "Barham" and Elizabeth Bay House. Sir Edward had numerous opportunities of seeing and learning something about the Macleay Collections.

Though not professedly scientific he had a general interest in Science. He was a member of the first Committee of the Australian Museum appointed in 1836, and eventually succeeded Alexander Macleay as President. He was a Fellow of the Linnean Society at least as early as 1838.

The significance of William Macleay's offer to the Senate in 1873, seems to be: firstly, that the Chancellor was looking forward to the establishment of a Medical School in connection with the University, and he thought that the announcement would help to stimulate an interest in the matter, and, secondly, that it would help to settle the question of the locality for the erection of the contemplated Prince Alfred Hospital.

Melbourne University founded in 1853, three years later than Sydney University, had a Medical School to begin with, and zoology was included in the curriculum. The Alfred Hospital in Melbourne was opened by the Duke of Edinburgh in 1870; and the foundation stone of the Prince Alfred Hospital in Adelaide was laid in the same year. But though the money had been in hand for several years, the foundation stone of the Prince Alfred Memorial Hospital, Sydney, was not laid until April 24th, 1876, one reason being that there was not unanimity as to a site for it. If the University was to have a Medical School there would need to be a suitable hospital in proximity to it. The Chancellor may have wished to see it erected where it now is. An important hospital is a necessary adjunct to a Medical School.

But it was not of any particular importance to William Macleay, that his intention should have been announced in 1874. What happened in his case was (i) that the announcement aroused considerable interest, and his friends began to offer him donations of specimens; and (ii) that he had now committed himself to the eventual disposal of the collections. But what happened in 1874 was for the most part unforeseen when he made his communication to the University towards the end of 1873.

(iii.) The visit of H.M.S. *Challenger*.

H.M.S. *Challenger*, in command of Captain Nares, arrived in Sydney on April 6th, and sailed again on June 8th. The scientific staff included Professor Wyville Thomson, leader, John Murray, physicist, H. N. Moseley and Dr. von Suhm, zoologists.

In anticipation of this visit, William Macleay notes in his Journal on January 24th, that he had begun to read Wyville Thomson's interesting book on the deep-sea investigations carried out on H.M.S.S. *Lightning* and *Porcupine* in the summers of 1869-71. The book was finished next day and promised, on loan, to Mr. Deas-Thomson. The *Challenger*, at this time, according to the programme, was supposed to be in the Antarctic regions, and was expected to arrive in Sydney about May, to refit.

William Macleay made the acquaintance of Wyville Thomson on April 7th, at the Club. On the 12th (Sunday) he records—"I went to 'Barham' to dinner, where I met Professor Wyville Thomson and Captain Maclear. They afterwards came on here, and we had a most scientific party, consisting, in addition, of Roberts, Stephens, and Sandy Macdonald."

On 19th April the record states—"Cox and Stephens called in the forenoon. I arranged with them to give a fishing and dredging party any day that would suit Wyville Thomson." The party was fixed for the following Thursday. The record of it is given above (p. 226).

Masters went, on April 25th, on the invitation of Mr. Murray, to see the collections on board the *Challenger*. In the evening of the same day William Macleay "went to dinner with Captain Nares and Professor Wyville Thomson on board the *Challenger* at 6.30 p.m. The party consisted of Onslow, Badham, Hill, Cox, Morris, Captain Chapman and Captain Maclear and myself. We had a good dinner, spent a most delightful evening, and had a look at some of the curious things collected. It was 11 o'clock before we left."

On the following afternoon the visitors to Elizabeth Bay House included "Onslow, Badham, Stephens, Davis, Cox, and Murray of the *Challenger*".

Dr. Crosbie and Dr. W. von Suhm, both of the *Challenger*, called on April 30th—"They both take an interest in, and show some knowledge of, entomology. I showed them some of my collection, and we had a general talk about Crustacea and other marine animals, these being the things Dr. von Suhm has chiefly studied."

Mr. H. N. Moseley had been away in the country for part of the time, the guest of Sir William Macarthur at Camden Park. On his return, he called on William Macleay, and stayed to lunch, on May 6th—"Mr. Moseley, one of the naturalists of the *Challenger*, came here about 11 o'clock, and remained till 2 p.m. He is a very intelligent man, with a general knowledge of Natural History. He seemed to enjoy looking over my collection."

The Officers and Scientific Staff of the *Challenger* gave a ball on May 8th. Dr. Badham gave a dinner on May 14th, the guests being "Captain Nares, Captain Maclear, Dr. Alleyne, Captain Stackhouse, Cochrane, and myself."

Captain Nares was to have dined at Elizabeth Bay House on May 17th, but was unable to do so. Mr. Moseley came to breakfast on May 21st. "He brought me an egg of *Diomedea chlororhynchus*. I gave him three bats, some of their parasites, a Stylopised wasp, and a male *Psalidura*, as he wished to examine the forfex."

William Macleay met Wyville Thomson again, in town, on May 29th. The Professor had just returned from a successful and enjoyable trip to Queensland; three specimens of *Ceratoodus* were procured. In the evening, the Australian Club gave a dinner to the Officers and Scientific Staff of the *Challenger*.

On June 1st, Professor Wyville Thomson, accompanied by Mr. Deas-Thomson, made a visit to the University, and afterwards came to Elizabeth Bay House

to lunch. "We had also W. A. Dumaesque and the Rev. Mr. Stanley of H.M.S. *Pearl*. I showed the Professor a number of things."

The *Challenger* naturalists gave a dredging-party on June 3rd. William Macleay had a prior engagement, and was unable to join the party. Captain Stackhouse and Dr. Cox afterwards gave William Macleay some of the specimens, obtained by the dredge, offered to the guests.

William Macleay met Wyville Thomson in town on June 5th. The following day, Dr. von Suhm came to lunch at Elizabeth Bay House. "I had a good talk, and looked over the crustaceans and insects with him."

For June 7th the record is—"The party this afternoon consisted of Deas-Thomson, Stephens, Davis, Dr. Badham, and Professor Wyville Thomson, who came to say good-bye, as the *Challenger* positively leaves to-morrow". The vessel sailed on the following day.

To go back for a moment, on April 24th, William Macleay notes—"In the afternoon, Masters and I looked over and named some insects in a collection of Richmond River things which Dr. Wyville Thomson sent for my inspection." The examination was continued on the following day. For April 27th, the record is—"Professor Wyville Thomson sent me, this morning, for inspection, a number of bottles filled with Australian Coleoptera. Masters and I looked them all through, and found them to be only duplicates of the Richmond River collection sent a few days ago, with the exception of a few Western Australian things which were separated from them." The naming of the collection was continued on the following day, and completed on April 29th. On June 2nd, it is noted that, "I sent Professor Wyville Thomson's boxes on board to-day, and sent with them two cases of my wine (red, 1871)", the product of his vineyard at Lake Albert, near Wagga.

The visit of the *Challenger*, and the opportunity which it offered for friendly intercourse and hospitality, was most enlightening and stimulating to the naturalists and other scientific men of Sydney; and was an inspiring experience to William Macleay in the way of further development of his collection, especially in regard to marine forms.

(iv.) Proposal to establish a Natural History Society.

The records in the Journal dealing with the proposal to form a new Society towards the end of 1874 have been given in the Presidential Address by Dr. T. Storie Dixson (PROCEEDINGS, 1904, p. 8).

(v.) Resignation from Parliament.

As the year advanced, William Macleay became more and more deeply immersed in his scientific enterprises. The prospective Linnean Society of New South Wales promised additional, unexpected and unrealizable responsibilities, from October onwards. He began to realize accordingly that he had so much in hand, that it was becoming desirable to curtail some of his engagements in other directions, especially in regard to politics, which made the largest demands on his time and energy. He had completed about twenty years' service as a Parliamentarian, from May 22nd, 1856, as a Member of the Legislative Assembly during seven consecutive Parliaments, ever since the establishment of Responsible Government; and before this in the old Legislative Council, from 1854-56. He was unwilling to put his constituents to the trouble of an election during the life of Parliament. But on November 25th, a political crisis arose. "Mr. Combes carried

his motion to go into Committee tonight by a majority of two, 28 to 26; and, in Committee, carried a Resolution by a majority of one; but, when reported to the House, it was rejected by the casting vote of the Speaker. Mr. Parkes (the Premier), however, said he accepted it as a defeat, and adjourned the House." Parliament was prorogued by proclamation next day. The Journal records—"November 26th. I have made up my mind not to offer myself again; and, as soon as the dissolution is proclaimed, I shall send an Address to the Electors of the Murrumbidgee telling them so. I intend to give my attention henceforth entirely to Natural History, and the improvement of my Museum." The Assembly was dissolved by proclamation on the 28th. The Address to the Electors appeared as an advertisement in *The Sydney Morning Herald* on 30th November. Much regret at his retirement was expressed personally, as well as by letters and telegrams; and he was urged to reconsider his decision, but courteously and steadfastly declined. Mr. William Forster, a squatter as well as a politician, with William Macleay's support, was elected to fill the vacancy.

1875.

The overhauling and rearrangement of the Macleay Collections, and their development into a general collection, initiated in the previous year, involving much routine-work, was strenuously continued as far as possible during the year 1875. The Linnean Society of New South Wales entered upon its scientific career in January, necessitating additional responsibilities for William Macleay, at a rather inconvenient time, when he was busy with other matters. But the most important event of the year was his expedition to New Guinea, earnest preparations for which began immediately after his purchase of a vessel on February 26th.

Routine work, save for necessary interruptions, was systematically continued. The general trend of it is indicated by several out of many entries in the Journal. "January 1st, 1875. Neither Masters nor I made a holiday of it, and we were joined in our work by Stephens. It consisted of bottling and looking over Asterids, &c., from the Endeavour River, and in looking over a cabinet of dried fish, part of the W. S. Macleay collection. . . . Stephens left after luncheon; and Masters and I marked (in Gray's Handbook) all the Australian birds still desiderata. I must now have about 400 species out of about 660 in all." "January 8th. Masters and I put out in order all the Australian Zygaenidae." "January 15th. Masters and I put aside the birds I purchased yesterday (94 specimens, from Palmer). We then laid out the drawers of Australian Lithosiidae and Arctiidae." The Liparidae, Bombycidae, Cossidae, Hepialidae, were next taken in hand, and finished with on February 23rd. "March 11th. Masters and I were, for most of the day, arranging and naming the foreign Lycaenidae (*Thecla*); we got on very poorly at it." Before this group was finished, and the foreign Hesperidae and Australian Micro-lepidoptera taken in hand, this branch of the routine-work was temporarily suspended, until after the return from New Guinea. But besides this much time was consumed in putting away collections received, and in preparing collections to be sent as exchanges.

Meanwhile, part of the entry for February 5th may be mentioned. "This day completes the first year of Mr. Masters' curatorship; and I think that the additions to my museum during that time have been very large indeed. I have now over 1,000 species of birds, of which 395 are Australian. There is a fine collection of fish. The reptiles are rapidly increasing. A large number of specimens from the

Endeavour River, California, &c., have been added to the entomological collection. While of shells and marine animals, we have accumulated a vast number."

Important additions were made by donations, exchanges, purchases, as well as by the efforts of William Macleay, Masters and Spalding, before the expedition to New Guinea started in May.

Donations of a miscellaneous character were received from—Mr. H. H. B. Bradley (a very large brown snake and two lizards)—Mr. Brazier (sixteen eggs of a Tern, from Treasury Island, one of the Solomon Islands; specimens of *Syngnathus* from New Caledonia and the Solomon Islands; some donations, chiefly minerals from New Caledonia)—Dr. Cox (a second specimen of *Silubosaurus* from the Darr River, and a sea-snake and a lizard from the Lifu Islands; a living Echidna, and two small lizards and three species of small fishes from the New Hebrides; a living young *Ornithorhynchus*, and the viscera of an iguana, which yielded two species of nematodes; two gudgeons from Mulgoa, and a *Chironectes*)—Mrs. Glover, Port Stephens, per Mr. Brazier (a green treesnake, and *Vermicella annulata*)—Mr. G. Masters ("a beautiful fish quite new to me, and two young Samson fishes; and a number of other fishes caught by him from the jetty)—Captain Onslow (a living specimen of *Podargus humeralis* from Camden)—Mr. E. P. Ramsay (four specimens of *Ornithoptera Cassandra*, "promised for years"; a fine specimen of *Ceratodus miolepis* from the Mary River, "quite distinct from *C. Forsteri* of the Burnett River")—Mr. Stephenson (a small ringed snake)—The carpenter of the *Chevert* (two small living turtles from Singapore).

Exchanges during the year were carried out with:

F. and H. W. Bates, of London—one small box of Heteromera from the former; and another, chiefly Carabidae from the latter; "both contained some newly described species"; received April 15th.

California Academy of Sciences—a box of 137 species of mollusca "from various parts of the Pacific"; received on April 5th. "Brazier was here in the afternoon and commenced preparing a return box of shells", about 160 species, sent on April 9th.

Dr. Dohrn, Stettin—"April 9th. I had a letter from Dr. Dohrn, who seems delighted with the insects I sent him." Two boxes of Coleoptera received (receipt noted on October 11th). "Dohrn's boxes contain some good things."

Henry Edwards, San Francisco—four consignments: (a) A box of insects; "it contains some very choice Diurnal Lepidoptera"; received on January 27th. (b) "Three small boxes of Coleoptera, three or four of shells, and some small bottles of Crustacea, Julidae, &c."; received on February 25th. (c) "A small box of beetles (Malacoderms), and one of shells"; received March 18th. (d) Lepidoptera (receipt noted on October 11th, without further details). Two consignments were sent in return: (a) A box of rare, northern, diurnal Lepidoptera, (b) "Two small boxes of phytophagous Coleoptera, about 160 species"; sent on April 9th.

Augustus Simson, Hobart—A parcel of Mollusca, 57 species, and some lists of names of others, was sent, on January 18th, in exchange for shells received in the previous year.

Important additions by purchase, include the following from:—

Mr. Brazier—about 150 species of Mollusca "not in my collection, and some Crustacea from New Caledonia"; February 10th.

