Sydney Botanic Gardens

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1-1.5 cm. lata, apice tenuiter acutata, plana, supra saturate viridia, costa basi calloso-incrassata supra tenui percursa, tenuiter striata, laevis nisi secundum margines asperula, infra violaceo-purpurea, asperula, nervis secundariis utrinque 3 prominulis, venis transversis nullis. *Inflorescentia* terminalis, 1.5 cm. longa, angusta, subsecunda, folio summo superata spicularum paribus 4-5; ramuli adpressi, ad 3 mm. longi, uti rhachis semicylindrica, sublaeves vel superne asperuli. *Spiculae masculae* 5 mm. longae, inferiorum gluma inferior 1-1.5 mm. longa, lanceolata vel ovata, magis minusve acuta, superior minor; antherae vix 1 mm. longa; pistillum rudimentarium antheras paulo superans. *Spiculae femineae* 6 mm. longae; valva 5 mm. longa, laevissima.

Native country unknown. Raised at Kew from seeds communicated by Messrs. Sander & Son.

The blades of vertical stems are more or less at right angles to the medium plane, of inclined stems more or less inclined, and if more than two or three, distinctly distichous. The uppermost blade is obliquely erect and more or less in the continuation of the stem with the inflorescence facing the green upper side. When the fruits have begun to set, the blade of the uppermost leaf turns on the petiole until it has come round the inflorescence so that its purple underside faces the fruits. As the leaf-margins curl back at the same time the infructescence becomes loosely enclosed and hidden by the blade.

420. *Selaginella* (*Stachygynandrum*) *Tansleyi*, Baker [Selaginellaceæ]; ad *S. plumosam*, Baker, magis accedit; differt caule parce ramoso, foliis majoribus haud contiguis ovatis basi haud ciliatis, foliis minoribus conspicue aristatis, bracteis obtusis.

Caules continui, decumbentes, remote ramosi, subpedales, ramis ascendentibus brevibus simplicibus vel breviter ramosis. *Folia majora* ovata, nitidula, viridia, 2 mm. longa, ad latus superius magis producta, basibus haud ciliatis utrinque late rotundatis. *Folia minora* ascendentia, ovata, conspicue aristata, foliis majoribus duplo breviora. *Spicae* 12-18 mm. longae, 2 mm. diam.; bractee erecto-patentes, conformes, obliquae, ovato-lanceolatae, obtusae.

MALAY PENINSULA. Perak or Selangore, A. G. Tansley.

XXXV.—SYDNEY BOTANIC GARDENS.

Mr. J. H. Maiden, Director of the Sydney Botanic Gardens, has given in the *Sydney Morning Herald* an interesting and very valuable account of the origin of the Gardens and of their history during the early half of the last century. The first instalment of this sketch appeared in the issue of the journal for April 21; it was concluded in the issue for May 23, 1906. With the object of rendering it more generally known, the sketch is reprinted here. The history of the Gardens subsequent to January, 1848, the date to which present account brings us, which Mr. Maiden hopes at some future date to write, will be looked forward to with much interest.

“SYDNEY BOTANIC GARDENS.

“If it be stated that the Botanic Garden of Sydney is one of the oldest in the world, it may be thought to be harmless exaggeration. That of Oxford is older, Kew is older, some of the older Italian gardens have been styled Botanic, and have done botanical work fitfully. But Sydney is senior to that of Cambridge, Edinburgh, all the official American gardens, and many others. Furthermore, as a combined botanical and horticultural establishment that of Sydney is, by common consent, admitted to the front rank of the world's institutions.

“It has grown with New South Wales, and its growth has been so gradual that a certain amount of research has been necessary to ascertain certain facts in its development.

“The colony was founded on January 26, 1788. Governor Phillip had collected both at Rio de Janeiro and at the Cape many economic plants, while he had brought wheat and other cereals from England. Simultaneously with finding shelter for his people he set apart land for a farm and garden. This was the site of the present Botanic Garden and the origin of the name Farm Cove, on which it abuts.

“The creek which runs through the Garden and which is made as rural as possible under the circumstances, is the stream marked on Governor Phillip's first plan, and doubtless was the cause of the farm being chosen where it is. His first plan is marked ‘a farm, nine acres in corn,’ and six months later we have the note, ‘six acres of wheat, eight of barley, and six of other grain.’

“Some time after 1790 the Governor gave Nicholas Devine a permission occupancy of a portion of land at Farm Cove, and there is a notice in the ‘Sydney Gazette’ in 1803 regarding a theft of ‘apple-tree plants’ from this early horticulturist.