Mr. Gruber, San Francisco—Two consignments: (a) A box of Californian bird-skins, 100 species, "among them some valuable specimens; a few, too large for the drawers, were packed away in a case in the small room of the library";

received February 12th. (b) A large box of bird-skins; "some valuable birds from the Arctic regions, the Pacific, and from Arizona, mixed with some common enough things"; receipt noted October 10th.

Mr. Boucard, London—a second instalment of 800 birds (which arrived during the period when the Journal was not kept. Noted without further particulars, January 26th, 1876).

Mr. Duboulay, Perth, W.A.—a box of insects, received April 2nd. This was set aside, unopened, pending further information; and is not mentioned again.

Mr. Palmer, Taxidermist, Sydney—At different times, up to April 24th, 88 skins of Australian birds, some new to the collections, and others duplicates for exchange purposes; 30 Californian birds; and two cases of mounted Samoan birds, including *Didunculus*.

Mr. C. Pearce—a good collection of birds from Fiji. Three new species from this collection were described, and the whole collection (37 species) catalogued by E. P. Ramsay in his paper "Remarks on a Collection of Birds lately received from Fiji, and now forming part of the Macleayan Collection, at Elizabeth Bay; with a list of all the species at present known to inhabit the Fiji Islands" (Proc. Linn. Soc. N. S. WALES, Vol. i, Part i, p. 69; read December 27th, 1875. See also p. 44.).

Mr. Waller, Taxidermist, Brisbane—16 birds, 13 of them new to the Collection; received January 27th.

Mr. West, Wagga—10 birds; received January 4th and 24th.

Mr. Webb, King George's Sound—Two consignments: (a) 30 mammals, and 90 birds, some large, as Emus, received on February 16th; "a very good lot; about 25 species of the birds and all the mammals were not previously in my collection". (b) A second lot of mammals (9) and birds (12), "two of them new to my collection", together with spirit-specimens of snakes and lizards.

Mr. Masters purchased, from local collectors, 10 species of birds, mostly from Cape York, a Cuscus, and a Koala, on January 9th; and other small lots.

But there were others, besides the above mentioned, without being specified, in the entry for January 26th, 1876.

E. Spalding left early in the new year for Queensland. The Journal entry for December 31st, reads—"Spalding called in the morning. He seems anxious to go on another expedition, and I think I shall humour him. He thinks that a new settlement just forming on the Daintry River would be a good place." "January 7th. I saw Spalding to-day. I have arranged with him to go for a few months to Townsville and contiguous places." On January 11th he came, and "packed his vats, jars, cases, &c.", and left by steamer for Townsville on January 18th. A first instalment of results was received on March 18th: "a number of good bird-skins, only three, however, of species I had not got; two boxes of insects, the Coleoptera not differing from those of Port Denison, but the Lepidoptera (Moths) very fine; and spirit-specimens of Entozoa, &c., snakes and lizards, some of these last evidently new species". Three days later a telegram from Spalding announced that he had an attack of fever, and had decided to return. He arrived on April 5th, in a very weak state, bringing the rest of his collection "a few birds, a Jabiru and two Finches, being the only novelties". "May 3rd. I saw Spalding to-day. He still looks very ill. He wishes to go with my expedition; and, as Dr. Cox says it will do him good, I will take him."

No land-collecting, or shore-collecting of importance was attempted, but important additions were made to the ichthyological collection. "January 22nd.

In the afternoon there was an extremely low tide. Masters, Brazier, and I went down to the Bay, and waded about for some time, but we did not get much." "January 23rd. Hastie hauled the beach here about 7 p.m., low water but rising. He had a wonderful haul of bream, yellow-tail, stingrays, &c.; these last seemed to have numerous young in a foetal state. I secured one or two good fishes, and a *Neptunus pelagicus*, of which there were at least a dozen of a good size."

Between January 4th and March 18th, seventeen early-morning visits were made to the fish-market at Woolloomooloo. William Macleay went alone twice, and twice with Masters; the latter went alone thirteen times. From this source, a number of specimens wanted for the collection were secured, including an Angel-shark, "the first I have seen", a number of others "new to me", some large crabs, and a small turtle. Also "a fine specimen of *Elacete nigra* or a new species, the King-fish of some fishermen. Dr. Alleyne and Stephens came to look at it, and stopped to luncheon". One of the fishermen brought a large numb-fish, or Electrical Ray, and a Squilla.

On five evenings Masters fished from the jetty, and got some desirable specimens, including *Batrachus dubius*, *Chiloscyllium*, *Plectropoma ocellatum*, and a Stingray "which was delivered of some good-sized young ones while lying on the jetty". On one occasion William Macleay joined him.

THE CHEVERT EXPEDITION.

The great event of the year 1875 was William Macleay's expedition to New Guinea, during which he was absent from Sydney from May 18th to October 11th. He must have had some such project in his mind for some time; and apparently his intentions had been communicated to some of his friends. The earliest records in the Journal in any way bearing on the enterprise are—"October 3rd, 1874. Dr. Cox called this forenoon to speak about a collector in Torres Straits": and "October 30th. I had a letter from a Mr. Webber, an old steamship-skipper offering to sell me his shells, and to command for me any vessel I may fit out for a scientific cruise."

Inspection of, or inquiries about, a steamer and two barques advertised for sale were made. The sum of £4,000 was asked for the steamer, and £6,000 for one of the barques; the accommodation afforded by the second not being satisfactory. A small steamer (probably the *Thetis*) for the Government, on the stocks at Cockatoo Island, was visited in company with Mr. Moriarty. After seeing this vessel, and his inquiries as to cost, William Macleay records on November 14th, "I suspect that I shall not be able to get a decently large steam-yacht under £4,000".

The record for January 5th, 1875, is more explicit—"Dr. Cox called to-day with Captain Edwards, an old sea-captain well acquainted with Torres Straits and the South Sea Islands. I had a long conversation with him. He is to look out for a vessel for me suited to my proposed trip to New Guinea." As the result of Captain Edwards' inquiries, several vessels, including a handsome brig of 300 tons, were inspected on January 12th, without results, as either the passenger accommodation was unsatisfactory, or the price was very high. Captain Edwards was therefore instructed, on January 14th, to advertise for a vessel for charter. "January 19th. I went to town early to call on Captain Edwards. We find it almost impossible to get anything suitable". Two vessels were inspected on February 8th and 10th, and an offer was made for one of them, but declined. On February 19th, a brig was inspected, but she was not satisfactory. Finally, on

February 20th, Captain Edwards reported another barque, which was inspected on February 22nd. "With Captain Edwards, I went across to Mort's Dock and looked at the barque *Chevert*. She is large and strong; and if the marine surveyor's report is favourable, I shall try to buy her." On February 23rd, a very favourable report was received from, and discussed with, the surveyor; and the result was that "I authorised Edwards to offer £3,000 for her". The owner wanted more, but eventually accepted the offer. "February 26th. I met Captain Edwards at the Club. He announced that he had completed the purchase of the *Chevert* for £3,000. I gave him a cheque for the amount; and he takes possession to-morrow." The new owner, accompanied by "Davis, Stephens, Masters and Captain Edwards visited the ship next day. A second mate and four Rotumahan sailors were placed in charge of her". "We settled what carpenters' work is to be done, and are to get an estimate on Monday. I shall now probably start a month sooner than I intended, and give up my Murrumbidgee trip." On March 1st, "I met Captain Edwards at Mitchell & Co.'s about the ship. We went to the Custom House, where I made a declaration that I was a British subject, and the owner of the *Chevert*". "March 4th. I went to town early and took Captain Onslow to see the ship. He likes her exceedingly." The alterations in the way of improved cabin accommodation at a cost of £140, were approved of, and ordered to be completed without delay. The carpenters having all but finished on March 15th, a ship's carpenter was engaged to do the rest. On March 18th, the vessel was towed to an anchorage in Elizabeth Bay opposite Elizabeth Bay House. Thereafter, ballast not required was landed by lighter at the jetty; and the ship made ready to receive stores, coal, forage, and equipment for the voyage.

Captain Onslow's approval of the vessel was important, because he was to be a passenger, in the capacity of William Macleay's companion and nautical adviser. As mentioned above, Captain Onslow was Alexander Macleay's grandson; and as Lieutenant had served on board H.M.S. *Herald*, a sailing-ship, under Captain Denham, when carrying out survey work on the Australian Station, off the Great Barrier Reef, in Torres Straits, as well as on the west coast. He and William Macleay were close friends, both Trustees of the Australian Museum and for some years prior to William Macleay's resignation in November, 1874, both Members of the Legislative Assembly. Moreover, Captain Onslow was interested in Natural History, especially in Conchology, and the donor of his collection of shells, and of other specimens to the Macleay Museum.

Meanwhile, besides the question of stores, and other supplies, much time and energy were devoted to providing a steam-launch. "March 5th. I went this morning with Captain Edwards to look at some steam-launches, but saw none to suit." After further fruitless inquiries and inspections, it was decided, on March 11th, to accept two offers from contractors, one to build the hull, and the other to construct the engines, the work of both to be completed in six weeks. Seven weeks later the launch was still unfinished. "April 29th. The delay in building the steam-launch will probably make it after the 12th of next month before we get away." Eventually she was delivered on May 17th, three weeks late; was got on board the same day, not without difficulty; and the *Chevert* sailed the next day.

On the Monday (March 1st) after the delivery of the vessel was completed (on Saturday, March 27th), the outfit was taken in hand. Captain Edwards was to command the *Chevert*; and, therefore, was consulted, and accompanied William Macleay to various business establishments. The Journal, from day to day,

records extensive purchases, including—ten iron tanks for water, coal, provisions, stores, vegetables, forage, furniture, linen, bedding, arms, ammunition and accoutrements, nets (including a seine, 60 fathoms long and 18 feet deep, together with a trawl-net, &c.), dredges, lines, fish-hooks, fish- and rat-traps, sieves, harpoons, bottles, tubes, tanks, boxes, spirit and et ceteras for specimens, medicine chest and necessaries, a large assortment of "trade" for bartering for specimens, stationery, books, &c.

On April 20th the Journal records that great progress has been made on board the ship to-day; most of the water has been supplied; and a large lighter is alongside, unloading provisions, &c. Some of the entries towards the end of April onwards to the date of sailing are interesting. April 27th—"Masters continues getting things ready for my expedition. It ought to be well found in everything, judging from the bills that are coming in." "April 30th. I am anxious to know all my liabilities." "May 14th. I wrote some huge cheques to-day." "May 15th. I paid nearly all my bills to-day", and the rest were paid the next day.

Purchases were supplemented, in a very pleasing manner, by gifts or loans from friends. Sir William Macarthur, of Camden, in response to William Macleay's offer to take one or more plant-collectors, equipped and sent two of his gardening staff, Messrs. Reedy and Dingwall, to collect botanical specimens, and bring back living plants in Wardian cases. "April 1st. Sir William Macarthur came to luncheon, and I had a long talk with him about his men's outfit for the expedition." Three subsequent visits to Elizabeth Bay House, as well as to the ship, were made on April 9th (with Reedy), April 15th, and May 7th. The plant-cases, charcoal, &c., were sent down and put on board on May 14th. In the meantime, Sir William Macarthur had generously sent down from Camden two liberal contributions to the commissariat—"April 23rd. Two tons of pumpkins, sent by Sir William Macarthur, from Camden, were put on board to-day." And "May 7th. A large load of things from Camden was put on board this morning—eight quarter-casks, and some octaves of Camden wine, three bags of beans, two ditto squashes, &c., &c. Sir William Macarthur went on board in the afternoon." "May 13th. E. S. Hill was on board to-day, and brought with him some heaps of Illustrated Papers. He has been most kind throughout, having lent me a chronometer, sextant, an artificial horizon, aneroid, &c., &c." "April 29th. W. S. Mort has offered me the use of an ice-making machine for the voyage, which I shall accept with thanks." "May 6th. Onslow went with Captain Edwards to see into the working of the ice-machine Mort has lent me."

Commodore and Mrs. Goodenough visited Elizabeth Bay House on February 28th—"The Commodore promises me charts, &c., of the New Guinea coast."—"March 2nd. I went to town early to make some enquiries connected with my New Guinea expedition. I called on Captain Hixon to ask about charts, &c. He is to write to Brisbane for the latest information."

Mr. Phelps presented some "Shrabsika cheese" for the voyage—"May 15th. Stephens brought me two large packages of gingerbread, made by Mrs. Stephens, for the voyage."

Before the departure of the *Chevert*, William Macleay was the recipient of many tokens of friendship and good will from a number of his friends. On April 3rd, Mr. J. J. Phelps, a squatter, and a Parliamentary friend, Member for Balranald, and the donor of specimens to the Macleay Collection, gave a fishing picnic, in William Macleay's honour. "Phelps gave a fishing party to-day. We

started in a snug steamer, about 10 a.m., and had a most enjoyable day. The party consisted of Phelps, Stackhouse, Alleyne with his boat's crew, Forster, Badham, E. S. Hill, Hay (Murray), Day (Albury), Raymond, Markey, Stephens, Masters and I. We had Charlie Hastie's boat, net, and crew, Tom Mulhall and his dredge, &c. I got a few things for preservation, the best, a species of *Pelor* or some such fish."

The Linnean Society of New South Wales gave a well-organized picnic on May 1st. "April 24th. Sir E. Deas Thomson, Captain Stackhouse, and Sandeman invited me to-day to a Picnic to be given by the Linnean Society to me, their President, previous to my departure for New Guinea." "May 1st. The picnic to me nominally by the Linnean Society came off to-day. There were three steamers, the *Leila*, Moriarty's steam-yacht, the *Agenoria* and the *Galatea*. The party numbered about sixty; and after fishing, &c., at 3 o'clock we sat down to a sumptuous banquet at Hunter's Bay, Middle Harbour. (Sir John) Robertson was in the Chair. I sat on his right and returned thanks. The only other toast was proposed by Badham in French, in honour of the French visitors, Simon, the Consul, and the Captain of the *Cher*. They both responded in French. We got home about 7 p.m., after a most pleasant and enjoyable day."

"May 3rd. I was entertained this evening at the Parliamentary Rooms at a sumptuous dinner given to me by a large number of Members of both Houses of Parliament. About sixty Members were present, Hay, the President of the Council, in the Chair. It was a splendid affair, and highly gratifying to me. The speeches, &c., went off very well."