“The ‘Scotch Martyrs,’ Muir, Palmer, Skirving, Gerald, and Margatot, were transported for what we should at the present time call the expression of moderate political opinions. This was in 1794. Gerald purchased or leased a piece of land in the Botanic Gardens, built a house and formed a garden, where he died in March, 1796. Tradition has it that he was buried in his garden, between the wishing tree and the creek, but I have no evidence, and the precise site is unknown.

“In the earliest days the farm or garden was primarily to replenish the Government stores with grain, and also to supply the Governor and the officers with fruit and vegetables. At least as early as 1806 it was alluded to as the Government Garden. By this time British oaks had fruited in the infant colony, and ‘the gardener will have instructions to supply those who may be approved.’ So that a century ago the place had become differentiated from a farm into a garden. The fact is that partly because of the innate sterility of the land, and partly because the cereal crops were attacked by rust, it became impossible to cultivate these necessities of life at Farm Cove, which accordingly were

grown at Parramatta and the Hawkesbury. But the impress of the old ploughed fields is still left in the Botanic Gardens in the shape of the large oblong beds which, at the present day, mainly compose the Middle Garden. These were simply wheat and barley fields and vegetable gardens, and when the farm evolved into a garden it was sufficient to make paths parallel to and at right angles to the old furrows. After the cereals had disappeared, vegetables, small fruits, and orchard succeeded, and the wishing tree was planted (in 1817) at the intersection of paths.

"The attention that had been given in Europe to the remarkable vegetation of New Holland caused the directors of botanical establishments and proprietors of nurseries to compete eagerly for seeds and plants of this country. Sydney had practically a monopoly of such productions, and hence it came about that cases of plants were consigned to the Botanic Gardens of Sydney by almost every ship. Economic plants were most sought for in Sydney as an exchange, but other interesting and beautiful plants poured in. The early superintendents (as they were then called) endeavoured to set out the plants they received, according to methods of classification, but the variety was such that this grouping had to be abandoned. At the present day, however, the horticulturist or botanist can still see, for example, how the Oleaceae (Jasmine or Olive family), the Araliaceae, the Sterculiaceae were planted together in those early days.

"Governor Bligh was fond of gardening. We read that in 1807 'the shrubbery has also undergone a thorough change—no grass now growing in it, all laid out in walks, with clumps of trees.' Government House was then at the corner of Bridge and Phillip streets, with a fronting to Farm Cove. The solitary remaining tree of the old Government House avenue of a century ago is an oak in Phillip Street, opposite the Civil Ambulance Brigade, near the Water Police Court. The telegraph people hack at it every now and then, and this (perhaps the oldest) relic of the Government Garden in Sydney, should be placed in my charge before it is too late. There used to be ten or a dozen stone pines just west of old Government House ; one of them stood in Bridge Street up till about 30 years ago.

"At this time, in a map by Meehan (assistant surveyor), the native name of Farm Cove is given as Woccanmagully. This map showed leases in the present Botanic Gardens, in addition to Devine's, but these were shortly afterwards revoked.

"Heward, the friend and executor of Allan Cunningham, later on King's Botanist, and afterwards Superintendent of the Botanic Gardens, informed Hooker that the Sydney Botanic Garden was 'probably founded shortly after Governor Macquarie's arrival in 1809,' but I will show presently that a somewhat later date is the correct one.

"In the year 1813 the Mrs. Macquarie's Road, referred to in the inscription on Mrs. Macquarie's Chair, was commenced. This road was of a total length of three miles and 37 yards, probably measured from the Obelisk in Macquarie Place. The road encircled the Domain, as then defined, and from the chair to old

Government House gates it passed through the present garden, *e.g.*, from the vicinity of Mr. Overseer Camfield's present house, along the north side of the old stone wall. The old stone wall had therefore been constructed some time prior to the year 1813—I do not know the precise date. Mrs. Macquarie's Road was finally completed on June 13, 1816. Besides the chair, the inscription 'Mrs. Macquarie's Road, 1816,' may still be seen on a rock on the left-hand side of the road up the slope after leaving Palmer's baths.

"The completion of Mrs. Macquarie's Road and its record on the chair was, I consider, the coping-stone of Macquarie's plans for the definition of the Garden and Domain. He then appointed a superintendent to supervise the area which he had thus defined.

"Mrs. Macquarie's chair is, therefore, the true foundation-stone of the Botanic Gardens; the date (June 13, 1816) inscribed on it is the official birthday of the Botanic Gardens. In about 10 years, therefore, we shall arrive at the centenary of the Sydney Botanic Gardens, and I hope that one way of commemorating it will be by the issue of an illustrated historical volume.

"Incidentally, I may remark that 1816 is an important year to us for another reason, since on December 21 Allan Cunningham landed in Port Jackson.

"Part of Mrs. Macquarie's Road is lined by swamp mahogany trees (*Eucalyptus robusta*). These line the north side of the wall from the aviary entrance to the main avenue entrance.

"Other trees along this Macquarie Road are the British oaks, from the main Domain entrance opposite the Public Library along the back of the hospital wall, at least as far as the St. Mary's entrance to the Domain.

"It is stated that these trees were planted by a Mr. Bigg, of Governor Macquarie's orders; and the story goes that Bigg, having a number of oaks to plant, had one over, and planted it in front of his house in Phillip Street. This was the tree growing in the path in front of the office of the Inspector-General of Police for so many years, and cut down while in full vigour only a few years ago. Messrs. Charles and George Kellick, who were born in Phillip Street, obtained the history of these plantings from their father, who knew Bigg well.

"In 1816 the first Superintendent of the definitely constituted Botanic Garden, with the title 'Colonial Botanist,' was appointed by Governor Macquarie in the person of Charles Fraser, a soldier of the 46th Regiment, who in the following year went with Allan Cunningham to collect plants and seeds on Surveyor-General Oxley's journey of exploration to the west.

"Let me digress for a moment. It is the fashion of Sydney people to speak of the Botanic Gardens in the plural, and this is how it came about:—The original garden, which we now know as the middle garden, was bounded on the north by the picturesque old stone wall, on the east by the aviary, on the south by the hothouse avenue, and on the west by the creek. The upper garden was formed partly by taking in land from the Domain and

partly by absorbing the site of the old house and grounds of the director. The lower garden was formed by enclosing and bringing into cultivation that portion of land between the middle garden and Farm Cove.

"In the year 1817 Mrs. Macquarie had a Norfolk Island pine (raised from seed by Major Antill, it is stated) which had got too large for the gubernatorial garden. She gave orders for it to be planted in the Government or Botanic Garden. It was placed in the middle or intersection of paths of the middle garden, and forms what is now known as the 'Wishing Tree.' Said designation was given because the custom grew up amongst the damsels of Sydney of walking three times round this tree when all their wishes would be gratified, and they would be happy.

"The tree is about 100 ft. high, and it would appear to have now reached its maximum growth. Quite a number of candidates have claimed the honour of planting that tree. The late Mr. J. M. Antill stated that his father, Major Antill, 73rd Regiment, Aide-de camp to Governor Macquarie, planted it. Mr. Charles Fraser, the Superintendent of the Garden, is also credited with this honour. Ned Shakeley, a prisoner, afterwards employed by Mr. J. Baptist in his gardens at Surry Hills, was also stated to have been the planter; and a friend of mine told me that Mr. John Higgerson (the well-known Assistant Ranger of the National Park, who died last year), told him that he 'had a hand' in planting this tree. Now, I propose to adjust these claims in the following manner:—Ned Shakeley dug the hole, Johnny Higgerson handed him his spade and helped him generally, Mr. Fraser turned the plant out of the pot to see that it was all right, and Major Antill planted it with due ceremony. Then Mr. Fraser trod the earth about it, staked it, watered it, and tended it during its early days. And I have no doubt that the irascible Governor Macquarie, when the tactful Mrs. Macquarie had got him into one of his good humours of which tradition speaks, said one day:—'And now we will go and see that little pine, my dear, which Antill tells me he has planted.'

"The 'wishing tree' is the most historically interesting plant in our beautiful Garden. Considering the rich soil which such pines require in their native Norfolk Island, its development in such a sterile situation affords a remarkable example of adaptability to environment. I often stand at that spot, contemplate Macquarie, and think of the marvellous changes around me in the Garden in the course of less than a century!

"Tradition states that Fraser, who was known to have a good knowledge of horticulture and a scientific acquaintance with botany, acquired his knowledge in some of the best establishments in Scotland. His various explorations in New South Wales, Queensland, and Western Australia in the first decades of the last century enriched these Gardens with many notable plants.

"The five voyages, which included the circumnavigation of Australia undertaken by Captain P. G. King, R.N., in the twenties, with Allan Cunningham as King's Botanist, was the means of introducing to Sydney many Australian plants not previously in

cultivation. The many journeys of exploration undertaken by Allan Cunningham resulted in fine collections of fruits and seeds being brought to Sydney.