"May 4th. I dined to-day with Dr. Roberts, at the Union Club. We had a first class dinner; present, Dalley, Sir E. Deas Thomson, Onslow, Watt, Knox, Dr. Boyd, Dr. Alleyne, and others."

"May 8th. I lunched at the Club, and afterwards revised the sheets of the Proceedings of the Linnean Society. I returned home to dress for a dinner given to me, at the Union Club, by the Treasurer and the Attorney-General. There were eighteen in all present, including Martin, with whom I shook hands. The dinner was excellent."

"May 16th. On Tuesday the Ministry are giving a large party on board a Hunter River steamer, to accompany me down the Harbour to see me off, so that honours are being showered upon me."

"April 12th. I had a letter to-day from Dr. Patterson asking me to allow myself to be nominated as a candidate for a vacancy in the Senate of the University. I intend to decline." Nevertheless, perhaps in recognition of the intended bequest of the Macleay Collection to the University, he was elected a Member of the Senate on May 15th; and he continued to act for the rest of his life.

William Macleay kept a separate Journal during the voyage. This was among the relics which Lady Macleay was good enough to hand over to me. The gist of it was published in *The Sydney Morning Herald* of October 11th, 1875; and is reprinted in the Introduction to the Macleay Memorial Volume (p. xxxii). Only a brief summary need be given here.

The objective of the first stage of the voyage was Somerset, Cape York, because this was a convenient place for watering the ship, and getting and sending mails from or to Sydney. The *Chevert* left Sydney on May 18th, and anchored off Shallow Bay, about a mile and a half beyond Somerset on June 18th. "Cape York, the most northern point of Australia lies about three miles west of us."

En route, the vessel found anchorages off (1) Percy Island, No. 2, 28th-29th May; (2) the west side of the largest of the Palm Island group, May 31st-June 3rd, where the steam-launch was unloaded; (3) Brooke Island, June 3rd-4th; (4) North Barnard Islands, June 4th-5th; (5) Fitzroy Island, June 5th-6th; (6) Low Wooded Isle, June 6th-7th; (7) Turtle Reef (covered entirely at high tide), June 7th-8th; (8) No. 4 Howick Group, June 8th-9th (no landing here); (9) Flinders Island, June 9th-10th (no landing); steam-launch visits Barrow Island; (10) 10 miles south-east of Cape Sidmouth, June 10th-11th (no landing); (11) Six miles south of the Piper Islands, June 11th-12th (no landing); (12) Cape Grenville, June 12th-17th and watering ship from 14th-16th; (13) Boyston Cay, June 17th-18th (no landing); (14) Somerset, June 18th-26th.

As daylight was necessary for navigation, the stoppages Nos. 9, 10, 11, and 13 were for the night only, and there was no opportunity for landing. When this was the case, line-fishing at night was carried out, and the dredge with swabs put down, not without success. Everywhere else, though sometimes the weather was unfavourable, systematic collecting was carried out.

Before reaching the Percy Islands, many sea-birds were seen, and specimens of *Diomedea melanophrys*, *Pterodroma macroptera*, *Fregetta melanogaster*, and *Oceanites oceanica* were obtained. The day after leaving Sydney, a shark, measuring 10 feet 9 inches, was caught. This also yielded examples of *Lernea* sp.

"On Percy Island, a crow, a curlew, and a small flycatcher were all the birds got. But last night's fishing made up for much lost time. By the seine, drawn four times on the little beach at our anchorage we got some of the finest garfish I ever saw; indeed so enormously superior in size were they to anything even seen in Sydney, that Mr. Masters put a few into the tank, under the impression that they could not be of the same species. The Whiting, though few in number, were also very fine. There was a pike or two-jawed garfish of enormous size. The rest of the fishes were chiefly large examples of Labridae and of brilliant Carangidae, nearly all new to me. But the line-fishing over the stern of the ship up till 3 o'clock this morning was still more productive. Many species of fine large schnapper-like members of the Sparidae, all new to me, a very fine Siluroid fish, and several specimens of a shark, apparently of the genus *Loxodon*, full-grown at a length of 20 inches, the young free in the uterus. The dredge was out over the stern during the night, and, in the morning, with the swabs, presented a fair return, one or two good shells, including a new species of *Murex*, Crustacea, a number of Polyzoa, Polypifera, Echinoderms, Foraminifera, &c. I have tried to preserve some Gorgonias in a solution of chromic acid, as an experiment, at Captain Onslow's request. The catch was most miserable in the Insect-tribe. Petterd looked solely after them, and got nothing worth notice, excepting about twenty spiders, which were good. Danaids and *Eurycus* were abundant, and were seen far out at sea."

Two not altogether unprofitable days, notwithstanding squally, showery weather were spent at the Palm Islands. "June 1st. We divided ourselves, as follows. Masters, Spalding, and Dr. James, with a native guide started inland. Reedy, Dingwall, and Petterd also went inland in a different direction. Onslow, Cashman, the Second Mate and Davis, A.B., went along the coast to the south; while Brazier and I took the reefs to the north. The total captures for the day comprised two wallabies of a new species, twenty-five birds, mostly of the extreme northern species, two of these shot by me, new to the collection—the Black Oyster-catcher, and the Northern Gull—and one shot by Masters, a new species of

Zosterops. A number of good shells, crustaceans, echinoderms, &c., were got upon the reef, and a new *Helix* on the land. Very few insects were taken, but enough were seen to show a great wealth of Diurnal Lepidoptera—*Papilio*, *Ulysses*, *Cethosia*, *Ornithoptera*, &c. Reedy's botanical collection was bulky and satisfactory, but nothing new, he believes, which was scarcely to be expected. On our return to the ship, we found great progress had been made in the arrangements for putting the steam-launch overboard, and at 3 p.m. the work was successfully accomplished. We are to stay here to-morrow for various reasons, and hope to have another successful day's collecting. The beaches, however, are too shallow, and the old coral extends too far out, to enable us to use the seine with safety." "June 2nd, the day has been squally, with frequent showers, but bad though it was, we could not afford to lose it. . . . We got very few birds to-day; the reef-birds, which we mostly wanted, were so shy and wild, that there was no getting a shot at them. Of small fishes, crustaceans, and other marine forms, however, the reef furnished us with a rich harvest." Some Blacks, visitors from Cleveland Bay, were met with.

The weather was stormy while the ship was anchored off Brooke Island, June 3rd-4th, but a party landed, and made rather a good collection, including birds (*Sula fiber*, *Haliaeetus leucosternum*, *Megapodius tumulus*, a goatsucker, etc.), crustacea, echinoderms, and a few land shells.

At the North Barnard Isles, June 4th-5th, the weather improved. A landing-party did well on the reef at low water; and Masters got a male and two females of the rare *Ptilotis Victoriae*.

Fitzroy Island, like some of the others visited, was rough and precipitous, and almost impenetrable from the density of the brush and the length of the grass. Very little was collected except some desirable birds, though all the collectors were active.

The next stoppage, June 6th-7th, "a mangrove sandbank surrounded by a large coral-reef, marked on the chart "Low wooded Isle", distant 45 miles from our last anchorage", provided better opportunities. "June 6th. After dinner, we all went ashore to examine the reef, Masters, Spalding, and Dr. James with their guns, and the others with bags, baskets and buckets. It was the first regular reef I had been on; and, though I did not see any of the great beauty and variety of colouring said to be characteristic of the outer Barrier Reef, I still saw enough to impress me deeply with the wonderful variety of life with which it abounded. The whole reef was literally teeming with life—fishes, crustaceans, echinoderms, coral-polyyps, etc., in countless numbers. Of the first of these, we caught numbers in the shallow waters on the reef, a sport in which all hands joined. A good many new and beautiful species were taken, including three species of sharks, one, spotted, a great beauty. Bêche-de-mer of many different species was also abundant. We saw a great many examples of *Tridacna*, *Hippopus*, and other large shells, which though very striking, are sufficiently common; but Brazier has got some good things among the smaller species. The shooting-party got specimens of the white reef-heron, some gulls, and a tern. We returned to the ship at sunset, loaded with specimens and trophies."

A party landed on a small sandbank, covered at high tide, off Turtle Reef, on June 7th, but got little except two specimens of a Tern new to the collection.

The ship arrived late in the evening, and left again early the next morning, at the next four anchorages—No. 4 Howick Group, Flinders Island, ten miles south-east of Cape Sidmouth, and six miles south of the Piper Islands. But the

steam-launch visited Barrow Island on 9th June, the wind being light, and afterwards overtook the ship again. Two birds new to the collection, the Caspian Tern and *Ptilotis versicolor*, some lizards, land-shells and a few insects were procured. The night-lines off No. 4 Howick Group brought up a considerable catch of fishes—"mostly small, but of six species quite new to me". On June 10th, the breeze was so light that the dredge was put overboard, and brought up a satisfactory lot of mollusca, crustacea, &c. Fishing over the stern on the night of the same day was carried out with success, as also on the following night.

Five days' stay off Cape Grenville, June 12th-17th, were utilized to the full, notwithstanding a gale with showers on two days, in watering the ship, in dredging and seining, in reef- and shore-collecting, and in visiting both the mainland and some of the islets for land-animals and plants. The mail-steamer for Sydney, two days early, unexpectedly hove in sight on June 14th. The launch happened to have steam up; and the Captain of the S.S. *Normanby* kindly stopped, and took charge of the *Chevert* mail, together with some casks and packages of plants collected by Reedy, for Sir William Macarthur. On the same day some intricate navigation was carried out by Captain Edwards, with great skill and judgment. "In order to get into the deep and well-sheltered bay, where we now lie, it was necessary, in approaching it from the south, to pass over a rocky shoal—a sort of continuation under water of the Home Islands and the mainland. This was done with pluck and caution. All sails, but the topsails, were taken in; and the launch was kept constantly sounding 400 yards ahead. At one time, we could not have had above two feet of water to spare. Watering the ship occupied three days. Casks were filled at the source of supply, rolled along the beach at low tide, and taken off to the ship in boats. Five loads of the big boat, about 1,000 gallons, were taken on board on June 14th. These were supplemented on the next two days, and the watering was completed on the 16th. A party of twenty Blacks rendered most efficient aid in the watering-operations. The Captain speaks highly of the assistance rendered by the Blacks. They seem to prefer hard work for biscuit, etc., to their very easy way of supplying themselves with their ordinary necessaries of life. I dare say it is simply the love of change and not love of labour which moves them. Altogether they are a most excellent lot of niggers, affable and lively in the extreme; and they exhibit a desire to make themselves useful and agreeable. They have found out my interest in animals of all kinds, and have consequently all become collectors. To-day they brought me fishes, shells, &c., and a species of snake new to me." Others came off to the ship in canoes, as soon as she anchored, offering fishes which they had speared.

Mr. Brazier systematically carried out very successful dredging. "June 15th. Brazier got very few shells, but was most successful in Echinoderms and Polypifera, including one *Comatula* of large size, the most wonderful example I have seen." "June 15th. Brazier got many fine Echinoderms and Mollusca—altogether the most successful day with the dredge we have had."

Important additions to the bird-collection, some new and some rare, were made by Masters and Spalding. Also to the collections of reptiles and land-shells. The seine was hauled on the beaches and yielded many specimens of fishes, as also did line-fishing. "June 16th. At 12 noon, I went to a reef on the nearest island, with Masters and Brazier. We were subsequently joined by Onslow and Spalding. We got a number of good things on the reef—fishes, crustaceans, echinoderms, &c. Masters went after birds, and succeeded in getting about half a dozen speci-

mens. Reedy and Dingwall went ashore early, to collect plants on the mainland." The botanical collectors throughout were no less enterprising than their zoological colleagues. The additions to the collection of marine invertebrates were very numerous. But the search for insects yielded rather poor results. Geological specimens, here as elsewhere, were accumulated.

There was no opportunity of landing at Boyston Cay. Seven and a half days' stay was made at Mud Bay, about a mile and a half beyond Somerset. It was not easy to reach the settlement, even with the launch, as there was a strong head trade-wind blowing through the funnel between Albany Island and the mainland, and the current with the flood-tide was quite five knots an hour. Nevertheless visits were made to the settlement every day, the first on the morning of June 19th. "After breakfast we got the launch alongside under steam, and with the dingy towing behind, the Captain, Onslow, Masters, Brazier, Reedy, and myself started for the settlement. We were met at the landing-place by Mr. Aplin, the Government Resident, who expressed himself as very glad to see us; and asked us to accompany him to his residence, a roomy, comfortable cottage situated on an eminence commanding a beautiful view of the harbour and anchorage of Somerset. We met, at his house, Mr. Beddome, the late Resident, who has now a pearl-shelling establishment on a neighbouring island; Broadbent, a bird-collector, had lately left, also Mr. D'Albertis, an Italian naturalist, who had gone to some part of New Guinea. Mr. Macfarlane, the head of the London Mission, was also absent, having started a week ago, in the *Ellangowan* for Redscar Bay". An unusual prolongation of the wet season had caused much sickness. "The natives particularly have suffered. Mr. Aplin tells me that, within the last few weeks, the local tribe, a numerous one, has nearly died out, bodies lying unburied in some cases. Amongst the few remaining survivors, whom I saw about the settlement, the majority were ill and attenuated. Diarrhoea seems to be the disease they suffer from. I will get Dr. James to see some of them, and endeavour to ascertain the cause of such extraordinary mortality."

In the afternoon, a party went shooting and seining in Shallow Bay. "Masters got some small birds, which he thinks to be new. The fishing was a great success. We hauled the seine three times, and got a great many bushels of fine fish, large quantities of a fine Mullet different from that of Port Jackson, a species of perch resembling the Black Bream, a number of whiting, several kinds of *Caranx*-like fish, and several other species; specimens of all of them were kept. Altogether a good day for most things, but still no insects worth mentioning."

On the following day, William Macleay remained on board to receive visitors, Mr. and Mrs. Aplin, and Mr. Beddome, who came to dinner. Masters and Dr. James got a lot of small birds, some desirable specimens among them.

On June 21st, a party again visited Somerset. Under the guidance of a native policeman kindly sent by Mr. Aplin, Masters and Dr. James went out for birds, and brought back a number of small ones and one fine male Rifle-bird. "It seems that this is a bad time of the year for birds at Cape York, as they go north in the winter." Mr. Brazier with Mr. Beddome collected land-shells. Reedy and Dingwall, with a native guide, went botanising. Captain and Mrs. Were visited the ship to dine. "He has been a good deal on the New Guinea coast, and gave us valuable information." "I went out in the morning with the fishing-boat, and hauled the seine in Shallow Bay, in three places, with

great success, getting many bushels of fine Mullet, Whiting, Garfishes, &c., though but few for the specimen-tank." "Brazier got some good land-shells, one new. Reedy, I believe, also had some success." A few tons of ballast were taken on board.

June 22nd. After Masters and Brazier had packed away in a hogshead all the fish sufficiently hard to be safe (about 250), together with other specimens, in spirit, to be stowed away below, "we all went away with the launch, dinghy, and fishing-boat to Evans Bay. Masters and Spalding got some good birds, and Reedy some plants; but there was too much surface for the net or dredge. However, we called in at Nicea Bay on our return, and got lots of fine fish, Mullet, Whiting and spotted Garfish, &c."

"June 23rd. To-day, the Captain, Onslow, the Doctor and Brazier have gone to the Settlement. Masters is packing away his bird-skins; Spalding and Petterd are skinning the birds got yesterday; and Brazier is away with Mr. Beddome. After dinner, the rest of us went to Shallow Bay. We had three hauls of the seine, and got some good fish, but nothing like the quantity on previous occasions. Masters and Spalding shot a few birds; and Petterd caught a number of a *Cicindela*, like *C. epsilon*. They also set four traps, baited with cheese for small mammals. The Doctor shot a *Cuscus*, and a lot of birds; and Brazier got no end of land-shells on Albany Island, and some from other islands, presented by Mr. Beddome."

June 24th. The settlement was visited in the morning, and Captains Were and Hastings visited the ship in the afternoon. Brazier was out for the day again with Mr. Beddome, and brought back, *inter alia*, four aboriginal skulls. Masters being unwell, did not leave the ship. Spalding and Petterd went to bring off the traps, which contained two specimens of a species of *Hapalotis*.

The mail-steamer from Sydney arrived early on June 25th. The mail was received the same day; letters were replied to, and a mail prepared for the next steamer for Sydney, due in about a fortnight. "Sir William Macarthur sent us by the mail-steamer, a number of cases of oranges, and two large casks of bacon, &c. These we could not get on Friday, and I could not lose another day waiting for them. The steamer-arrangements for the delivery of cargo here are extremely bad."

The *Chevert* was under weigh at 9 a.m. on June 26th, after waiting for the launch to return from Albany Island with Tonga Joe, his wife, and family, who were to be passengers to Warrior Island, their home. "The Captain has secured the services of 'Tongatabu Joe' as pilot and interpreter to introduce us to the people of Warrior Island and New Guinea. He has been a sailor in the English navy, has wandered over many seas, and for the last ten years, has been among the pearl-shellers. We are to take his wife and family with us to Warrior Island, his present home; and after leaving them there, he says he is ready to go anywhere with us." When the passengers had embarked, "we had a good and favourable wind, and soon lost sight of the shores of Australia".

The objective of the second stage of the voyage was the western side of the Gulf of Papua, as mentioned by William Macleay, in his speech at a banquet tendered to him on the eve of his departure.—"I intend in the first place, to visit the large delta on the western side of the Gulf of Papua, which consists either of numerous mouths of one river, or the mouths of numerous rivers."

The choice of this objective was primarily suggested by Chapter xi in Volume i of Jukes' "Narrative of the Surveying Voyage of H.M.S. 'Fly', com-

manded by Captain F. P. Blackwood, R.N., in Torres Strait, New Guinea", &c. (2 vols., 1847), which, on February 28th, William Macleay notes that he had been reading.

The *Chevert* left Mud Bay, off Somerset, about 9 a.m. on June 26th, "Not having time to make Warrior Island before dark, we anchored, about 3 p.m., under the lee of Sue Island, the middle one of three, small, low islands, surrounded by reefs, named in the aggregate the 'Three Sisters', and respectively, Poll, Sue, and Bet". A collecting party landed. "Masters got some good birds, Spalding a snake, every one got something", including a number of the eggs of the Hawksbill Turtle. Two new species of fish were caught from the stern of the ship.

An early start for Warrior Island was made on June 27th, but the wind fell so light that an anchorage, three miles from the shore, in rough water was not reached until 2 p.m. The Captain, and a party, including Joe the pilot, landed. "Two of the natives came off in the boat, at Joe's invitation, to accompany us to New Guinea, and introduce us to their friends". A few small birds, a snake, some lizards, and insects were obtained.

"June 28th. We got away early, and proceeded in a northerly direction, with a man in the chains, heaving the lead, and two men on the fore top-gallant yard. Our average depths were from 5 to 15 fathoms. In the afternoon the sky became clouded, and we ran into a 2½ fathom patch, along which the ship scraped for a short distance. As soon as we got into deep water, we anchored for the night. Our position was about 10 miles south of the mainland of New Guinea, in a kind of bight formed by the Warrior Reef on the east, and Saibai Island on the west. The mainland was distinctly visible in an unbroken line almost from north-east to west. . . . There was rather a heavy sea, which caused the steam-launch (which was in tow) to knock about and against the ship; but, notwithstanding, on first anchoring, and before the current became too strong, a few fish were caught, including a very large *Gristes*-like form. Some butterflies flew on board."

"June 29th. We got away about 9 a.m., the morning being occupied in taking soundings by the boats, with the launch ahead, also taking soundings. We advanced about four miles towards the mainland about Katau, and then got into such an entanglement of two-fathom shoals, that we had to drop anchor. We afterwards weighed anchor to secure a deeper anchorage. The launch is now out searching for a passage for us for to-morrow." A few fish were taken over the stern, including a very large toad-fish. The swabs, put over the stern the previous night, were unfortunately lost.

"June 30th. It rained heavily until mid-day, and all hands took to washing clothes. After dinner it was moderately fine, and the ship was moved about a mile nearer her destination, past a reef which had been buoyed the night before. Onslow then went out in the fishing-boat to look for a passage onwards to the west of north, but was unsuccessful. The Captain and I went in the launch in a direction rather east of north, and found clear water up to within two miles of the Katau River. We have tried fishing, dredging, and tow-netting here, but with very little success. The average depth is from five to six fathoms with a muddy bottom."

July 1st was beautifully fine, but the expectation of reaching an anchorage about two miles off the village of Mokatta, at the mouth of the Katau River, was not realized until the following day. In approaching the shore under easy

sail, and with a favourable current, it was found that one of the buoys had drifted; and an unwise order to drop anchor, at a critical moment, led to its irrecoverable loss, together with over twenty fathoms of chain-cable. The vessel thereupon anchored for the night.

"July 2nd. We were engaged for some hours in vainly looking for the lost cable and anchor, and in re-doing the work of the previous day—buoying the channel. Just before dinner we ran in about two miles towards the mouth of the Katau. After dinner, a further distance of a mile, or a mile and a half, was buoyed; and, before dark, we got to our present anchorage, about two miles from the mouth of the Katau, and the native town of Mokatta. We shall probably be here now for some time, the difficulty of getting to the place—constant, shallow reefs for the last ten or twelve miles—making it necessary to utilize our position as much as possible."

The visit to the Katau lasted from July 2nd to the 12th, two days later than was intended, on account of a head wind, and the illness of the Captain. The efforts of Tonga Joe and the two natives brought from Warrior Island, to promote friendly relations between the natives and the visitors were effectual. Collecting-parties landed every day up to and including July 9th. About twenty natives, including Maino, the headman of the village, and his son, came off to the ship in two canoes, on July 3rd. After breakfast, all who could be spared went ashore in the surf- and fishing-boats. The engineer, Mr. Hargraves, had been overworked for some time, and needed a rest. The natives were most friendly. "A regular trade in cocoanuts, bananas, taro, yams and sweet potatoes was conducted by Tonga Joe, who seemed quite *au fait* at that sort of thing. As soon as the boys of the village were made acquainted with the objects of our visit, they displayed wonderful activity in collecting grasshoppers and other common things for us, which I felt bound to accept, in order not to damp their enthusiasm." The village and its surroundings were inspected. "The village consists of seven long houses, built on poles, 6 feet above the ground, with open gable-ends, and thatched roofs, exactly as described by Jukes in his 'Narrative of the Voyage of H.M.S. *Fly*'. They probably house 60 or 70 people each, bringing the total population to nearly 500. Two of the houses are parallel to the beach, the rest end on. They are scarcely above high-water mark; and behind them the ground is a stinking marsh. All round the houses are stinking remains of animals, human skulls, faeces, &c. . . . We made an attempt to get a little inland, by a path leading from the village; but, after going through a great deal of filthy morass, we found the path terminated in a clearing of a few acres planted with bananas, taro, and yams. The cocoanut-palms are numerous along the sea-border, but do not seem able to penetrate into the dense jungle behind. The Captain, Onslow, and I returned to the ship at one o'clock, leaving Tonga Joe to show Masters, Brazier, Spalding, Reedy, Dingwall, and Dr. James where the shooting was to be got." They returned to the ship about sunset, bringing a few gorgeous birds, land-shells and insects. "Nothing can exceed the richness and density of the vegetation of the coast at this point, but we have been unable as yet to discover the slightest variation in the one perfect level."

"July 4th. A large party of us, eighteen in all, started in the launch with the surf-boat in tow, to go up the Katau River. We took on board, at the village, Maino and Owta, the chiefs of the respective villages, besides Joe and our Warrior Island friends." After making good progress for eight or nine

miles, further advance was completely blocked by a great tree, which had fallen across the river, at this point about 30 yards wide, though at the mouth much wider. "The vegetation throughout was wonderfully rich and dense; and birds of strange cries and magnificent plumage were abundant, though we succeeded in getting only a very few. We frequently saw crocodiles, but none exceeding six feet, slip off the banks into the water."

From July 5th to 8th the weather was stormy, with rain. A party landed each day, but without much in the way of results for the first two days. But on July 7th, notwithstanding unfavourable weather, "the launch and surf-boat went to the landing and returned about 1.30 p.m., with half a dozen natives, to stop for the night; and a boat-load of bananas, cocoanuts, and a miscellaneous collection of arms, implements, ornaments, snakes, shells, crabs, insects, &c., collected by the natives. This is the best day, as far as collecting is concerned, we have had; and much more is promised by the natives of all the villages." A large party went again on July 8th, and, though not able to do much themselves, brought back "a number of good things, such as snakes and lizards, from the natives".

On Friday, July 9th, a second ascent of the river was attempted, but the fallen tree proved an insuperable obstacle to navigation. Otherwise the party had a most pleasant day. The bush natives up the river everywhere received the visitors well. The chief or head-man of one village, with twenty men loaded with cocoanuts and bananas entirely as a present, met them; and in all directions there were manifestations of friendship. "Knowing also of our wish for all sorts of living things, they had brought specimens of snakes, lizards, insects, as well as ornaments, &c., so that we made a really good haul this day."

A friendly farewell visit to the village was made on July 10th, and on the same day, the Captain received instructions to get ready for departing. The morning was spent in taking soundings, with the departure in view. The illness of the Captain and a strong head wind delayed any progress on the 11th and 12th. On July 13th a move was made, but, in consequence of the intricate navigation, and the time spent in sounding and finding a passage, it was not until July 16th that the way was clear. The ship anchored about five miles north-west of Warrior Island on the evening of the 17th; but moved a few miles south next day, in order to shelter under the lee of Dungeness Island. The launch took Tonga Joe and the two natives to their home at Warrior Island, and brought back some weapons and shells. Parties landed three times on Dungeness Island, on July 19th and 20th and brought back birds (a species of *Megapodius*, the frigate-bird, a fine large kingfisher, and others), lizards, fishes, mollusca, &c.

The next objective was Darnley Island, which was not reached until July 30th. "July 20th. We weighed anchor after dinner, and sailed twelve miles to our present anchorage, under the lee of Long Island. It blew hard all day, as, in fact, it has for the last fortnight. The strength of the gale has prevented our moving for the last two days." A party went ashore on July 21st, and obtained a number of birds, fishes, &c.; and again on 22nd, with the nets, to do as much as possible.

"July 23rd. We left our anchorage at Long Island at sunrise this morning, and after a rough run of some hours anchored here, under the lee of Bet Island. The wind was not only strong but unfavourable; and the frequent tacks we had to make were not without risk to the steam-launch, which we had to tow, as her boiler is out of repair. We made, in a straight line, only about six or seven

miles. There was great collecting on Bet Island this afternoon, plenty of Torres Straits Pigeons and flying-foxes, &c., but no fish, and only a few shells."

"July 25th. We weighed anchor early yesterday morning and sailed for an hour or two in the direction of Cocoanut Island, but the violence of the wind forced us to run back here (Bet Island) for shelter, where we are still lying, wind-bound. Yesterday afternoon we landed, and shot a large number of Torres Straits Pigeons, enough to feed all hands. It is a most delicious bird. The attraction for them here at this season is the fruit called the 'date', which is very abundant. As the season advances, they proceed southwards to the Australian coast. Flying-foxes are also very abundant, drawn hither, no doubt, by the abundance of 'dates'."

"On the 26th, the wind being still unfavourable and blowing a gale, we ran down to Sue Island, and anchored in a sheltered position. In the afternoon, Masters and I went ashore; and shot a few pigeons, and a number of other birds, including six species of small waders. On the 27th, we made an attempt to get eastward, between the reefs of Bet and Sue; but, after many tacks in a heavy sea, we had to run back to the lee of Sue Island. Again, in the afternoon, a party went ashore, and some good birds were got. I had the dredge dropped a few fathoms from the ship. When pulled on board, it was quite full of yearling pearl-shells, but there were no full-grown ones. On the 28th, at 10 a.m., we left Sue Island; and, after much difficulty and tacking, we reached our present anchorage, off Cocoanut Island, at 4 p.m. It is a low island, resembling the Sisters, but with a few cocoanut trees. . . . On 28th, we made York Islands, after a rapid run of 3½ hours, the wind blowing almost a gale. After making the Islands, we had to put about two or three times to find a good anchorage, much to the detriment of the launch; and, after all, had to drop anchor in an exposed position three miles from the shore. On the 30th, the wind was a little more moderate, and we weighed anchor about 11 a.m. We got upon a reef, and bumped once or twice near Tobin's Cay, and had to put about for a time; but we eventually reached this place (Darnley Island) in safety about 3 p.m., and got a smooth anchorage close inshore, at Treacherous Bay. We had time to go ashore, to visit the watering-place, and to select a place for beaching the launch."