“During the year 1827 we find quite a crop of notices in the *Sydney Gazette* concerning the Botanic Gardens. It is announced that a pitcher-plant (*Cephalotus*) had been discovered at King George's Sound, and that specimens are in the Botanic Gardens. That the gates are to be closed except to the military (September 26). That an olive tree six years old was bearing flowers; and that cotton grown in the Gardens was sent to Glasgow (presumably to the elder Hooker, for report). A list of fruits cultivated in the Sydney Botanic Gardens was published in the *Gardeners' Magazine* of London of that year.

“The Sydney Botanic Gardens have, apart from their aesthetic and hygienic aspects, been intimately bound up with the material welfare of the colony. The establishment has a most honourable record of service in regard to the introduction of useful plants into Australia. Much of this work has, of course, been rendered for many years unnecessary by reason of the establishment of so many reputable firms of seedsmen and nurserymen. The Sydney Botanic Gardens has also laid the foundations of the grand work now undertaken by the Departments of Agriculture of the various States, much of it, of course, entirely beyond the scope of a modern botanic garden. The Sydney Botanic Garden is classic ground. Its area includes, as has already been shown, the site of the first farm, where corn was grown for the infant colony, where fruit trees of all kinds—apples, oranges, olives, vines, bananas—were first acclimatised, where it was shown that the cotton and innumerable economic plants could grow in New South Wales, while by means of Wardian cases and glasshouses, it was the means of establishing and propagating valuable tropical economic plants for what is Queensland, Northern Australia, and Polynesia; such plants were chiefly obtained from the islands of the Pacific, Batavia, Calcutta, and London. The methods and objects of the Sydney Botanic Gardens have changed with the necessities of the times, but I say, without fear of successful contradiction, that the institution now more deserves the title of ‘botanic’ than at any other period of its existence.

“Not only was the Sydney Botanic Garden engaged in the propagation and exchange of plants, but seeds, cuttings, rooted plants, etc., were extensively supplied in the late twenties to ‘Brisbane Town.’ Plants so propagated were not only distributed to public institutions, but to such private and official persons as the Governor might see fit to direct.

“In the year 1828 (July 11), Fraser was addressed by the Colonial Secretary as the ‘Superintendent, Botanical Garden.’ They were rather easy-going in those days, and he was officially designated indifferently in addition ‘Colonial Botanist,’ and sometimes ‘Superintendent, Government Garden.’ On one occasion he signs himself ‘H. M. Bot. Collector.’

“On June 8, 1829, the *Sydney Gazette* contained an official description of the Domain and Botanic Gardens, from which it will

be seen how much less in area the Domain is now to what it formerly was. I may mention that in the year 1811, Garden Island was declared to be a portion of the Domain.

"In 1829, the Garden was more accurately defined than heretofore, additions were made to it, and the whole fenced. A plan of the Garden at this period is in existence.

"During 1830 the experiment was tried of employing orphan boys (in care of the State) in the Botanic Gardens, but it was not a success, and the experiment came to an end in three or four years.

"In July of this year, Mr. Fraser made the first annual report of which I have any record. The operations were even then of some magnitude, cases of seeds and of living plants being sent to a number of Botanic Gardens in various parts of the world, and also to certain distinguished individuals. Of herbarium specimens the Regius Professor of Botany (W. J. Hooker), at Glasgow, was the principal recipient, and he received 1,800.

"In May of this year it was announced that Mr. Fraser had a cutting of the weeping willow which grew over Napoleon's tomb at St. Helena, and that it was planted on one of the miniature islands constructed by him in the pond in 'the new botanic gardens which he is laying out at Farm Cove.' I believe this island to be that on which Cunningham's monument stands, and the willow in question may be that on the bank just to the north of the island. At all events, all the weeping willows in the vicinity of this pond and most of them in other parts of the Garden are descendants of Napoleon's willow.

"The laying out undertaken by Fraser refers to the land outside the stone wall which bounded the existing garden (which is now known as the middle garden) and the sandy beach (as it was then) of Farm Cove. This new area, now known as the lower garden, was laid out by Fraser, and there is a plan in existence, signed by Major Mitchell, the Surveyor-General, in 1833, showing that the laying out was practically as it exists at the present day. In those days the tide used to come up to near Cunningham's monument, but in 1869-70 the land between tides was reclaimed, and the substantial semicircular stone wall which exists round Farm Cove was erected.

"Fraser's alterations, instigated by the Governor, were very considerable, and were in progress in 1830-1.