The ship remained at her anchorage from July 30th-August 13th. The launch was beached next morning, had her bottom cleaned and tarred, and was refloated. Watering the ship occupied four days, August 2nd-5th, about 1,200 gallons being taken on board. Parties landed every day to collect. "July 31st. A few insects were got, but no birds to speak of. I anticipate doing more in the way of fish and shells here than anything else. . . . August 1st. I went ashore with Brazier to search the shore at lower water. We got a good many shells, &c. In the evening I purchased from natives a large snake, and a mummied human head." The natives were most friendly and hospitable, and the missionary (a Lifu man) visited us.

"August 2nd. All my people have been out; and, upon the whole, the collecting has been good. The chief things were got on the shore at low water. One of the Rotumahan sailors died on August 4th, and was buried in the village cemetery. August 6th. I have succeeded in getting several mummied heads; and the first mate has gone round in the boat to the village to get me a complete mummy which has been promised him. The launch is now refitted and at work again. For the last two days she has been employed in dredging; and with great success. Indeed for shells and marine animals generally, this has proved a

very good place. Fish seem to be plentiful, but we have not got many. The sucking-fish are numerous about the bow of the ship. Birds are few and not of much account. Insects are very few, but the diurnal Lepidoptera are fine."

"August 11th. We are still at Darnley Island, but intend to leave to-morrow morning for Bramble Cay, and thence to the east side of the Gulf of Papua. The *Ellangowan*, missionary steamer, came in from Cape York on the 7th, and anchored near us. The Rev. Mr. Macfarlane preached on board this ship on Sunday evening. He is accompanied by his wife, and Mr. Stone, a traveller. The *Ellangowan* left this morning on her return to Cape York. . . . Mr. Williams got the mummy on Friday, and it is now securely packed away with sundry heads, &c. I have kept the dredge going almost constantly, and we have been most successful. With other things but little has been done. I am going to leave the steam-launch here, in charge of the Lifu missionary, until I return from New Guinea, as I find that the heavy sea in the Gulf of Papua would make towing dangerous; and to hoist her on board again, would be too great an undertaking."

"August 13th. On the 11th, about midnight we were joined by the Government cutter *Lizzie Jardine*, very kindly and considerably sent from Cape York by Mr. Aplin, with our mails, &c., as soon as he heard of our being at Darnley Island. Besides letters and papers, she brought us potatoes and bacon from Sir William Macarthur; and also an additional botanist, named Knight. In order to answer our letters, we remained at Darnley Island all day yesterday. This morning we weighed anchor at sunrise, and in a wonderfully short time ran the thirty miles to this place, Bramble Cay, where we are now anchored. I went ashore with Masters and Petterd, before the others, in hope of being able to identify the owners of the various birds' eggs we expected to find; but, though birds and their young were very numerous, there were scarcely any eggs. *Sula fiber*, the Crested Tern, the Sooty Tern, and *Anous leucocapillus* were very numerous, besides *Sula cyanops*, the Man-of-war Bird, and sea-gulls. I also saw one Rail, and Masters saw some Whinbrel. A few fishes and shells were got on the reefs. Skeletons of turtles were lying about. A party are on shore to-night in search of Turtles."

"August 18th. We left Bramble Cay on the morning of the 14th for Hall's Sound, New Guinea. It blew hard from the south-east; and in order to get well to windward, the Captain ran south as far as Nepean Island, and anchored for the night. Next day we were occupied until 4 p.m., in getting to Anchor Cay, whence we started upon our voyage across the open Gulf. We had a rough night of it, and next day, 16th, at noon, we were only 30 miles from Cape Possession, when it fell calm; and ever since, until 3 p.m. to-day, we have been tossing and rolling in a heavy sea, without progress, and under a burning sun. We are now (at 8 p.m.) anchored in Hall's Sound, at the north-west point of Yule Island. . . . The place promises well for insects especially, so that we may make some stay here. Mr. D'Albertis has his house or hut on the side of the hill, opposite the anchorage." A party landed on the island in the morning. The natives were at first shy, "but when they found that we were disposed to make presents of coloured prints, &c., we were quickly surrounded by men and women, all anxious to receive, but not to give anything." Some of them were induced to visit the ship. . . . Of mammals at this place, we have got a large species of flying-fox. Of birds, a parrot, a swallow (new), a sunbird, a cuckoo-pheasant, a *Megapodius*, and *Calornis metallica*, which is breeding in immense numbers in a gigantic tree near the village. Of reptiles, I have scarcely

any. Fishes and marine things generally, I am going to try for after dinner. Brazier has got six or eight new species of land-shells, some very fine. Lepidoptera are numerous and handsome. Coleoptera, chiefly Longicorns, are tolerably abundant. Flies, a species of *Bibio*, are flying about the ship in thousands. The heat is intense."

"August 28th. We have now been here ten days, and, upon the whole, have had fair success with our collections. The natives were very shy of us for some days; but, of late, the ship has been visited daily by many canoes, as many as fifteen in one day. They are anxious to get knives, tomahawks, looking-glasses, and showy prints, but have little or nothing to give in exchange, except coconuts and bananas, which they value too highly. I have got some of their stone-adzes, spears, and a few bags of strong net, very well made. They manufacture also strong nets for fish, and for catching kangaroos, &c. They use pottery, but I have not seen any manufactory of it. Mr. D'Albertis returned home on the 22nd, and gave us a call next morning."

"On Tuesday (24th) a large party of us went across to the mainland opposite our anchorage, where some hills come close to the water. A number of birds were obtained, mostly new to us, and a few insects. We saw tracks of kangaroos, but nothing else worth mentioning, except a gigantic snake 13 feet 6 inches long. On the following morning, at daylight, we started in two boats to go up a river named the Ethel, on the east side of the sound. We had some difficulty in getting over a shallow bar at the mouth, but thereafter there was plenty of water. We got about ten or twelve miles up the river, when we were stopped by timber. We camped for the night at a spot where the river abutted on one side on a hill, near a deserted banana plantation; and passed a most miserable night, some of us in the boats, and the others on land. The mosquitoes were in myriads, and there was not a breath of wind. We returned to the ship about 4 p.m., on the following day, very tired. We brought back about thirty birds, mostly new to us, a small opossum, and a few insects. We found, as seems to be the case everywhere here, this country to be most difficult to penetrate, along the river a dense mangrove-swamp, and where it is possible to get an opening to the country behind, the prickly vines bar progress."

"August 27th. We again went over to the mainland opposite to us, and got a number of good birds, but very little else. August 28. My men are employed preserving the birds got yesterday, about thirty-five in number." After some remarks on the geology, the Journal concludes with the sentences—"Once or twice since we have been here we have been treated to a view of the main Mountain range standing up like a huge wall far into the sky. Our view this morning took in the whole range from Mt. Yule to Mt. Owen Stanley, the finest sight I ever saw."

After this, there are no more entries.

From the article contributed to the *Sydney Morning Herald*, it appears that the *Chevert* remained at the anchorage off Yule Island until September 2nd. "On leaving Hall Sound, it was my intention to visit Redscar Bay, about 24 miles to the east-south-east, as there were still three weeks to run of the time which I had fixed upon for my return to Cape York. But on finding the wind unfavourable, and that we might be a day or two doing what I had hoped to do in three hours, I gave instructions for an immediate return to Darnley Island, to pick up the steam launch *en route* to Cape York. On Wednesday, the

8th September, the *Chevert* dropped her anchor in her old anchorage near Somerset, and my expedition to New Guinea came to a close."

To save time, William Macleay and G. Masters left the *Chevert* at Somerset, and returned to Sydney by the mail-steamer, arriving on October 9th. The *Chevert* then resumed the return-voyage, and anchored in Port Jackson about a month later, after an absence of about six months, in time to enable Mr. Brazier to exhibit seven rare or new mollusca from Darnley Island and Hall's Sound, at the monthly meeting of the Linnean Society on 29th November.

The Journal was kept regularly up to May 17th, the day before the departure of the *Chevert*. "I have almost completed everything for a start to-morrow. The steam-launch was got on board this evening, not without difficulty. It has been a very busy day on board, and a great deal is left to be done to-morrow. We start nominally at 10 o'clock, but as the Ministerial Picnic party will probably lunch at 1 p.m., it is not likely that we can get outside the Heads till 2 p.m.; in that case the ship will have from 12 to 1 p.m., to get ready. . . . This is probably the last entry I shall make in this book for many months, as when I do keep a diary at sea, it will be on a larger scale."

The Journal was kept for two days only, October 11th and 12th, after William Macleay's return. These entries chiefly relate to private matters, but incidentally note his return by the mail-steamer on 9th, the friends who had called, the publication "of my account of the voyage in this morning's *Herald*", the parcels of books from a bookseller in London, and of exchanges from Mr. Edwards and Dr. Dohrn, and a large box of bird-skins from Gruber in San Francisco, which had been accumulating during his absence. "October 12th. Masters and I marked off Gruber's birds, and put them aside. There are some valuable birds from the Arctic regions of the Pacific, and from Arizona, mixed with some common enough things. Dohrn's boxes have some good things, but I have not gone closely into this yet."

After this, in consequence of pressure of work and engagements, the Journal was discontinued until January 26th, 1876. Pending the return of the *Chevert*, expected in about a month, routine work, and arrears were attended to. An entry at the beginning of the volume for 1876, irrespective of the entry for the day in its proper place, summarizes what happened in the intervals between October 13th, 1875, and the date mentioned—"January 26th, 1876. Since my return from New Guinea in October last, I have ceased to keep a diary. I am now, on January 26th, 1876, about to commence again. But before doing so, I wish to make some notes on what I have done, or what has happened during the above-mentioned period. My Museum has been much added to. The collections made during the voyage of the *Chevert* have been now almost all removed from the original packages. The mammals and birds have been mostly named and catalogued. The insects have been carefully laid out. The reptiles and fishes have been bottled, or, when too large, packed away in tanks. The Crustacea have been dried, and so have the Echinodermata. To some extent, myriads of small things have been bottled; and the Shells have been catalogued. To get through all this work, I have had, and still have, three assistants, Messrs. Masters, Brazier, and Spalding, fully employed. I have had besides large collections of birds, &c., from other places, 800 birds from London, a number from San Francisco, and a good collection from Fiji, besides various purchases and donations. The collection is so extensive, that I find I have no room in the house, even with the library, for the whole of it. I have, therefore, commenced a building

on one of my leased allotments of land in the garden, to be used as a Museum. It is to be 115 feet \times 36 \times 9, constructed chiefly of iron. The cost is to be £1,080."

The scientific visitors during the period for which the Journal was kept, included:

Dr. H. G. Alleyne, two visits, one with W. J. Stephens, to see a remarkable specimen of a Kingfish; and, accompanied by Captain Stackhouse, to see the collection—Mr. H. H. Burton Bradley "spent the forenoon with me, looking-up and talking about Spiders, &c."—Rev. G. Brown, "a missionary from Samoa, who is now going to form a mission at New Ireland, a new field for Natural History as well as for souls; and who wishes to collect", came to luncheon on March 5th. "I gave him a few hints about collecting at New Ireland, and how to do it."—Mr. Davis, a Parliamentary friend, and frequent visitor to Elizabeth Bay House, who had just returned from a visit to New Zealand, "brought me three perfect specimens of *Sphaeria Robertsii*."—Baron A. von Hugel "called on me to-day. I was not at home. I must return his call to-morrow".—The Rev. R. L. King and his brother, the Hon. P. G. King, who wished to inspect the *Chevert*—Sir William Macarthur, several visits, in connection with the fitting-out of the *Chevert*—Dr. Cox, numerous visits, bringing donations, or to talk over the prospective voyage to New Guinea—E. P. Ramsay, to see the mounted Sunfish, and "our plan of doing it"—Captain Stackhouse accompanied Dr. Alleyne, to see the collection, and stayed to lunch—W. J. Stephens, numerous visits, during his vacation, to help in sorting and bottling specimens, as well as to study some of them, and to consult books. "January 6th. Stephens spent all the morning with me, looking up Fish-books, &c." "January 11th. Stephens came in about 11.30 a.m., and remained to luncheon. He is studying the fishes of Port Jackson." "January 15th. Stephens spent the forenoon here, sketching and looking-up fishes."

1876.

Erection of Museum Building and removal of Collections.

The Journal for this year was kept regularly from January 26th to October 27th, but intermittently thereafter. It is the record of another busy year's earnest efforts to enlarge the Macleay Collection, and to perfect its arrangement. The important events of the year were—the erection of a Museum-building in the lower garden, and the removal of the collections, with the exception of the insect-cabinets, from Elizabeth Bay House thereto—Three important and several minor collecting-excursions were carried out by the Staff—Scientific work upon the *Chevert* collections was begun in earnest—The second year's record of the Linnean Society of New South Wales, was a great advance upon that of the first year.

The new Museum-building, 115 feet long, 36 feet wide, and 9 feet high, constructed chiefly of iron, erected at a cost of over £1,200, was finished in May; and, before the end of the month, the removal of the collections was begun, and, save for interruptions for other routine work, continued. Before the end of the year, considerable progress had been made with the transference and re-arrangement of the collections, with the exception of the entomological collections, in their temporary new home.

In anticipation of this, a skilled carpenter was engaged early in January to make glass-topped show-tables, cabinets, and fittings for the display of specimens; and he continued his work for the rest of the year. The bill for the glass alone for the cabinets and cases amounted to £33 1s. 3d. In addition, five cabinets, three large for birds, and two for shells, were supplied to order by the builder of the

Museum, at a cost of £160, on October 21st. A supply of glass-stoppered bottles for small specimens was obtained locally; and a consignment of oval glass jars ordered from England, arrived in September.