"A new walk approved by his Excellency was 1,600 yards in length. 'The above distance will admit a walk through the centre on high ground from its southern to its northern extremity, passing over the carriage road at Mrs. Macquarie's Chair, and entering the bush on the western side of the road. It will then meander through those Roman rocks facing Farm Cove, and command a view of the town, stables, both forts, and in clear weather the Blue Mountains. A private walk will enter the new garden at its northern extremity.' (This gate is still in existence. It connects the middle and lower gardens at the main avenue, and is covered with creeping fig.)

"On 20th August, 1831, Mr. Fraser informed the Colonial Secretary that 'the roads in the Government Domain are now made passable for two carriages.' Then comes the important official announcement, dated September 9, which marks an epoch in regard to the utilisation of the Domain :—

"His Excellency the Governor has directed that it be notified that 'the grounds in the Government Domain, near Anson's Point (Mrs. Macquarie's Chair) have been laid out in walks for the recreation of the public ; and that the Domain will be opened for carriages on Tuesday next, the 13th inst.

"The road from the stairs near Fort Macquarie along Farm Cove to the gate which crosses the road at the extremity of the Botanic Garden is reserved for the exclusive accommodation of persons on foot.

"Carriages and horsemen may enter the Domain at the gate near the School of Industry, or at the Woolloomooloo gate at the southern boundary of the Domain.

"This was the birth of the Domain and its use practically as we know it to-day.

"The same year, 1831, was memorable from the visit of Mr. James Busby to the wine-growing districts of Europe, to select vines likely to be useful in New South Wales. From the Botanic Gardens of Montpellier, France, he obtained no less than 433 sorts, and from the Luxembourg Garden at Paris, 110 sorts. These were transmitted to the colony in the following year, and on January 22, 1833, it was recorded that '362 varieties were alive and for the most part healthy,' in the Botanic Gardens, Sydney. Thus began, in earnest, the wine-growing industry of New South Wales. Busby's vines were planted east of the creek, and in the vicinity of the present hot-houses. For about 25 years they served to propagate vines all over the colony, and this historic vineyard, or rather assemblage of vines, having served its purpose was finally uprooted about 1860. Mr. L. Woolf, then an employé of the Botanic Gardens, and who still retains his interest in horticulture, remembers these vines perfectly, and has given the present writer information concerning them.

"The year 1831 is also memorable, in that Charles Fraser, the first Superintendent of the Botanic Gardens, died on the last day of it. He was undoubtedly a worthy and an able man, and I regret that no portrait of him appears to have been preserved."

"On Fraser's death Allan Cunningham declined the appointment. His brother Richard, then at Kew, was recommended by Robert Brown, and also by Aiton, of Kew, and he was accordingly appointed by the Colonial Office.

"After the special activities of 1831 and absence of a superintendent (Mr. John M'Lean performing duties in the interim), no events of a noteworthy character took place during the year 1832.

"In January, 1833, Richard Cunningham entered on the superintendence of the Botanic Gardens with an earnestness and zeal which furnished good evidence of his having the improvement of the establishment, in its several departments of botany and horticulture, strongly at heart. An experimental ground was

formed in which the cultivation and propagation of vines and fruit trees generally were attended to, and from which the colonists received ample supplies of cuttings. In the botanical division some improvements were made, and many of the rarer indigenous plants were brought in from remote localities that had not previously found a place in the garden; while numerous exotics, adapted to the soils and climates of the colony, were introduced.

"During this year he went to New Zealand in a man-of-war in order to assist in the selection of suitable spars for the use of the Royal Navy. He maintained very friendly relations with the Maoris, and returned to Sydney laden with plants.

"On July 13 he furnished a report to the Governor containing details of his plans of his improvements, which can be more fully understood by reference to a plan by the Surveyor-General (Major Mitchell) executed during the same year.

"During the second half-year we find that 120 of the Busby vines were bearing fruit, and that 1,000 ornamental plants and 1,200 fruit trees, 'exclusive of about 500 olive layers and a vast number, not counted, of grape vines, plants and cuttings . . . seeds of culinary vegetables were distributed in considerable quantities among such persons as applied for them.'

"1834 seems an unevenful year, the only breeze to cause a ripple being the conduct of a wicked man named Still, whose conduct was not as calm as his name would indicate. He put horses in the 'newly-made plantation leading to the Domain, and entirely destroyed it.' Mr. Still 'said he would send as many horses as he thinks proper to destroy the young trees,' and so the matter was referred to the Colonial Secretary.

"During the year Richard Cunningham zealously attended to the requirements of the garden, and made numerous journeys into the country for the purpose of making himself acquainted with its flora and of collecting seeds and young plants for cultivation.

"We now reach the year 1835. In those days official letters were laboriously copied, copying ink not having been invented. The last letter Richard Cunningham copied in the letter book was dated February 23, and referred to instructions he had received from the Governor to attach himself as botanist to the Surveyor-General's (Major Mitchell's) expedition of exploration to the West.

"What happened soon can best be stated by transcribing a memorial tablet in St. Andrew's Scots Church, Sydney:—

"'Richard Cunningham, Government botanist to the colony, attached to an explorative expedition into the interior, under the command of Major Mitchell, Surveyor-General, wandered in his enthusiasm for botanical investigation, from his companions, and losing himself in the desert country on the Bogan River, fell into the hands of one of the native tribes, by whom he was unfortunately killed about April 25, 1835, in the 42nd year of his age. This tablet is erected as a lasting and affectionate tribute to his memory by Allan, his only brother.'

"The few fragments of his remains were collected by Lieutenant Zouch, of the Mounted Police, and buried at Lower Tabratong, near Dandaloo, where a stone marks his last resting place. The grave is on Hunt Brothers' Burdenda station.

"Thus passed away a martyr to science, one whose usefulness to the colony was only just beginning to fully expand, and one who appears to have been endowed with a singularly agreeable disposition. His scientific reputation has been largely overshadowed by that of Allan, his distinguished brother. It is, of course, impossible to say in what direction Richard, had he been spared, would have made an impression on the Botanic Gardens, and on the botanical investigation of the colony, but we are perfectly justified in saying, from what he accomplished, that his early death (followed as it was so soon by that of his brother) was a blow from which botanical investigation in Australia never recovered till Bidwill's time.

"During 1836 we find that that portion of the Domain between Macquarie Street North and Macquarie Place was alienated primarily with a view to raise funds to build a new Government House, as the Imperial Government was not disposed to incur the necessary expense.

"In this year a committee was appointed to test Busby's vines. James Backhouse, the visiting Quaker philanthropist and botanist, was a member of it, and he writes:—'A large proportion of them are wine grapes, but most of the varieties cultivated for the table in England are among them under their French names.'

"The vacant post of superintendent of the Botanic Gardens was offered to Allan Cunningham. He had refused it some years previously, and was at work at Kew on his Australian plants, when the offer was again made to him on his brother's death.

"Two circumstances combined caused him to accept it. One was that he longed to again investigate the Australian flora on the spot, and the other was that on his long and arduous journeys of exploration his health had so suffered, that he thought a sea-voyage and an exchange to the Australian climate from that of Kew would be beneficial to him. He sailed for Sydney in October, 1836.

"This is not a sketch of Allan Cunningham's life, but of the early history of the Botanic Gardens, and I will content myself therefore with briefly touching upon his connection with the gardens.

"He arrived on February 12, 1837, and in the *Government Gazette* of March 1 his appointment as Colonial Botanist and Superintendent of the Botanic Garden was announced.

"During the interregnum the Governor had appointed a committee of management, and this was unknown to Allan Cunningham when he accepted the post. Its appointment formed one of the reasons why the distinguished botanist and explorer threw up his position. The committee continued to act during the stop-gap administration of overseer Kidd. When Mr. Charles Moore arrived, friction speedily arose, he being a strong man, and

objecting to the interference of the committee in the details of management. A Parliamentary inquiry was held, and the committee, which had met but little of recent years, finally vacated office in 1855.

"Cunningham also made up his mind to resign his appointment in consequence of duties having been imposed upon him which he considered incompatible with his position. He particularly resented having to cultivate vegetables for certain civil and military notables, and the *Sydney Herald* of the time supported him in the stand he took.

"In the early part of December he sent in his resignation to the Governor (Sir Richard Bourke). Colonel Snodgrass, the Lieutenant-Governor, asked him to furnish a report on the state of the garden for the information of the incoming Governor. This he did, and his report is still in existence. He then determined to visit New Zealand on a purely scientific expedition. On January 15, 1838, this gentle spirit wrote to England the only angry letter I ever knew him to pen. He said: 'Tell all, I have discharged the Government cabbage garden in disgust, and am now to enter with all my might, mental and corporeal, on a more legitimate occupation for a few months.'