E. Spalding was engaged on January 27th, to mount Australian birds and small mammals. Spalding was interested in, and showed aptitude for, his work; and continued to be a member of the staff for the rest of the year.

J. Brazier was also engaged for a good part of the year, to help with the moving, and, when the new cabinets were available, to arrange the shells therein; and to complete his work on the *Chevert* mollusca. "January 27th. Brazier has now got through the shells of the *Chevert* expedition, about 3,000 species. He is now to give a list of them, with descriptions of the new species in papers to be communicated to the Linnean Society. He is to take the land-shells first." (Eleven papers in Parts ii-iv of Vol. i of the PROCEEDINGS).

The removal of the collections was to have begun on May 22nd, but two wet days and a holiday delayed progress. "May 25th. I commenced moving to the new Museum to-day. All the shells, and many of the tanks and jars of spirit-specimens were taken down." All the fishes in tanks were moved on the next day. Wet weather and routine interrupted the moving until "June 1st. In the afternoon we laid out one of the glass-topped tables in the new Museum with the Echini. The effect is good." On "June 3rd. We moved to-day about 150 of the mounted birds into one of the cabinets just finished." Two tables were arranged on July 4th, one with Star-fishes, and the other with the Darnley Island mummy and a number of human skulls. The large bird-cabinet and its contents, and other things were taken down on July 5th, and the larger Crustacea displayed on a table. Wet weather and other engagements caused interruption. On July 20th, the specimens of "corals were arranged in, and under one of the glass-topped tables." On the following day, all the bottled specimens of Echinoderms, soft Molluscs, and other marine forms were moved, and arranged in two glass-topped tables. The Australian and New Guinea native weapons, utensils, and ornaments, &c., were arranged on August 31st. After the new cabinets were delivered on October 21st, some of the shells were arranged and put away in two of these. After this date, no further particulars are given.

Collecting Excursions.—Some important collecting was done during the year. William Macleay and G. Masters left Sydney on March 11th to visit Kerarbury, the Station on the Lower Murrumbidgee in which William Macleay had an interest, returning on April 17th. At this time, the Southern Railway was opened only as far as Gunning. William Macleay's buggy and pair were in readiness, and the journey was continued, by easy stages, via Yass, Jugiong, Gundagai, Tarcutta, Wagga, Currawarner, Narrandera, and Waddi to Kerarbury. A week was spent at Wagga, and ten days at Kerarbury, the return journey being made by the same route. Collecting was carried out as far as possible, as opportunity offered. "Masters and I went out in the buggy, with our guns" on three days, at Wagga, and a number of birds were obtained, while some others were purchased from West. Masters also got a lot of fine Arachnida, under bark; some good specimens of a *Silurus* from a nearly dried-up lagoon; and a number of lizards. The Journal was not kept from March 24th to April 16th; but a summary is given in the entry for the 17th—"We got, during our trip, over 100 birds, many good, and six new to the collection; we saw others, but could not get them. We got also kangaroos, and a cask of reptiles and fishes", and, no doubt, other small things.

On June 21st, G. Masters, accompanied by Mr. Wharton Cox, left on a collecting-visit to the Mudgee district, returning on July 3rd. The results were—skins of three kangaroos, two wallaroos, seven wallabies, a native bear, and a young wombat; skulls of all these, and of phalangers, &c., together with entozoa.

"A very pleasant and satisfactory three days' excursion" to Broken Bay for the purpose of collecting fishes was carried out in September, "28th-30th. A small steamer was engaged, and I took with me Johnston as attendant and sportsman, Mulhall with his boat, carried on board, and Charles Hastie with his boat, and a man", and their nets and dredges. William Macleay was accompanied by W. J. Stephens and J. Brazier. The nets were hauled in the bays between Barrenjoey and Mullet Island; and line-fishing was carried on at night time. A large assortment of fishes, including "Pike, Long Tom, Taylor, Whiting, large Black Bream; among the smaller things, a good many *Gerres*; and an enormous haul of Rays." Several sharks were caught by line. "We took from a shark, with teeth like those of *Cestracion*, eighteen young ones, one foot long." Though the novelties, including "a *Julis* new to me", were not numerous, much knowledge and experience was gained, which were turned to account later on. Some good Mollusca were obtained from the keeper of the lighthouse at Barrenjoey.

"November 16th. A large male turtle was washed up on the beach here this morning. I have had him preserved."

Additions procured by the staff included—"Emu-wrens, and Bristle-birds, &c., ten in all", obtained by Masters at Long Bay; and "opossums, flying squirrels and native cats" shot at Canterbury, by Spalding.

"March 2nd. Masters got only one reed-warbler at Baptist's garden yesterday. They seem to have migrated, as they were numerous all the summer and bred plentifully. Kingfishers also have migrated within the last week."

Donations.—Mr. A. Boyd—the contents of one of the vats lent him for collecting in Fiji: "a great many fish, some snakes, lizards, crustacea, and echinoderms; but many of the fish and some of the snakes were soft and damaged, as he had lost most of the spirit I sent him". Also two human skulls, a number of birds, birds' eggs, shells and insects, &c., all from Fiji. Mr. Henry Bloomfield—"left two boxes of insects at the Club for me, said to have been collected by a Chinaman at Cooktown, but they seem to be all Chinese insects." Mr. Brazier—some specimens of corals. Count de Castelnau, Consul General for France, Melbourne—a bat from the Gulf of Carpentaria, and three fishes from the Yarra Yarra River (the Yarra Herring, *Gadopsis marmoratus*, and *Microperca yarrae* of Castelnau). Mr. Creswick, Coonabarabran—"three new species of *Carenum*, and six or seven of Amycteridae." "Signor D'Albertis visited me to-day (February 15th) and brought me a male and female of my *Mecynognathus Damelii* from Cape York." Captain Edwards—some beads, got by his son from the Natives of North-East New Guinea. Mr. W. J. Stephens "looked in this morning (October 1st) with his little boy, who brought me a welcome donation of birds' eggs". "March 8th. Brazier introduced Mr. ——— (name forgotten) from Port Denison, who presented me with three snakes." Miscellaneous, single donations were received from—Mr. Emerson "a fine shrimp, 8 inches long probably new"—C. Hastie, "a fine fish, name unknown, a Yellow-tail over a foot long and a new species of Flathead."—"October 17th. I got a new *Tetrodon* brought by Johnston."

Exchanges.—"November 25th. I have shipped by the Suez mail-steamer to-day a case containing insects and books (Parts of PROC. LINN. SOC. N. S. WALES, and *Trans. Ent. Soc. N. S. Wales*) for Dr. Dohrn, Baron de Chaudoir, and Dr.

Gestro of Genoa. I have also written to the last two, and Masters to the first." (No further particulars given.) Mr. H. Edwards, San Francisco—two consignments received May 6th and August 17th (particulars not given). Two sent, May 31st, three small boxes of New Guinea, Darnley Island and North Australian Coleoptera, &c.; and August 23rd, "207 species of Australian Lamellicorns, mostly named." Dr. von Haast, Otago, N.Z.—one consignment received, March 9th; one case containing 34 species of New Zealand birds, and another of Moa bones. One sent, May 9th, "over 1,000 species of Australian Coleoptera, about 150 species of Australian shells, two birds (*desiderata*), and specimens of Nickel-ore from New Caledonia, and cinnabar from Queensland." Mr. F. G. Waterhouse, Adelaide—one consignment sent, May 10th: "six birds (*desiderata*), and a specimen of *Dendrophis gracilis mihi*."

Purchases during the year were obtained from.—Mr. A. Boyd—nine Fijian skulls. Mr. Brazier—Tertiary fossil shells, chiefly European. Mr. Broadbent—a small collection of Australian birds (particulars not given). Mr. James Cockerell—a collection of Mammals (including fifteen Bats), Birds (about fifty), Insects (including about 300 Lepidoptera, many very fine), and a few other things from New Britain, New Ireland, and Duke of York's Island. Mr. Damon, Weymouth, England—an extensive order for fossils, fish-casts, &c. Mr. Duboulay—a small collection of bats and other things. Mr. Goodman, San Francisco—a few birds' skins and eggs. Mr. Gruber, San Francisco—eight species of small mammals, and 97 of birds (over 50 of them previously received). "May 31st. I wrote to Gruber, giving him a list of the birds I want, and offering to take large as well as small Mammals." Mr. Llewelyn—a box of butterflies (no further particulars). Messrs. Petterd and Broadbent—a collection of Mammals from New Guinea. Mr. Petterd—Tasmanian mammals, Birds ("10 species new to my collection"), nests and eggs, fishes, 200 species of Shells, Echinoderms, and Crustacea. Mr. Palmer—two fine specimens of the Impey Pheasant, and four Himalayan Pheasants. Pacific Naturalists' Agency, San Francisco—a cask of marine forms, fishes, crustacea, &c. from the Gulf of California. Mr. Waller, Brisbane—four Javanese musk-deer, of three species; a racoon and a lynx; twelve foreign birds, a few from the Dutch Archipelago and Australia; and rare eggs of a Heron. Mr. Webb, King George's Sound—twenty-one mammals, and 78 birds, "some of both very good, seven of the birds new to my collection", from Western Australia.

Other purchases from sources not mentioned include—"May 8th. I bought a lot of birds to-day" (particulars not given). "July 5th. I bought some birds this morning (*desiderata*)" (possibly from Palmer). "July 14th. Masters and Spalding got specimens of the Banded Stilt, three species of Ducks, and a Coot this morning, out of a large and varied assortment of birds sent from Melbourne to some shops here." Remarks on these specimens are given by E. P. Ramsay in his paper "Remarks on the large number of Game Birds which have of late been offered for Sale in Sydney" (PROC. LINN. SOC. N. S. WALES, Vol. i, p. 215). "July 25th. Spalding got to-day a pair of Native Companions, and pink-eyed Ducks, at the Market"; and, on July 28th, "a blue-billed duck and a teal." "October 7th. I got some very curious figures in chalk, or something like it, from New Ireland." "November 6th. I have made several purchases of birds, &c., for the Museum, within the last week" (no further particulars given). The amount expended on the above-mentioned purchases was about £300.

Under much pressure from other engagements, but desirous of taking his share of the task of contributing papers, William Macleay notes in his Journal on

April 19th. "I am going to set to work at once on the Coleoptera of the *Chevert* expedition". A short paper "Notes on some New Guinea Coleoptera" was read at the Meeting on May 29th. "It was my wish and intention to have given you, on the present occasion, a complete description of the Coleoptera collected during the cruise of the *Chevert*. I have been unable, I regret to say, from various causes, to carry out my intention as a whole, but I now lay before you, as an instalment, a few notes on those of the Geodephagous Coleoptera of New Guinea, which were taken during the voyage. . . . The six species which I now describe were the only representatives of the families Cicindelidae and Carabidae, taken at Katow and Hall Sound, notwithstanding a diligent search by experienced collectors."

On June 27th, the entry includes the following—"I commenced upon the fishes of the *Chevert* expedition to-day. I shall give up a few hours every day to it. Dr. Alleyne is to join me in the work." From June 28th to September 25th, Dr. Alleyne went to Elizabeth Bay thirty times; but towards the last he was often expected, when he was unable to come. "August 12th. Alleyne came to-day. We have now finished our examination of the fishes for the determination of the genera. We have now to go over them again to fix the species. There must be little short of 250 species in all." William Macleay finished a draft of the paper, and submitted it to his colleague, on September 19th. This was returned the next day approved. An artist, engaged to figure the 48 species described as new, finished his work on October 19th. The paper, in two Parts, was read at the Meetings on September 25th and November 25th. Only the Teleostean fishes were dealt with. Part 1 takes account of 54 species, 22 described as new; and Part 2, 91 species, 26 considered to be new. "The Sharks and Rays, of which there are a considerable number, will probably be made the subject of another paper, but we have no immediate intention of proceeding with the investigation of them."

The entry for October 23rd includes—"I am busy preparing a paper on the Entomology of New Ireland." A short paper, "Notes on the Entomology of New Ireland", giving a general account of the entomological collection purchased from Mr. James Cockerell on October 16th, the notes being intended to give a general idea of the entomological fauna of the Island, was communicated at the Meeting on October 30th.

Visitors.—In addition to the regular periodical visitors, Dr. Badham, Dr. J. C. Cox, Mr. Dalley, W. J. Stephens, and Sir Edward Deas-Thomson; and to visitors to Sydney, who were entertained at Elizabeth Bay House, and were shown the collections, such as Mr. and Mrs. Scott Siddons, and the Bishop of Tasmania; the scientific visitors included—Dr. Alleyne, who came on April 26th, "to look over my Murrumbidgee fishes"; as well as, many times to work, in collaboration with William Macleay, at the fishes of the *Chevert* collection.—Mr. Archie Boyd, four visits between February 15th and July 7th, after his return from Fiji, bringing specimens collected there, and before returning again, further equipped with a dredge and a meshing-net, &c., by William Macleay for additional collecting.—Count Castelnau, on a visit from Melbourne, came to lunch on June 22nd. "He was very unwell, but spent about an hour and a half looking at insects, fishes, &c."—Sir Daniel Cooper called on September 13th, and saw the Museum.—Signor D'Albertis, then on a visit to Sydney, making arrangements for a second visit to the Fly River, New Guinea, came to lunch on February 9th. "I showed him the insects and other things he wished to see, and presented to him the two volumes of the *Transactions of the Entomological Society of New South Wales*." On the occasion of a second visit on February 15th, "he brought me the sexes of

Mecynognathus Damelii mihi, from Cape York."—"Mr. Veitch, of London, who, for the last year, has been collecting plants in Fiji, and the New Hebrides group, called here to-day" (October 20th), and, by invitation, came again the following day to luncheon.—Mr. C. S. Wilkinson, on February 18th, came to see the geological specimens and fossils obtained during the voyage of the *Chevert*. These were loaned to him for the preparation of a paper, which was communicated to the Society at the Meeting on February 28th.