"By request, and as an act of courtesy to the incoming Governor, Sir George Gipps, he delayed his departure until the arrival of his Excellency on February 23. His Excellency was inclined to take a great interest in the Botanic Garden, and made a great effort to retain Cunningham's services as 'Government Botanist,' a purely scientific appointment, including travel in the colony, leaving the gardening portion of the duties, hitherto attached to the position, to Mr. James Anderson, as superintendent. Cunningham demanded a greatly increased salary on account of the increased cost of living, and his Excellency stated that the proposed salary was not objected to. Still, for some reason or other, the matter was not pressed in the Legislative Council, and on learning this, Cunningham 'finally washed his hands of the garden' in April, 1838.

"In 1837 we have the first record of plants sent from the Botanic Garden, Sydney, to Captain W. Lonsdale, police magistrate, to stock the first Government garden at Melbourne. Almost at the same time plants were sent from Sydney to Captain John Hindmarsh, Governor of the newly-formed province of South Australia.

"During this year Backhouse records that the Norfolk Island pines first produced cones in Sydney. Allan Cunningham, during July, 1837, first formed plantations in Hyde Park. He also did a good deal of tree-planting in the Domain.

"In 1831, as already stated, the enlarged and reorganised garden was first thrown open to the public. In 1838 it was, by the Governor's order, first thrown open to the public on Sundays. Many people now living remember the patriarchal arrangements that took place on that day. The Governor used to attend Divine service at St. James' Church on Sunday mornings, accompanied by his suite and friends. He would then walk over to the existing entrance, near St. Mary's Cathedral, and go across the

Domain to the entrance of the Gardens near the stone fountain. The Garden gates were closed, but an attendant was waiting to open the gates for his Excellency and party, after which the citizens could enter the Garden. I do not know the date on which the Garden was first thrown open on Sunday mornings.

"Allan Cunningham, on his return from New Zealand, returned to his lodgings in Elizabeth Street, thoroughly broken down in health. On June 24, 1839, he was removed from his lodging to his old official cottage in the Botanic Gardens for change of scene and air. Heward says: 'On Thursday, the 27th, his last breath was sighed away in the arms of his faithful friend, James Anderson' (his successor in the superintendence of the Garden). He died of consumption, a martyr to geographical exploration and botanical science, in the 48th year of his age.

"From this passage it is clear that Cunningham died in the Botanic Gardens. The old cottage, sacred through associations with such a man, was demolished less than 30 years ago. Its site was a little north of the Levy Fountain, and a photograph of it, taken in the Fifties, is still in existence.

"Allan Cunningham was buried in the Church of England portion of the Devonshire Street Cemetery, and a marble tablet to his memory was erected in St. Andrew's Scots Church similar in size to that which he had erected in remembrance of his brother Richard.

"In 1844, as the inscription states, an obelisk to Allan's memory was erected on the small island in the course of the creek which flows through the garden to Farm Cove. At this time the tide nearly came up to the obelisk, but filling-in operations now leave the obelisk some distance inland. At the demolition of the Devonshire Street Cemetery the present writer took steps with the view to the removal of Cunningham's remains. These remains (very few) were reverently removed on May 25, 1901, and the actual placing of them in a small leaden casket in a cavity in the obelisk took place in his presence and in that of Mr. George Harwood, the superintendent, and a few friends, on June 26. Thus the obelisk in the Botanic Gardens which has for so many years been a memorial of Allan Cunningham is now also his tombstone. His first tombstone is carefully preserved.

"Allan Cunningham is one of the trio (Robert Brown and Ferdinand Mueller being the others) of botanists and explorers pre-eminent in Australian botanical work, and the permanence of his scientific reputation is beyond the reach of controversy. Allan Cunningham's name will, to the end of time, shed lustre on the Sydney Botanic Gardens. He is the only man whose statue (if he be deemed to require one) can appropriately be placed in that area, sacred with so many botanical associations.

"For some years after Cunningham's death the management of the Garden was not taken sufficiently seriously. The carriage road (part of Mrs. Macquarie's Road) from old Government House to the Chair, passed along the northern boundary of the Garden, thus skirting the present stone wall dividing the middle and lower gardens. This carriage road was fenced with palings, and had the effect of shutting out the view of the harbour, for the

laying out of the lower garden in the early thirties, and to which I have already alluded, was interfered with by reason of its unfenced and unprotected state. It was not many years before Mrs. Macquarie's Road was diverted out of the Botanic Garden into the Domain, and the fencing of the Lower Garden completed, that is to say, the Lower Garden was shut off from the Domain on the one side, and the Government House or inner Domain and Circular Quay on the other. When that was done, the improvement of the Lower Garden advanced by leaps and bounds.