By way of returning the hospitality extended to him by the Members of the Linnean Society of New South Wales on the eve of his departure in the *Chevert*, in May, 1874, William Macleay entertained the Members at a picnic to the Weatherboard (now the Wentworth) Falls, on February 12th, 1876. Upwards of fifty Members, together with Signor D'Albertis, and Mr. Way, Attorney General of South Australia, special guests, journeyed by special train to the Blue Mountains, leaving Redfern Station at 8.15 a.m., returning thereto at 7 p.m. "We stopped for three-quarters of an hour near Wascoe's, and had breakfast. Tables were laid out alongside the train, and hot fish and other delicacies were served, cooked on a stove in the guard's van. We then proceeded to the Weatherboard, reaching it at 11.50 a.m. We visited the water fall, and strolled about until 2 p.m., when dinner was announced, served on tables near the train."

The Hon. Mr. William Forster, who had succeeded William Macleay as Member for the Murrumbidgee, was appointed Agent-General for New South Wales in London, on February 8th. In anticipation of this William Macleay received invitations from some of his old friends, both at Wagga, and at Gundagai, asking him to accept nomination to fill the vacancy; but he steadfastly declined. He had been elected a Member of the Senate of the University on May 15th, 1875, three days before the departure of the *Chevert*, but was granted leave of absence. After his return and he had had time to settle down again, he attended the Meetings of the Senate regularly (from February 2nd, 1876), as also the Meetings of the Board of Trustees of the Public Library, and of the Australian Museum. With these engagements, together with the development of his Museum, his interest in the newly established Linnean Society, and some private business in connection with his vineyard at Wagga, his time was fully occupied.

1877.

The Journal was not kept for this year. The only source of information about William Macleay's scientific work, and additions to the Macleay Museum during the year is three of the papers contributed by him, and one by G. Masters in Volume ii of the PROCEEDINGS. From these it appears that E. Spalding spent about five months, from May to September, collecting at Port Darwin. In a short paper, "On some new Carabidae from Port Darwin", read at the Meeting of the Linnean Society of New South Wales on August 27th, William Macleay says—"about a week ago, I received from Mr. Spalding a large and valuable collection of Mammals, Birds, Reptiles, Fishes, Mollusks, Crustacea, Insects, and other animals, both terrestrial and marine, from Port Darwin, the capital of the South Australian Province of North Australia. The collection is extremely interesting, both in a zoological and geographical point of view." G. Masters gave an account of the Birds (106 species, one new, but a number of them little known, and rare in collections) at the Meeting of the Society on November 26th (Vol. ii, p. 269). William Macleay described the Snakes (thirty good specimens, 12 species) at the

Meeting on September 24th (Vol. ii, p. 219); and the Fishes (about 120 species, 21 described as new), at the Meeting on December 31st (Vol. ii, p. 344).

In the earlier part of the year William Macleay had studied and reported on the Ophidia, Lacertilia, and Batrachia obtained during the *Chevert* Expedition.

1878.

With the exception of two brief entries on 10th and 24th May, the Journal for 1878 was not kept. The first is a brief record of the fact that William Macleay had written to Dr. Bidie, of the Madras Museum, about exchanges; and of money sent to Mr. Webb, of King George's Sound, for specimens recently received (without particulars). The second is an equally brief record of correspondence with Count Castelnau, of Melbourne, about the genus *Ambassis*, and a list of Australian Mollusca, without further particulars.

Four short papers—on a species of *Therapon* from a dam at Warialda, a new snake, ten new species of fishes from Port Jackson or King George's Sound, a new species of *Amphisite* from the Palau Islands—together with a note on the power of locomotion in the Tunicata, and a joint paper with Miklouho Maclay, on the Plagiostomata of the Pacific, Part i, contained in the PROCEEDINGS for this year (Vol. iii), afford no light on the progress of the Macleay Museum during 1878.

1879.

The Journal for this year is fairly complete. It is the record of a notable year, during which William Macleay's activities covered a wider field than usual, to an extent which somewhat interfered with his regular programme of scientific work. Special circumstances were responsible for this new departure, chiefly the International Exhibition, which was opened on September 17th, 1879. The foundation-stone of the Exhibition Building, specially erected for the purpose in part of the Inner Domain, since then known as the Garden Palace grounds, was laid by Lady Robinson, wife of the Governor, on February 13th. The building, when nearing completion, was named The Garden Palace, in the Government Gazette of September 2nd.

The Commissioners for organizing the Exhibition, were appointed in December, 1878, William Macleay being one of them. The first Meeting of the Commission was held on January 14th, when Committees were appointed. William Macleay was appointed to three of these, namely, those for Animal Products, Printing, and Scientific Instruments and Appliances, and was Chairman of the first of them. Henceforward, weekly Meetings claimed his attention up to the time of the opening, and Meetings of some kind until the Exhibition closed in March, 1880, and the business in connection therewith was concluded. The Exhibition attracted many visitors from the other Colonies, and elsewhere. Some of these were not only naturalists, but official representatives of the States or countries from which they came. This prepared the way for pleasant and fruitful intercourse with the scientific men resident in Sydney.

On January 8th, 1879, the Senate of the University appointed a Committee, comprising Canon Allwood, William Macleay, and Dr. Renwick, to report on the requirements of a contemplated Medical School. The Committee met twice, and sent on its report to the Senate on January 29th, recommending that the proposed site, on the land vested in the Prince Alfred Hospital, was unsuitable, and suggesting a better one for temporary buildings.

Parliamentary duties in the Upper House also claimed more than ordinary attention.

William Macleay's scientific work during this year was much interrupted by attendance at weekly Meetings throughout the year in connection with the Exhibition, and by the correction of proofs, and the oversight of the publishing of the PROCEEDINGS OF THE LINNEAN SOCIETY OF NEW SOUTH WALES. Nevertheless, as far as circumstances permitted, he devoted much attention to scientific work and the study of fishes during the year, and contributed three papers at the Meetings of the Linnean Society in January, July and October, one descriptive of the fishes brought by Cockerell from the Solomon Islands, the other two on the Clupeidae, and the Mugillidae of Australia. William Macleay's interest in fishes was primarily scientific, but as Chairman of the Exhibition Commission dealing with Animal Products he was interested in the question of satisfactory exhibits of local fish-products. In the paper on the Clupeidae he pointed out that Herrings were very rarely seen in the Sydney Fish Markets because the shoals pass the Heads in the winter months, proceeding in a northerly direction, as a rule, without entering the harbours; and that to fish for them in the open sea would require appliances not at present in the possession of our fishermen. He pointed out the importance of learning more about the movements of the migratory shoals, and expressed his willingness to receive and register any observations on these matters sent to him, in the hope of directing public attention to the great value of our undeveloped fisheries. The paper on the Mugillidae was read at the October Meeting, shortly after the Exhibition had been opened. This was another effort to direct public attention to the great value of our undeveloped fisheries.

Other material studied included Fishes from Fiji, the Muraenidae in the Macleay Museum, the fishes from Port Darwin in the Australian Museum, snakes from Sourabaya, the fruit-eating bats in the Collection, South Australian Lepidoptera of which drawings were sent by Professor Tate, on behalf of Mr. Tepper, and Entozoa and Epizoa of the Port Jackson, and other sharks.

Another supply of glass-jars, contained in five casks, imported from England at a cost of £119, was received on March 28th. These were utilized for the display of the fishes and other spirit specimens obtained from the Solomon Islands and Fiji, and the Holothurians and other spirit material, previously stored in bulk, obtained during the *Chevert* expedition. Other routine work included the putting away of the new material acquired, and the making up and despatch of collections sent in exchange. The Rev. Tenison Woods assisted in selecting Echini for despatch to Prof. Loven.

There was no opportunity for country excursions, but Masters and Spalding visited Long Bay for collecting purposes, especially for reptiles, in June. Masters went to Bondi after heavy gales on May 6th and obtained an eel, *Congomuraena habenata*, a *Sagitta*, and some examples of *Spirula* with the animal not quite perfect.

Visitors to Elizabeth Bay were more numerous than usual, in consequence of the Exhibition, some of those interested in Natural History being official representatives of the Colonies or countries from which they came. They included Mr. Casey, the Executive Commissioner for Victoria, and Mr. Pigdon, also a Commissioner, introduced by Mr. W. H. Archer; Mr. Croall of Edinburgh and a friend, "introduced by my sister, Isabella"; a party of officers of the French

Warship *Victorieuse*, introduced by Mr. W. H. Archer; Dr. J. Hector, of the Museum at Wellington, and Dr. von Haast, of the Otago Museum, Dunedin, both Exhibition Commissioners for New Zealand (both attended the Meeting of the Linnean Society on September 24th. William Macleay exhibited his general collection of Silurian and Devonian fossils from the neighbourhood of Yass, and W. J. Stephens a collection of Trilobites from the same beds. It was a very interesting Meeting. The following week, Dr. Hector, accompanied by Prof. Loven and W. J. Stephens, went for a geological excursion. William Macleay was to have been one of the party, but was unable to carry out his intention.); Mr. E. L. Layard, British Consul at Noumea (interested in ornithology, and came to see the Museum, especially the birds from the New Hebrides. He subsequently sent two collections of New Caledonian birds); Mr. R. Walker; The Hon. Louis Hope, and W. H. Miskin, entomologist, both from Queensland; Mr. F. G. Waterhouse, Curator of the South Australian Museum, from Adelaide.

Donations were received from:—Mr. Anderson, New England—two Avocets; Dr. Alleyne—a very fine specimen of a marine Annelid (*Nereis*); Mr. Brenan—a large diamond-snake, 8 feet long, which had swallowed a small wallaby, captured at George's River. "It is to be stuffed"; Dr. J. C. Cox—a fine specimen of *Ibacus* from Port Stephens; an iguana, for the preparation of its skeleton; "a few Solomon Island things; a fish, a recent Echinus, and a fine fossil one; a lot of Echini, some good Comatulæ, and other marine things, as well as a snake (*Hoplocephalus pallidiceps*) I had not before seen", all from Port Stephens; Mr. R. Cox, Mudgee—"a couple of Blennies from a waterhole, near his place"; The Hon. W. B. Dalley—three fishes (a flat fish, a large Blackfish, and a Chelmo); Mr. Dease, Kempsey—the rib of a whale, and the pelvis of a horse; Mr. Ebsworth—a fine full-grown, female specimen of the Saw-Shark (*Pristiophorus cirratus*), with five large eggs in the oviduct [this specimen was exhibited at the Meeting of the Society on October 29th (Proc., Vol. iv, p. 458), by William Macleay, as the first specimen caught in Port Jackson, known to him]; Mr. Layard, Noumea—two consignments: a case of birds from New Caledonia, all new to the Collection, received June 8th (without further particulars); "some birds arrived to-day from Layard, New Caledonia", without further particulars, received on October 28th; Dr. Hector, Wellington, N.Z.—New Zealand birds and fishes (particulars not given) received on September 4th; Mr. Long, Sydney—a fine male musk-duck; Mr. Marshall, Angaston, South Australia—trapdoor-spiders' nests, and specimens of copper-ore, &c.; Mr. E. Merewether—a potato infested with the larvae of a moth (the specimen was referred to Mr. E. Meyrick, who contributed a note "On a Micro-Lepidopterous Insect destructive to the Potato" at the Meeting of the Society on February 26th, Proc., Vol. iv, p. 112); Mr. Williams, formerly first mate of the *Chevert*, afterwards in charge of a pearl-shell fishery in Torres Straits—three species of snakes, a lizard, some small fishes, &c., and a fine coral growing on a pearl-shell; also two large Chinese vases. The donor visited Sydney in September, and, on his return, was supplied with a jar of spirit, as "he has promised to collect for me"; Rev. J. E. Tenison Woods—a collection of dried Fungi.

Exchanges were carried out with: Dr. Bidie, Madras—one consignment, of about a score of small mammals, and 200 species of birds, received on May 28th; one, a cask of fishes (103 species), and a box of Echinoderms, sent on July 3rd; Mr. Du Cane Godman, London—a box of Lepidoptera (Papilionidae and Morphidae) received December 15th; one consignment of Diurnal Lepidoptera sent in April;

Dr. Hector, Wellington, New Zealand—New Zealand birds and fishes (particulars not given), received on September 4th; Count de Lansberg, Governor-General of Java, Batavia—arrangements for exchanges were made, and one consignment of Australia Coleoptera, chiefly Lamellicorns, sent on December 1st; returns received in the following year; Professor Loven, Stockholm—a box of Echini, selected by Rev. J. E. Tenison Woods, sent in June, in exchange for Arctic species (received in January, 1880); Dr. H. de Saussure, Geneva—one consignment of five boxes of Hymenoptera (350 species) and Orthoptera (200 species) sent in February, 1880.

Purchases were made from: Mr. A. Boyd, Fiji—seven consignments of specimens from Fiji and the New Hebrides, received during the year; native weapons and implements, osteological specimens (human), and 10 species of fishes in spirit, "new to me and in capital condition"; corals, crustacea, and some very good small fishes in spirit, "several new to me"; spirit-specimens of two lizards, small but very good fishes, "most of them new to my collection", echinoderms, and crustacea, together with some fossil shells; another consignment, "not so good as the last" (particulars not given); several skins of Hawks and Owls, an edible bird's-nest, and a good collection of sea-snakes and fishes in spirit, from Fiji, Mallicolo, and other islands; a few birds and eggs, fishes, including about a dozen species from Espiritu Santo, and crustacea; fishes, "one new to me", and crustacea; Mr. Cockerell—part of his collection (mammals, birds, over 100 species, reptiles, fishes and insects) from the Solomon Islands; Mr. Goldie—three birds, and about 130 species of Coleoptera, from New Guinea; Mr. Goodman—a collection of mammals, birds, and spirit-specimens (not particularized), from the Richmond River; Mr. Webb, King George's Sound—two consignments; mammals and birds, one Black Cockatoo new to the Collection; a few birds, one Petrel new to the Collection, and Crustacea, all from Western Australia. A large and important assortment of fishes, especially two School Sharks, both females, one full of young; one large Hammer-head; Plagiostomata (12 species, in addition to two presented), supplied by fishermen, especially by C. Hastie, Heaney and Andrews, including—two young Whalers; two Blue Pointers, one about 7 feet long, caught outside the Heads, the other, a female, about 5 feet long; one White Pointer, about 10 feet long, a female; a small Grey Nurse, about 4 feet long; a fine Thresher, "the first I have heard of being caught here"; two large Wobbe-gones, one a male, 6 feet 8 inches long; three Port Jackson Sharks; one Angel Shark; and a fine Ray (*Trygon*); a medium-sized perfect male of *Heterodontus galeatus*, a fine adult female, 3 feet 6 inches long, and a young one, with the first dorsal spine covered with barnacles. The Entozoa and Epizoa from these were preserved. Five of the Sharks were exhibited at the Meetings of the Society (Proc., Vol. iv, pp. 292, 311, 458, 571). Teleostean fishes, also supplied by fishermen, included specimens of *Lobotes*, *Scorpiis*, Bluefish (*Girella*), *Chilodactylus* (two species), *Beryx*, *Temnodon*, a Scomber-like fish, *Echineis naucrates*, *Myxus*, *Cossyphus*, *Clupea sundaica*, *Muraena*, *Monacanthus* and small Schnappers. A fisherman also brought a specimen of a sea-snake from Terrigal.

Other important purchases were—some large Coleoptera from New Guinea (without further particulars) per G. Masters; a few bird-skins, "one, a South African Cuckoo, very beautiful"; "a collection of snakes, lizards, &c., over 100 specimens, mostly small things, in spirit, from Sourabaya", bought at an auction sale (per E. Spalding); a fine, young male Fallow-deer, and a stuffed seal (sea-lion), about 10 feet long (per E. Spalding).

The following experiences were noted—"May 12th. I saw a wonderful catch of 'Hardiheads' (*Atherina*) in the Bay this morning. The net was actually full of them." "June 28th. Hasty drew the seine on the beach early this morning, and completely filled his boat with Herrings (*Clupea sundaica*) and Tailor. He left bushels of them on the beach, which we found lying there when daylight came in." This was the catch referred to in William Macleay's paper on the Clupeidae (Proc., Vol. iv, p. 372).

1880.

The Journal for the year 1880, with numerous blanks, ends with the entry for April 15th. The Royal Commission, to inquire into and report upon the actual state and prospect of the Fisheries of the Colony, for the appointment of which the Legislative Council, on the motion of William Macleay, had passed a resolution on December 18th, 1879, was appointed by His Excellency, the Governor, Lord Loftus, with the advice of the Executive Council, on January 8th, 1880. The Commission comprised fourteen Members, including William Macleay, who, by request of the Premier, Sir Henry Parkes, consented to act as President, Dr. J. C. Cox, the Hon. W. B. Dalley, Captain Hixson, Alexander Oliver, E. P. Ramsay, and eight others. Charles Lyne was appointed Secretary. The Commission held its first Meeting on January 9th, and thereafter on three days per week until May 3rd, total thirty-one Meetings. One of these was held at Wagga on March 13th, in order to take evidence about inland fishery matters. Thirty-five witnesses, the majority of them fishermen, gave evidence. Much documentary information was obtained from pilots, lighthouse-keepers, and others stationed at the more important, distant coastal harbours, and residents interested in fishing who were unable to attend personally. The information forthcoming from all sources was sifted, reviewed, and supplemented, and with certain recommendations, such as the appointment of a permanent Commission of two or three competent gentlemen to exercise entire supervision of all fisheries, was incorporated in a valuable Report, which, together with the minutes of evidence, and an appendix including fourteen short popular articles on "Fishes of and Fishing in New South Wales", by the late Mr. E. S. Hill, reprinted from the *Sydney Mail* for 1874, was presented to the Legislative Council, and ordered to be printed on May 13th, 1880; and was published shortly afterwards. The Report alone was subsequently issued separately.

To appreciate the importance of the information systematically brought together in this valuable Report, it should be compared with the limited knowledge previously available, as given in Alexander Oliver's Essay on "The Fisheries of New South Wales", published in the Report of the Intercolonial Exhibition of 1870, at Sydney (p. 781, 1881).

William Macleay's interest in the operations of the Royal Commission, and his efforts to promote their success, though primarily the outcome of the interest he had been taking in ichthyology since 1874, were stimulated by his intercourse with the fishermen who had procured specimens for his collection, and supplied information about the breeding and other habits of food-fishes; as well as by the experience gained as Chairman of the Committee of Animal Products in connection with the Exhibition, which was still open. By his direction, G. Masters arranged a series of exhibits of the more important fishes of economic value, for the inspection and enlightenment of the Commissioners and witnesses, and for the identification of the species known to the latter by vernacular names. On February 23rd, William Macleay notes in his Journal that he had attended a Meeting of the Commission in

the forenoon; and that, in the afternoon, he had begun to work at part of the Report—no doubt a draft of the first Section of the Report on "Our Marine Fishes". But the Journal is incomplete, and ends before the Commission had finished its work.

The Journal is too incomplete to give a satisfactory account of William Macleay's scientific work during the year. Besides the work done in connection with the Royal Commission, he began a paper on the Fishes of Fiji, as noted in the Journal for January 5th; but this was not completed. Four papers—on a new species of *Galaxias* from Mount Wilson, on two undescribed fishes well-known to fishermen, brought to notice by the investigations of the Fisheries Commission; and Parts i and ii of a Descriptive Catalogue of the Fishes of Australia were communicated to the Linnean Society of New South Wales, during the year. The Descriptive Catalogue, based, with due acknowledgment, on Dr. Günther's British Museum Catalogue of the Fishes of the World, in 8 volumes, was intended to bring the record of Australian fishes up to date, and to present it in a more convenient form for those undertaking the study of Australian fishes.

Donations were received from: Mr. John Anderson—a basket of *Galaxias* from Mount Wilson; Mr. James Ramsay—a small collection of insects, including a fine *Carenidium*, from Fort Bourke; Rev. J. E. Tenison Woods—a fine collection of Fungi, mostly dry ones growing on wood.

Exchanges were carried out with: Count de Lansberg, Batavia—one consignment received January 14th, two boxes, one containing the skins of three fine large monkeys, a squirrel, and another small mammal; the other, spirit specimens of fishes and echinoderms. A second despatch was advised later, in March, but there is no record of its receipt; Professor Loven, Stockholm—one consignment of Echinoderms (some of the Echini much broken in transit) received on January 7th. One consignment, "a large collection of named Crustacea, and of unnamed Echinoderms in spirit," sent on February 2nd; Dr. Henri de Saussure, Geneva—one consignment, five boxes of unnamed Hymenoptera (350 species) and Orthoptera (200 species), sent on February 2nd.

Purchases were made from Mr. A. Boyd, Fiji—two cases, containing skulls, fishes, &c., without further particulars, received on March 15th.

Two fishermen supplied a Sooty Albatross, and a fine Tiger Shark, 11 feet long, both caught in Port Jackson. The only other acquisition mentioned is a specimen of *Nectris*, well known in New Zealand, but an addition to the Australian avifauna, found dead on the beach at the bottom of the garden, by the gardener.

1881.

The Journal for this year, the last of the series, contains but seven entries, the final one for June 15th. These chiefly relate to exchanges, and other additions to the Macleay Museum. But the first records that the sixth Annual General and the Monthly Meetings of the Linnean Society of New South Wales, held on the 27th January, were largely attended. Also that—"I am working at present at (the continuation of) a Catalogue of all the Australian Fishes, and have made such progress that I expect to finish in two months. The number of species will be about eleven hundred. Baron Macleay has returned to Sydney. I gave him, two days ago, a fine fresh specimen of *Heterodontus galeatus*."

The Catalogue, comprising 1,133 species, was finished on March 6th. Parts 3 and 4 of the "Descriptive Catalogue" were communicated to the Society at the

Meetings on January 27th and March 30th, as printed in Vol vi of the PROCEEDINGS. Two other papers—on a species of the Phasmatidae destructive to Eucalypts; and descriptions of two new species of Snakes from near Bourke, N.S.W.—were contributed at the Meetings on April 27th, and November 30th. The Journal is too incomplete to throw any further light on the scientific or routine Museum work during the year.

When the Garden Palace Exhibition was closed in March of this year, and the exhibits had been removed, the Government decided to retain the building. Provision was made for housing therein, the Department of Mines, established in 1875, and the newly instituted Technological Museum. By permission of the Government, the Linnean Society of New South Wales was allowed to occupy two rooms. As the building was closed at night time, the Monthly Meetings were held in the Board Room of the Public Library, by permission of the Trustees. This prospect of a permanent home for a time, at any rate, greatly stimulated the Society. The donations to the library and exchange-relations with other Societies were steadily growing in importance.

At the eighth Annual Meeting, on January 25th, 1882, Dr. Cox in his Presidential Address, thus referred to these matters—"I can safely congratulate the members on this the close of the seventh year of the Society's existence, that the wishes and hopes expressed for its prosperity and stability by the first president, the founder of this Institution, in his inaugural address, have been up to the present time satisfactorily fulfilled; for during the past year the list of members has steadily enlarged, the contributors to the 'Proceedings' have increased. . . . The donations and loans of books of a varied and reliable nature, appertaining to natural history, have greatly exceeded in number and value the gifts of the previous year; and our library now will bear, in its excellence, more than a fair comparison with those of other kindred self-supporting associations. This exceptional acquisition is due to the liberality of the founder of this Society, Mr. Macleay, by his recent munificent gift, being the second of a similar nature, of standard and scientific works exceeding 600 volumes. The loan also by the same gentleman, consists of a large number of works peculiarly suited to our wants."

Particulars of William Macleay's two munificent gifts of books and a loan of additional volumes are not given in the PROCEEDINGS.

The President further continued—"Beyond these seasonable favours in aid of our Society, Mr. Macleay lately at his own cost caused a course of free lectures on the animal kingdom to be given, and engaged the services of Mr. Haswell, a gentleman thoroughly competent to do the good work. These lectures were well attended and appreciated. . . . This liberal behaviour in the cause of Science has elicited an appropriate response on the part of the Government; two rooms at the Garden Palace have been set apart for the Society—the one to be used as a library, a lecture-room, and as a meeting and reading-room for the members; the other specially as an office for the transaction of business by the Council of the Society." (PROC., Vol. vi, p. 847-848).

Donations were received from: Mr. Williams—several species of beautiful Gorgonias, Sponges, and a few shells from Torres Straits, "all apparently brought up by a diver."

Exchanges were carried out with: Dr. Bidie, Madras—one consignment, a cask of (presumably Indian) fishes, received on March 23rd; one, sent on February

22nd, comprising skulls, birds, crustacea, and three mammals in spirit; Mr. Henry Edwards, New York—one consignment, over 800 specimens, over 200 species of Australian Lepidoptera, sent on March 22nd; Count de Lansberg, Batavia—one consignment of small fishes in spirit from Amboyna, Flores, and Dorey, received in January; one of Coleoptera, about 150 species of Heteromera, and 250 of Phytophaga, &c., sent on February 18th. A letter was received from Professor Loven, on June 15th, acknowledging receipt of the last consignment, and promising a return, fishes, &c., at an early date. But there is no record of their receipt.

Purchases were made from: Mr. A. Boyd, Fiji—spirit-specimens of fishes, crustacea, mollusca, &c., from Espiritu Santo, Solomon Islands, and the New Hebrides, received on March 14th; Mr. A. Goldie, Port Moresby—a fine collection of fishes from New Guinea; over 150 species, received on June 15th.

After 1881.

After William Macleay ceased to keep his Journal in June, 1881, some important additions were made to the Macleay Collection, as mentioned in his own or in E. P. Ramsay's papers in the PROCEEDINGS, Vols. viii-xii.

In a paper, "Contributions to the Zoology of New Guinea, Part vii", the latter says—"I have received from Mr. Wilson of Mason Bros., collections containing over 1,000 skins collected by Messrs. Rolles and Hunstein, and other members of Mr. Goldie's party; I have also been permitted to examine a collection lately added to the extensive collection at Elizabeth Bay." Several new species of birds were described, of which E. P. Ramsay says—"For the pleasure of describing these species I am indebted to the Hon. William Macleay, who purchased them with a collection of birds of Mr. Goldie" (Vol. viii, pp. 16, 25). There are also references to other specimens in "Mr. Macleay's Coll."

In two papers in the same volume—"On a new and remarkable Fish of the Family Mugilidae, from the Interior of New Guinea"; and "Contribution to a Knowledge of the Fishes of New Guinea, No. 4"—William Macleay gave an account of a second collection of Fishes supplied by A. Goldie. These were obtained in the extreme south-east of New Guinea, including collections made at Hood Bay and eastward to the D'Entrecasteaux Group of Islands. The first collection from Port Moresby comprised 274 species. The second collection increased the number of species to 405.

Volumes viii (p. 432) and x (p. 64) contain William Macleay's acknowledgments of the receipt of specimens from the Herbert River, North Queensland. In the second of these, he says—"I have frequently, within the last two years, received from my friend, Mr. J. A. Boyd of Ripple Creek, Ingham, collections of Mammals, Reptiles, and Fishes made in the vicinity of the Herbert River." The Reptiles from these collections were treated of in two papers in the Volumes mentioned.

A small collection of fishes from the upper waters of the Murrumbidgee, obtained and presented by Mr. C. Jenkins, of Yass, in May, 1885, prompted a paper by William Macleay, "New Fishes from the Upper Murrumbidgee", read at the Meeting of the Society, on June 24th, 1885 (PROCEEDINGS, Vol. x, p. 267).

In a paper "Miscellanea Entomologica, No. i. The Genus *Diphucephala*" read on April 28th, 1886 (PROCEEDINGS, 1886, p. 395), William Macleay says of the type-specimen of *D. Barnardi*—"I have named this species after George Barnard, Esq., of Coomooloolaroo, Upper Dawson, from whom I have received this and many

other rare and beautiful insects." A reference to a visit from Mr. Barnard, and the names of some of the insects in his collection will be found in the PROCEEDINGS for 1887, p. 972.

[Mr. Fletcher, on more than one occasion, told me that he had accepted the private Journal of Sir William Macleay on the understanding that, when he had abstracted references to affairs concerning the Linnean Society, he would reverently destroy the Journal since it contained much information of a private and confidential nature. I have, therefore, not omitted from the above Address any of the extracts quoted from the Journal, since they are no longer available for reference.—A.B.W.]