"On April 22, 1842, died James Anderson, who had been Superintendent of the Garden since Allan Cunningham's resignation. He had been the botanical collector of Captain P. P. King's voyage to South America and the Straits of Magellan, &c., and on Captain King's homeward voyage Anderson remained at Sydney. His administration of the Garden appears to have been uneventful; at all events, I know next to nothing of the progress of the Garden during this period. He was buried in the Devonshire Street Cemetery, and on its demolition in 1901 his remains were removed to the Presbyterian section of the new cemetery at La Perouse.

"Governor's Bourke's statue was unveiled on April 11, 1842. The old cottage, the former residence of one of the Domain bailiffs, was pulled down to enlarge the road, the site fixed for the statue being just inside the paling fence opposite to where the cottage formerly stood.

"William Robertson succeeded Anderson, and died in July, 1844. I know nothing of him or his work. He was succeeded by James Kidd, who had been an overseer since July 22, 1833. Mr. Kidd was informed officially that his appointment was only a temporary one. On the appointment of Mr. Bidwill as director, Mr. Kidd reverted to his position of overseer, a post he continued to hold under Mr. Charles Moore till 1866. I do not know the date of his death. His term of office as acting superintendent appears to have been devoid of important incident.

"The unsatisfactory state of the Garden since Allan Cunningham's death had now impressed itself on the Governor and Council, and on September 1, 1847, Mr. John Carne Bidwill was appointed by the Governor, with the title of director (the first time the title was used for this office), and Government Botanist (also a new designation).

"Sir J. D. Hooker speaks of him as possessed of a remarkable love of botany and knowledge of Australian plants. Our records scarcely refer to him, but I have seen a number of letters from him to the late Admiral P. P. King, Sir William Macarthur, and others, showing that he had done yeoman work in hybridising various bulbous plants. He had spent some years in New Zealand, and the well-known Bunya Bunya (*Araucaria Bidwilli*) was discovered by him and bears his name.

"Through some confusion, the Home Government also set about making an appointment to the Botanic Gardens, and Mr. Charles Moore was appointed director by the Secretary of State

for the Colonies, and arrived in Sydney January 14, 1848. Mr. Bidwill had to vacate his appointment on Mr. Moore's arrival, which he did very unwillingly, and with the good wishes of the Governor, who shortly afterwards appointed him Commissioner of Crown Lands for the Wide Bay district of what is now called Queensland. He died March 1, 1853, in his 38th year, after great suffering, caused by exposure in travelling in his district. His Queensland post afforded him many opportunities of making botanical discoveries, and of introducing new plants, of which he very fully availed himself. He was therefore another of the martyrs to science, whom the hardships of early colonial exploration brought to an untimely end, and was at least the fourth officer in charge of the Botanic Gardens who succumbed to zeal for the public service.

"His directorship of the Gardens of little more than three months did not permit him to make his mark on the institution to the extent that he would undoubtedly have done had he continued in office.

"He was, as I have stated, succeeded by the late Mr. Charles Moore, who has but recently passed to his rest. With his directorship commenced the modern era of the Gardens. My predecessor wrote but little, but I have been able to gather together certain data which will enable me, if permitted, at some future time, to lay before my readers some account of the development under his administration of the Sydney Botanic Gardens, an institution of which we are entitled to be proud."

J. H. MAIDEN.

XXXVI.—COLORADO RUBBER.

(*Hymenoxys*, Sp.)

Early in 1904 a correspondent forwarded to Kew an extract from the *Denver Post* of 26th November, 1903, which gave a somewhat enthusiastic account of the discovery by a prospector in Colorado of a rubber-yielding plant. This was spoken of as occurring abundantly in the hills and mesas in the vicinity of Salida, the belt extending into the San Luis Valley, Gunnison County, and as far south as New Mexico. In June, 1905, Mr. E. Naylor, of Bradford, presented to the Museum at Kew a specimen of the dried plant, together with samples of crude and manufactured rubber obtained from it. Mr. Naylor subsequently also communicated seeds of the plant.

Mr. T. D. A. Cockerell, to whom the Museum is also indebted for specimens of the plant and of its rubber, published an account of the species in the *Bulletin of the Colorado Museum* for December, 1903. The plant, which is a member of the natural family *Compositae*, is there identified as *Picradenia floribunda*, *utilis*, which Mr. Cockerell considers to be part of the aggregate *Actinella Richardsoni*. Subsequently, in the *Bulletin of the Torrey Botanical Club* for 1904, p. 461, the same author has